FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT
BROWARD COUNTY, FLORIDA

Broward County Aviation Department

Computer Aided Design (CAD) Standard Manual

FINAL

2022

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Broward County Aviation Department

Computer-Aided Design (CAD) Standard

FINAL

2022

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CHAPTER 1　Introduction

1.1.　Objective of this Document

This Computer-Aided Design (CAD) Standard provides guidance to Broward County Aviation Department (BCAD) staff and consultants who are developing CAD files to be submitted to, maintained by, or used by BCAD staff. It is intended to help BCAD achieve a standardized approach to geospatial data and record drawing management. Developing high quality data that is accessible to those who require it is an integral part of any project or activity. This document will help establish and maintain this quality throughout the lifecycle of such projects, but also for as long as the data remains valid.

This standard has been developed in conjunction with and is compatible with BCAD's Geographic Information Systems (GIS) and Building Information Modelling (BIM) standards. This standard also references and builds upon the National Institute of Building Sciences' National CAD Standards (NCS) and the United States Army Corps of Engineers CAD-BIM Technology Center's A/E/C CAD Standard.

Some of the geospatial data collected and developed for BCAD will also be submitted to the FAA in compliance with the FAA's Airports GIS (AGIS) Program requirements. This data must conform to the requirements outlined in the latest version of FAA Advisory Circular 150/5300-18 (AC18). The BCAD Project Manager, Airport Sponsor, and BCAD GIS Department will provide specifications regarding CAD drawing submittals that must conform to these FAA requirements with project scopes of work.

1.2.　Intended Audience

This standard shall be used by BCAD staff as well as consultants who contract with or support BCAD projects that require the delivery of CAD drawings. BCAD and consultant project managers should be familiar with the contents of this document and what requirements it places on projects they manage. It is assumed that readers have a basic understanding and experience working with CAD drawings in an airport environment, however, a brief overview of how to use this document and a Glossary of Acronyms and Key Terms has been provided.

1.3.　Scope of the Document

This document outlines the requirements of CAD drawings developed by BCAD staff or delivered by its consultants. The development of drawings encompasses the creation of new drawings, as well as updates made to existing drawings. Consultants that employ sub-consultants must ensure that all CAD drawings delivered by their project adhere to this standard. This standard establishes:

- Requirements for drawings preparation including layers to be used, acceptable geometry types, symbology to be used, and text placement.
- A format for title blocks.
- Required sheets and sheet naming and numbering conventions to be used.
- File naming conventions, and, for BCAD staff, the structure of local drive and network directories in which drawings are to be stored.
- Guidelines for consultants submitting drawings to BCAD.

1.4. Acronyms

The following acronyms have been used in this document:

AC	Advisory Circular (as published by the FAA)
A/E/C	Architecture, Engineering and Construction
AIA	American Institute of Architects
ANSI	American National Standard Institute
AGIS	Airport Geographical Information Systems program (managed by the FAA)
BCAD	Broward County Aviation Department
BIM	Building Information Modeling
CAD	Computer-Aided Design
CSDGM	Content Standard for Digital Geospatial Metadata
FAA	Federal Aviation Administration
FGDC	Federal Geographic Data Committee
GIS	Geographic Information System
HARN	High Accuracy Reference Network
ISO	International Organization of Standardization
NAD83	North American Datum of 1983

NAVD88	North American Vertical Datum of 1988
NCS	National CAD Standards
SSI	Sensitive Security Information
SPCS	State Plane Coordinate System

1.5.   Software Requirements

BCAD requires that all CAD files be in AutoCAD drawing format (DWG). These files must be compatible with the following Autodesk software. Consultants who do not use AutoCAD must ensure that translated DWGs that are provided can be used within the software listed below without loss of content or quality.

- **Approved Software, CAD**

   AutoCAD 2013 or later
   AutoCAD 2013 LT or later

- **Approved Software, CAD Vertical Products**

   Autodesk Architectural Desktop
   Autodesk Civil 3D
   Autodesk Map 3D
   Autodesk Raster Design
   AutoCAD TrueView
   Autodesk Design Review
   Autodesk DWF Viewer

1.6.   Electronic Resources

To facilitate compliance with this standard, BCAD has prepared a drawing template that includes title block, layer naming, object data table, and symbology definitions that are consistent with this document. This template should be used wherever possible to develop CAD drawings for BCAD.

1.7.   Related Documents

The following documents are considered normative references to this document, meaning that compliance with these documents is also required. If any discrepancies exist, the most current

version of these reference documents shall prevail, although differences should be noted and discussed with BCAD staff before data delivery.

- BCAD Electronic Media Submittal Requirements
- FAA AC 150/5300-18 "General Guidance and Specification for Aeronautical Surveys: Airport Survey Data Collection and Geographic Information System Standards", if and as-defined in the scope of work provided by BCAD
- Code of Federal Regulations (CFR), Title 49, Chapter XII, Subchapter B, Part 1520, Protection of Sensitive Security Information (SSI)

The following documents are considered informative references to this document, meaning that compliance with these documents is not required but the information they contain may be helpful in complying with the requirements of this document or the normative references above.

- BCAD GIS Data Standards Manual
- BCAD Building Information Modeling (BIM) Standard
- National Institute of Building Sciences' National CAD Standards (NCS)
- United States Army Corps of Engineers CAD-BIM Technology Center's A/E/C CAD Standard

1.8. Revision History

BCAD CAD Standard document has and will continue to be updated and enhanced as appropriate. Suggestions for improvements are strongly encouraged so that updates will reflect the needs of CAD developers and users. This document will also be revised based on changes in technology. The following table lists the revisions that have occurred to this document thus far.

Table 1.8 – Revision History

Rev. No.	Date	Purpose
V2.0	09/2018	CTB files & lineweights table

1.9. Request for variance

Compliance with this standard is mandatory for the development of BCAD CAD drawings. If the requirements of the CAD standards in this document cannot meet the requirements of a project or work activity, the BCAD Project Manager should receive a Request for Variance (see Chapter 7, section 7.1). Work based on such variances shall not commence until approved in writing by BCAD. The submittal of drawings that do not conform to this standard shall include the variance, if approved. In addition, suggested improvements to this standard are welcome and will be considered for a subsequent version of this document. Requests for variance and suggested

improvements shall be submitted on the "Request for variance" form, contained in this document as well as BCAD's web site.

CHAPTER 2   Drawing File Organization

The organization and structure of CAD files is important in order to facilitate efficient retrieval and effective maintenance of CAD data. File standard elements such as coordinate systems, geometry types, drawing and sheet models, sheet assembly, code, and naming conventions all support a sustainable system of CAD files for BCAD and its consultants.

2.1.   Design Area

2.1.1. Drawing Coordinate System

Features in CAD drawings that depict real world objects such as buildings, utility pipes, and airfield lights shall be draw using State Plane Coordinates.

Horizontal coordinates (i.e. X and Y) shall be in the Florida State Plane Coordinate System East Zone referenced to the North American Datum of 1983 (NAD 83), 2011 Adjustment, and the latest geoid (FIPS: 0901, Esri WKID: 6438).

Vertical coordinates (i.e. Z), as required, shall be based on the North American Vertical Datum of 1988 (NAVD88).

Units for both horizontal and vertical data will be the U.S. Survey Foot (1200/3937 meters).

2.1.2. Geometry Types

Features shall be of the following geometry types as specified for each layer in Chapter 7, section 7.2:

- Point features such as airfield lights, manholes and values shall be symbolized by the appropriate AutoCAD Blocks, with the insertion point representing the location of the real world object to within the accuracy tolerance specified.
- Linear features such as utility pipes and marking lines shall be represented by AutoCAD lines or polylines.
- Polygonal features such as buildings and parcels shall be represented by AutoCAD polygons or closed polylines. Hatch patterns may be used within polygonal features.

Objects in drawings that are used to convey graphical references or alphanumeric information, such as annotations, text, dimensions, and leader lines may use other AutoCAD object types including construction lines, revision clouds, and wipeouts. All text shall be MTEXT.

Table 2.1.2 – Geometry Types

Geometry Types	
Usable	Non-Usable
Lines	Spline
Polyline	Donut
Polygon	Region
Revision Cloud	Ellipse
Hatch	Circle
Wipeout	Arc
Point	3D Polyline
Block	Solid
MTEXT	Text
Construction Line	
Ray	
Dimension	
Multileader	

2.1.3. Topology

Topology refers to the positional relationship between features. All features are required to meet the following topology rules.

- **Collocated Vertices** - Collocated vertices in two-dimensional data must share the exact same X and Y coordinates. Vertices collocated in three dimensions must share the same X, Y and Z coordinates. Two-dimensional and three-dimensional vertices are not considered to be collocated.

- **Lines Meet at Endpoints –** Line segments and polylines that join together to represent one continuous string of linear features (e.g. a utility network) should have collocated vertices as endpoints.
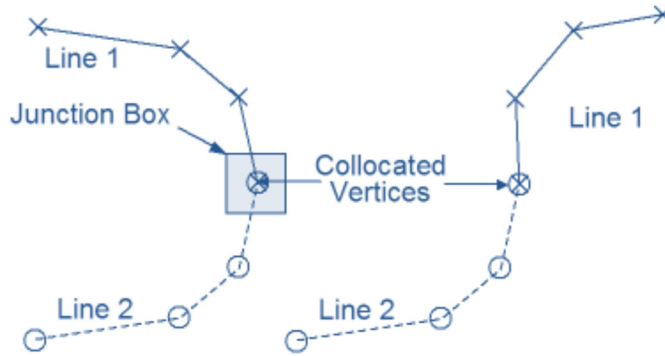
Source: FAA Advisory Circular 18B, Change 1, Page 73

- **Sufficient Density of Vertices** – Lines and polygon edges should contain one or more segments with vertices placed at intervals so the feature does not stray from the actual object it represents by more than half of the defined accuracy limit.
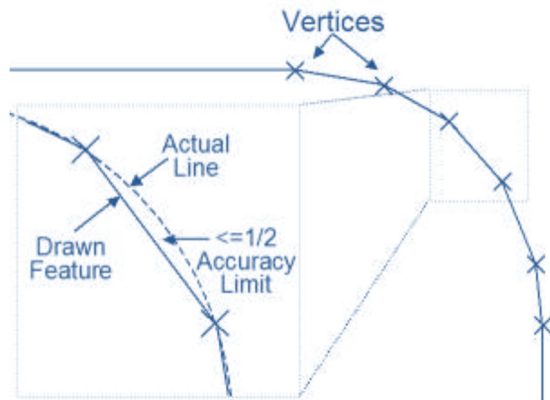
Source: FAA, AC150/5300-18B Change 1, Page 73

- **Shared Vertices between Adjacent Features –** Features that are intended to be adjacent to one another should share all collocated vertices along their common edge(s), as shown in the figure below. This ensures that there are no unintentional gaps (empty space) or slivers (overlaps) between adjacent features.
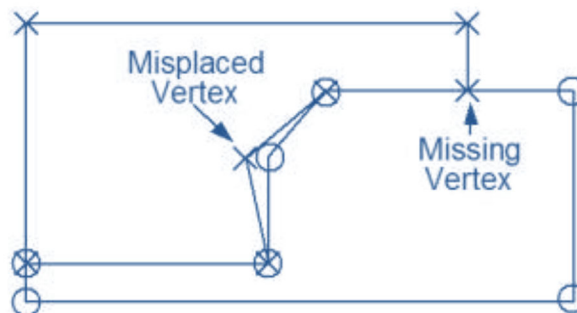
Source: FAA, AC150/5300-18B Change 1, Page 74

- **Polygons must always be closed** – The endpoints of line segments that form a polygon must be collocated and closed in the CAD program as shown in the figures below:
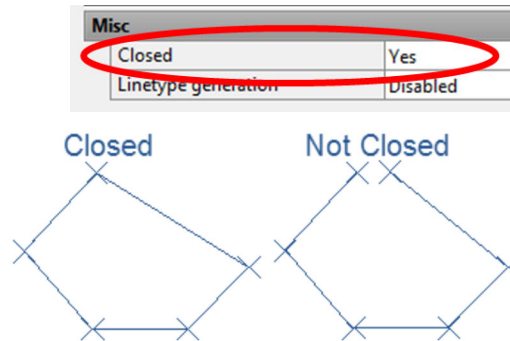
Source: FAA Advisory Circular 18B, Change 1, Page 75

2.1.4. Accuracy Requirements

All features and components of features shall be located within the specified distance of the location of the real world object or component they are meant to represent (i.e. absolute positional accuracy). The accuracy tolerances specified must be achieved at a 95% confidence level meaning that statistically 95% or more of the features will be at this accuracy level or better.

Coordinate values shall be recorded to a precision (i.e. number of decimal places in the coordinate value) that is at least sufficient to represent the accuracy level specified.

2.2.   Design, drawing, and sheet models

2.2.1. Model Space and Paper Space

There are two working spaces within AutoCAD drawing files; Model Space and Paper Space. All drawings created for BCAD shall have model and paper spaces properly organized following these guidelines:

- **Model Space** – All data representing features must be drawn in the model space at full scale, georeferenced and using specific units as per coordination with BCAD's project manager (ie: Enginnering = Feet, Architectural = Inches). All dimensions, text, and other annotations that are not sheet-specific shall also be placed in model space.
- **Paper Space** – Paper space is utilized for plots (sheet files) of drawings created in model space. It usually contains single or multiple viewports each showing a portion of the features in model space. The viewport(s) typically contain a specified scale and

orientation, a border sheet, a legend, north arrow and a scale bar. Descriptive text for the drawing, different from dimensions or object related notes may also be placed in paper space.

2.2.2. Model Files and Sheet Files

There are two distinct types of CAD files that all drawings created for BCAD must follow, Model Files and Sheet Files:

- **Model Files –** Files containing the physical components of the object. Model files are drawn in model space, at full scale, georeferenced and typically represent all design information. They can be generated either by placing graphics or from BIM model extractions/views. Model files are used as components in creating plotted sheet files. The information contained within model files for a discipline may be referenced by other disciplines to create their particular model files or sheet files for that discipline. Model files are always referenced by other files. Model Files shall follow the naming convention in section 2.4.2.

- **Sheet Files –** Sheet file is a "*ready-to-plot*" CAD file. This sheet file is a selected view or portion of referenced model file(s) within a 1:1 border sheet. The Sheet may also include additional sheet-specific information in paper space (e.g., general notes, scale, and north arrow). Model space inside the sheet file contains the referenced model information assembled, as it would be displayed on a sheet. These models shall be georeferenced and would be used as the primary model for graphical information to be displayed in the sheet's viewports. Sheet Files are never referenced by other files. Sheet files shall follow the naming convention in section 2.4.3.

2.2.3. Reference Files (XREF)

Externally referenced files (XREFs) enable CAD software users to incorporate features from other drawings without redundantly storing a copy of the data in the drawing with which they are working.

All XREFs shall be "*overlaid*", with a "*relative path*" at insertion point of 0, 0, 0. Never bind references.

Model Files shall be XREFed into Model Space.
Border / Title block files shall be XREFed into paper Space.

XREFs shall be put on layer "*G-ANNO-REFR*". Users can create separate REFR layers using the 2nd minor group if desired. (e.g., *G-ANNO-REFR-ARCH*)

Figure 2.2.3. Sheet file composition using Design Model and Sheet Model.
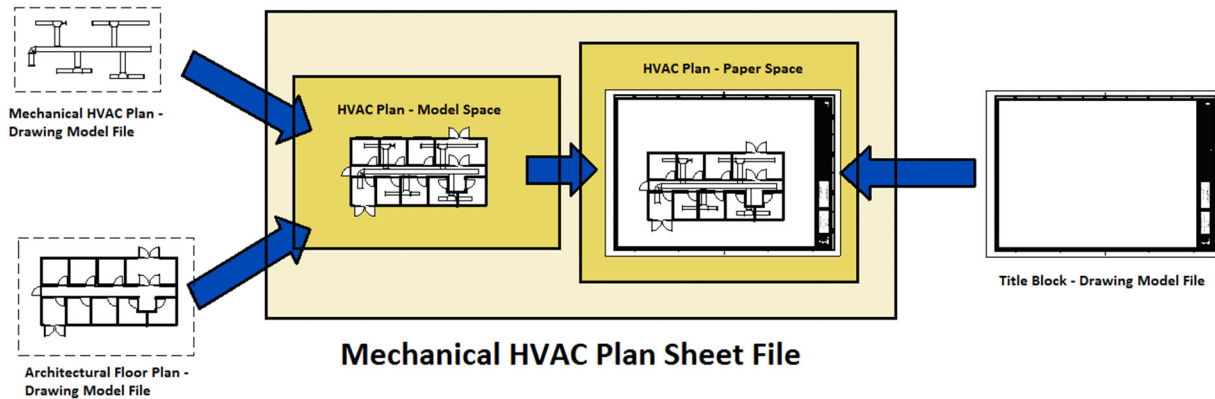
Source: ERDC/ITL TR-12-6; Release 6.0, Page 9

2.2.4. Raster Files

For interoperability, the only raster file types allowed to be referenced are TIF, JPG, and PDF. Raster file names shall conform to the model file naming convention with a model file type of "IG" (e.g., *C-IGXXXX.tif/jpg).

Raster File Types uses:

- GeoReferenced TIF: best suited for aerial photographic imagery, maps, and drawings where the image is referenced under line work to add more clarity.
- JPG: best suited for for non-aerial photographic imagery used for depicting existing conditions referenced to sheets.
- PDF: best suited for drafted drawings to be used as background images.

Note: *MrSID files are NOT to be directly referenced. MrSID files are typically extremely large and unwieldy to manage in a CAD environment. It is recommended that the MrSID image be clipped, resampled, and saved as a GeoReferenced TIF file. The smaller file size allows the software to open faster and plot more effectively*

2.3.   Drawing Sheet Assembly

2.3.1. Sheet Sizes

 Drawing sheets shall be prepared on ANSI D (22"x34") sized sheets. This size will allow the use of ANSI B (11" X 17") for a true half size. Arch E (36"x48") or E1 (30"x42") shall be used for large maps (e.g., installation master plans and drawings for civil works projects), and ANSI A

(8.5"x11") and B (11"x17") shall be use for exhibits. Additional sizes must be approved at the beginning of the project by the BCAD Project Manager using the request for variance form in Chapter 7, section 7.1. Standard sheet specifications are detailed on **Table 2.3.1**, Standard Sheet Sizes.

Table 2.3.1 – Standard Sheet Sizes

| SIZE DESIGNATION | VERTICAL | HORIZONTAL | MARGIN | | |
| | | | Horizontal | Vertical | |
				Left	Right
ANSI A (Landscape)	8.5	11	0.75	1.50	0.75
ANSI A (Portrait)	11	8.5	0.75	1.50	0.75
ANSI B	11.0	17.0	0.75	1.50	0.75
ANSI D	22.0	34.0	0.75	1.50	0.75
Arch C	18.0	24.0	0.75	1.50	0.75
Arch D	24.0	36.0	0.75	1.50	0.75
Arch E	36.0	48.0	0.75	1.50	0.75
Arch E1	30.0	42.0	0.75	1.50	0.75

2.3.2. Border Sheet

In an effort to make sheets more consistent across all departments, the only borders sheets that shall be used are the ones defined in this section. These border sheets files can be found on BCAD's website.

BCAD border sheet is broken out into three main areas. These areas are the Production Data Area, Drawing Area, and Title Block Area (**Figure 2.3.2.1**). Of these three areas, only the Production Data Area is optional.

This Border Sheets file shall be inserted in Sheet Model (PAPER SPACE) as XREFs, at 0, 0, 0 with "relative path", allowing this XREFs file to easily resolve when transfer. A relative path allows XREFs to be found by the CAD program by only having to look at parent and/or sibling folders, not the entire file path from the root directory. This allows folders of CAD files to be moved to new locations and minimize the chance that the CAD program cannot find the same XREFs again. Drawing-specific data, such as date, title, etc., will be recorded on each drawing as part as the Production Data Area.

Figure 2.3.2.1. Three Main Areas of Border Sheets
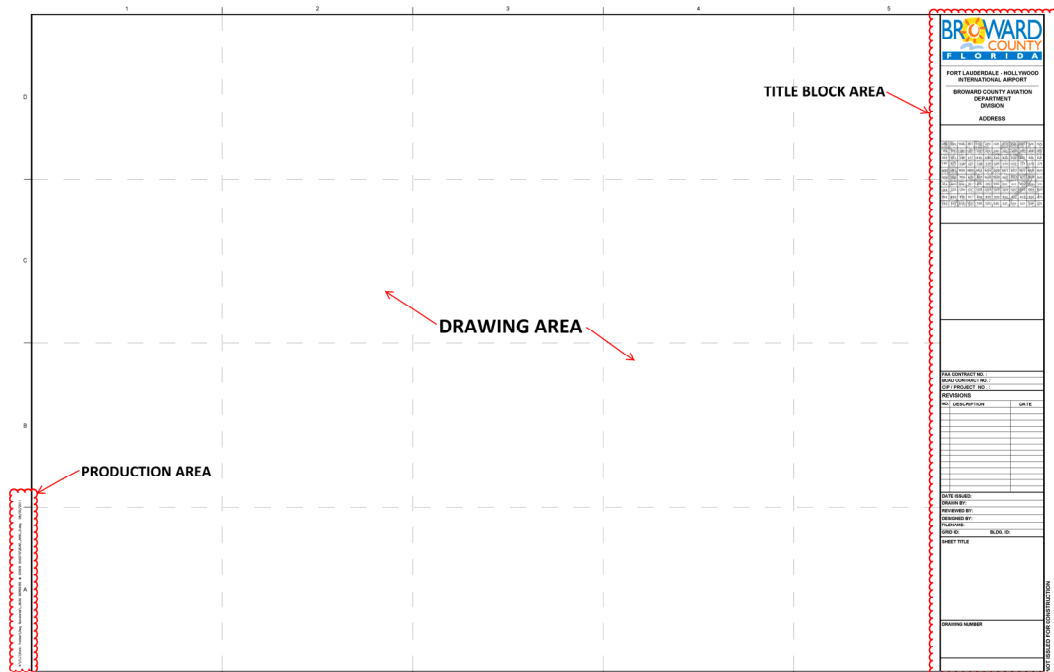
The Production Data Area contains information about the sheet and when it was last plotted. The information is located outside of the Drawing Area border in the lower left side of the sheet (**Figure 2.3.2.2**). This information will be generated automatically by the template and includes the following:

- full path and file name
- Layout name
- Date sheet was plotted
- Time sheet was plotted
- Username

Figure 2.3.2.2. Border Sheet Production Area
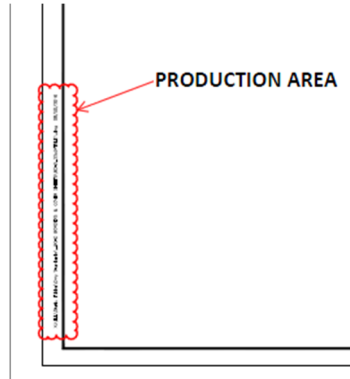
The Drawing Area is where graphic/textual items (e.g., plans, sections, elevations, schedules, details, notes) used to convey additional information is placed. The Drawing Area is broken up into a modular grid for the placement of these items. To identify locations within the Drawing Area, the grid is labeled with characters and numbers. The characters are in alphabetical order (A, B, C, D, etc.) from lower left to top left of the grid. The numbers are in numerical order (1, 2, 3, 4, etc.) from upper left to upper right of the grid. To avoid confusion, the alphabetic characters I and O are not used. Each grid cell measures 3 in. × 3 in.

When placing items into the grid, the lower left corner of the item should fall near a grid intersection. Items are not required to fit exactly within the 3 in. × 3 in. module; they are allowed to take up more than one grid cell in the vertical and/or horizontal direction. However, if an item does not fill up a complete module, other items are not allowed to take up the remainder of the module's space (Figure X-X). Instead, that item should be placed in the next available module (**Figures 2.3.2.3 and 2.3.2.4**).
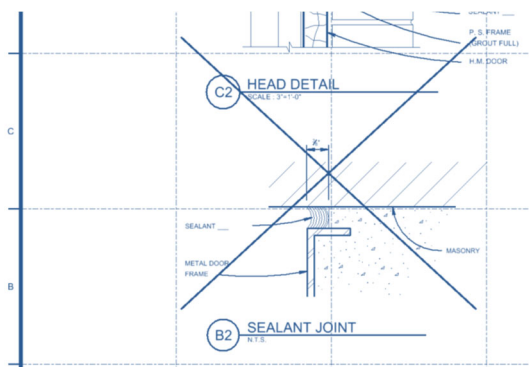
Source: ERDC/ITL TR-12-1; Release 2.0, Page 6

Figure 2.3.2.3. Incorrect grid module use.

Source: ERDC/ITL TR-12-1; Release 2.0, Page

Figure 2.3.2.4. Correct grid module use.

If general notes, keynotes, or key plans are included on a sheet, they should be located in the modules beside the Title Block Area.

Figure 2.3.2.5. Notes Area
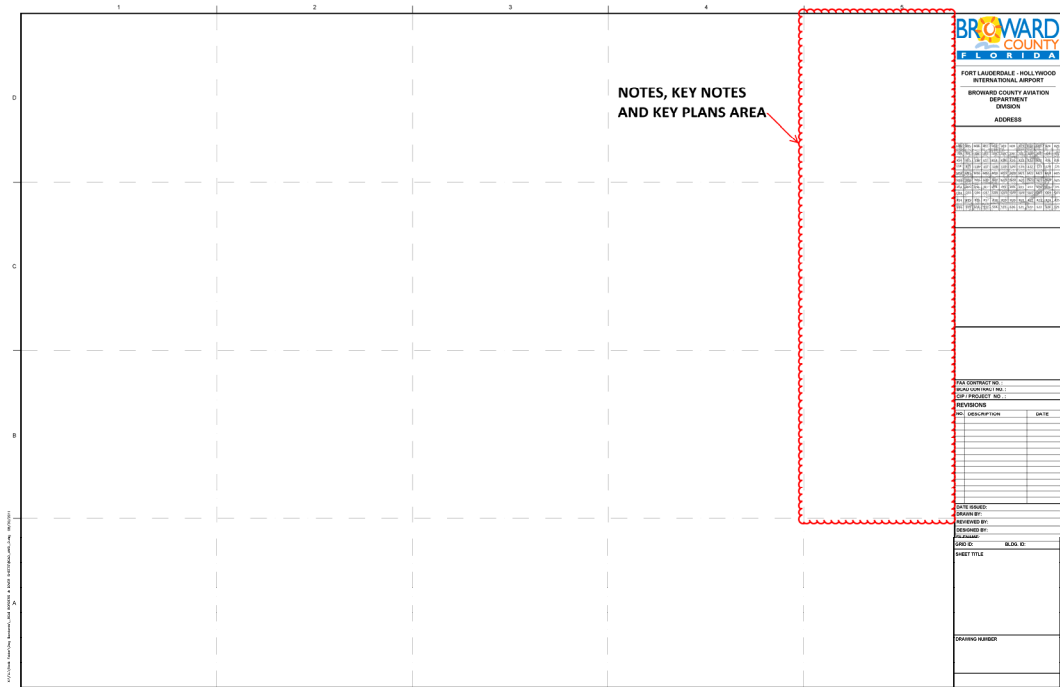
The Title Block Area: BCAD uses a vertical title block placed in the right-hand margin of the border sheet as shown in **Figure 2.3.2.6**. This allows the most usable drawing area on a sheet while keeping the most prevalent and pertinent information to remain at the bottom right of the sheet. The title block area will include the following:

- BCAD Logo & Department
- Key Map (optional, it can be turn off or on as required)
- Designer Identification Block
- Revision (Issue) Block
- Management Block
- Project Identification/Sheet Title Block
- Sheet Identification Block
- Additional space is provided for other information (consultant's logo and information, extra notes, etc.)

A block with all editable title block information will be provided with the Border Sheet file. This block shall be inserted in the Sheet Model (Paper Space) at 0,0,0, scale 1:1, and edited accordingly.

Figure 2.3.2.6. Title Block Area.
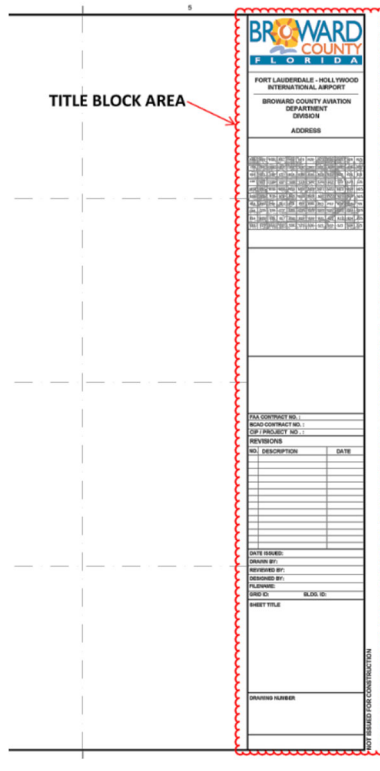
The **Key Map** is part of the Title Block Area and it consists of a site plan of the airport (FLL/HWO) with a grid with unique identifiers for each tile as shown in **Figure 2.3.2.7.** You are not required to use the preset grid for your project. Depending on your project size a grid shall be set similar to what is shown in **Figure 2.3.2.7** and all design plans for that project shall follow the same grid pattern. If the project is small enough the Key Map can be enlarge to better show your project location.

Figure 2.3.2.7. Key Map

KEY MAP
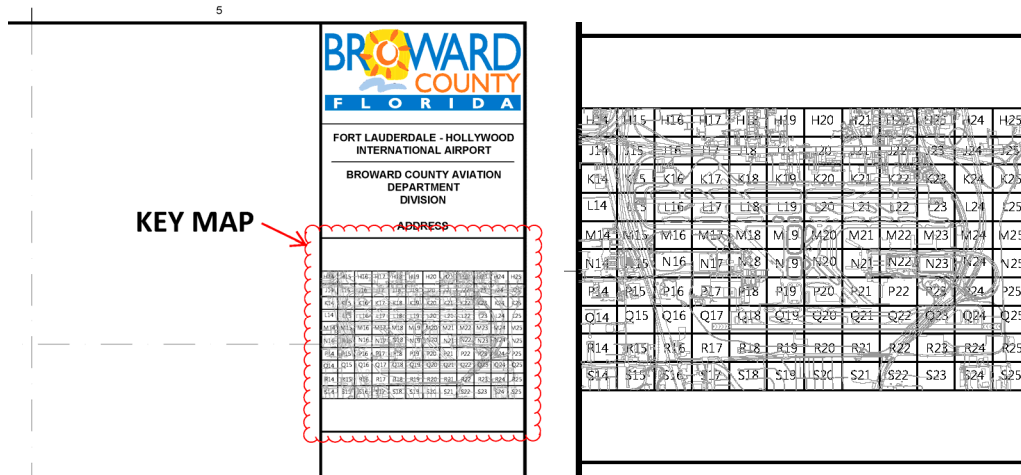
2.3.3. BCAD Logo

A vectorized version of BCAD's logo is included in the Cover and Border Sheet. This vectorized version shall be used in place of an image file format (e.g. JPG, BMP, or TIF) to eliminate image attachments and to ensure the correct display when printing. Additional consultants' logos will be used for Engineering and Architectural projects on Cover Sheets as well as Border Sheets accordingly.

2.3.4. North Arrow

An arrow that shows the direction of the North Pole (i.e. True North) shall be provided on all Sheet Files that show the horizontal location of features (i.e. planimetric perspective). Such a North Arrow is not required on Sheet Files that contain only features that are not shown planimetrically such as riser diagrams, schematic diagrams, or one-line diagrams.

BCAD provides a number of standard North arrows to be used when creating Sheet files. These are provided as blocks within the template file. The north arrow (**Figure 2.3.2.8**) shall be placed in the lower right-hand corner of the drawing area. If possible, the orientation of true north shall be maintained throughout an entire drawing set.

Figure 2.3.2.8. North Arrow and Scale Bar Area.

NORTH ARROW AND
SCALE BAR AREA
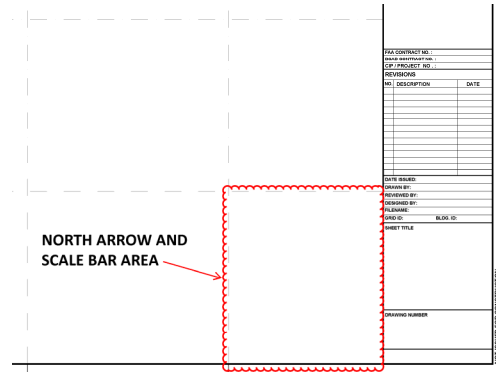
2.3.5. Revision Block

The Revision Block (**Figure 2.3.5**) contains a history of revisions to the sheet. It consists of three fields that contain information about each amendment or modification—Revision No., Description, and Date. All text placed within this block shall be 3/32 in. high.

Figure 2.3.5. Revision (Issue) Block.

- **Revision No.** - This column shall contain either a numeric Amendment character (1, 2, 3, etc.) or an upper-case alphabetic Modification character (A, B, C, etc.). These characters shall relate to revision symbols with the same corresponding characters found on the sheet. The first Amendment or Modification character shall be placed on the lowest line of the Revision Block and subsequent entries shall be made above it.

- **Description** - The DESCRIPTION column shall present brief information related to the Amendment or Modification that directs the reader to more detailed

information found in a revision document (e.g., REVISED IN ACCORDANCE WITH AMDT 0004, GENERAL REVISIONS MOD 0006, REVISED TO SHOW AS-BUILT CONDITIONS).

- **Date -** The DATE column contains the date (month and year) the revision was released in the change documentation. All dates shall be in the following format: MMM YYYY (e.g., OCT 2016, JUN 2016)

2.3.6. Cover Sheet

BCAD's Cover sheet shall appear as the first sheet of all project drawing sets. The intent of the cover sheet is to provide basic project information about the project. Also BCAD's cover sheets varies depending on the type of project. For example, there is a Cover sheet intended for "planning projects" (Master Plans, ALP, etc) and a different Cover Sheet for Architectural and Engineering projects, as shown in Figures X-X and X-X.

Cover sheets for **"Architectural and Engineering Projects"** include the following information:

- BCAD Logo
- Airport and Project Name
- Submission Name (e.g. 30 percent Design, Bid Documents, etc.)
- Contract No, BCAD-CO-00-000 (last five digits assigned by BCAD Office of Planning and Development (OP&D))
- BCAD department office (i.e. Office of Planning and Development)
- Board of County Commissioners
- Vicinity Map and Project Location Map
- Consultant Signature Block (to include: logo, signature line, date line and stamp block)
- Airport Signature Block (to include: signature line, date line and stamp block).

Figure 2.3.6.1. Cover Sheet – Architectural and Civil Projects.

Cover sheets for **"Planning Projects"** include the following information:

- BCAD Logo
- Airport and Project Name
- DRAFT of FINAL Stamp
- Board of County Commissioners
- Vicinity Map and Project Location Map
- Airport Signature Block (to include: signature line, date line and stamp block)
- Index Sheet

Figure 2.3.6.2. Cover Sheet – Planning Projects.

2.3.7. Sheet Scale

The scale or scales used for a drawing shall be stated in words and/or figures (graphic scale bar) under the Drawing Block Title of each plan, elevation, section, part, or detail (Figure X-X). If one or more scales are used on a sheet, a graphic scale or scales must appear on the sheet for each scale used on that sheet. This will ensure that if a sheet is plotted, the sheet can be verified as plotted to the correct scale. When used, the drawing scale text shall be placed at the bottom left of the drawing title, and/or the graphic scale shall be placed on the bottom right of the drawing title as shown in Figure X-X.

Figure X-X. Acceptable methods for showing scales.
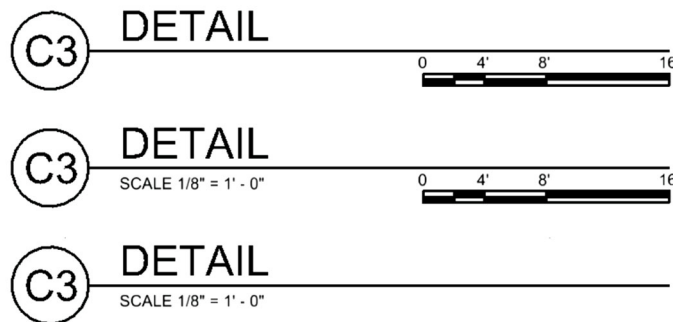
Source: ERDC/ITL TR-12-1; Release 2.0, Page 32

Additional to this information, each drawing shall be established at a drawing scale of 1:1 in the Design Model (Model Space) allowing the accurate preparation of views in the Sheet Model (Paper Space). Using the following **Table 2.3.7** containing zoom scale factors,

it will ensure the true scale for the viewports.

Table 2.3.7 - SHEET SIZES, DRAWING FIELD, AND SCALE FACTORS

PLOT SCALE	DRAWING AREA SIZE (H X W) *		SCALE FACTOR NXP	
	B (9.5" x 13.25")	D (19" x 26.5")		
1/8"=1'-0"	76' x 106'	152' x 212'	0.0104XP	
3/16"= 1'-0"	50.7' x 70.7'	101.3' x 141.3'	0.0156XP	
¼"=1'-0"	38' x 53'	76' x 106'	0.0208XP	
3/8"= 1'-0"	25' x 35'	50.7' x 70.7'	0.0312XP	Architectural Units
½"=1'-0"	19' x 26.5'	38' x 53'	0.0416XP	
¾"=1'-0"	12.7' x 17.7'	25.3' x 35.3'	0.0625XP	
1"= 1'-0"	9.5' x 13'	19' x 26.5'	0.0833XP	
1 ½"=1'-0"	6' x 8.9'	12.7' x 17.7'	0.125XP	
3"= 1'-0"	3' x 4.4'	6.3' x 8.8'	0.25XP	
6"=1'-0"	1.6' x 2.2'	3.2' x 4.4'	0.50XP	
12"=1'-0"	0.8' x 1.1'	1.6' x 2.2'	1XP	
1"= 10'-0"	95' x 132.5'	190' x 265'	10XP	
1"=20'-0"	190' x 265'	380' x 530'	20XP	
1"=25'-0"	237.5' x 331'	475' x 662.5'	25XP	Decimal Units
1"=30'-0"	285' x 397.5'	570' x 795'	30XP	
1"=50'-0"	475' x 662.5'	950' x 1325'	50XP	
1"=100'-0"	950' x 1325'	1900' x 2650'	100XP	

Source: BCAD ALP CAD Standards, Page 27

2.4.   Electronic drawing file naming conventions

Naming conventions for electronic drawing files (both model files and sheet files) allow CAD users and automated processes to determine the contents of a drawing without opening the file. They also provide a convenient and clear structure for organizing drawing files within project directories.

2.4.1. Project code

The Model File naming convention and the Sheet File naming convention both require a Project Code (1 to 20 characters) at the beginning of the file name. The Project Code shall be identified at the start of each project to ensure consistent file names within that project. The use of Project Codes in file names prevents the same file name from existing in different directories.

2.4.2. Model file naming convention

The model file naming convention (**Figure 2.4.2**) has four mandatory fields. All fields must be used and in the correct sequence.

Following the Project Code field, the first two-character field represents the Discipline Designator. The allowable characters for the first character in the Discipline Designator are listed in **Table 2.4.2.1**. The second character of the Discipline Designator field is always

a hyphen (-). The next two-character field represents the Model File Type (**Table 2.4.2.2**). The final field is user definable, and all four characters shall be used. For most projects, the User Definable characters should be '**BASE**'. Only if you need to split the base files into multiple CAD files will this differ.

Figure 2.4.2. Model file naming convention.
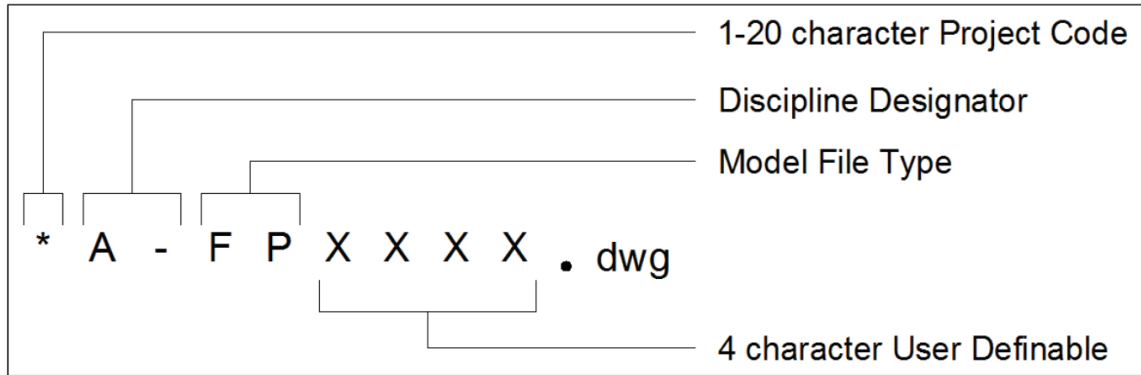
Source: A/E/C CAD Standard Release 6.0, Change 2, Page 11

Table 2.4.2.1. Discipline Designators

Discipline	Designator
General	G
Survey/Mapping	V
Civil	C
Landscape	L
Structural	S
Architectural	A
Electrical	E
Hazardous Materials	H
Geotechnical	B
Interiors	I
Fire Protection	F
Plumbing	P
Mechanical	M
Telecommunications	T

Table 2.4.2.2. Model File types

Discipline	Code	Definition
General	BS	Border sheet
	CS	Cover sheet
	IG*	Raster imagery (scanned and photographic)
	KP	Key plan
Hazardous materials	DT	Detail
	EL*	Elevation
	IG*	Raster imagery (scanned and photographic)
	LG*	Legend
	PP	Pollution prevention plan
	QP*	Equipment plan
	SC	Section
	XD*	Existing/Demolition plan
Survey/Mapping	AL	Existing airfield lighting plan
	CP	Existing communication system plan
	EU	Existing electrical utilities plan
	HP	Existing hydrographic survey and
	HT	Existing HTCW Utilities Plan
	IG*	Raster imagery (scanned and photographic)
	LG*	Legend
	PB	Property boundary
	PP*	Plan and profile
	PR	Existing profile
	SC	Existing section
	SV	Survey and mapping plan
	UP	Existing utilities plan
Geotechnical	DT	Detail
	IG*	Raster imagery (scanned and photographic)
	JP	Joint layout plan
	LB	Boring log
	LG*	Legend
	PV	Pavement site plan
	SC	Section
	SH*	Schedule
	SI	Subsurface investigation plan
Civil	AF	Airfield plan

Discipline	Code	Definition
	BR	Beach renourishment plan
	DT	Detail
	EL	Elevation
	ER	Eco-restoration plan
	FC	Flood control plan
	GP	Grading plan
	IG*	Raster imagery (scanned and photographic)
	IP*	Installation plan/Base map
	JP	Joint layout plan
	KP*	Staking plan
	LG*	Legend
	NG	Navigation/Dredging plan
	PL*	Project location map
	PP*	Plan and profile
	PR	Profile
	SC	Section
	SH*	Schedule
	SP	Site plan
	TS	Transportation site plan
	UP	Utilities plan
	XD*	Existing/Demolition plan
	DT	Detail
	EL*	Elevation
	IG*	Raster imagery (scanned and photographic)
	IP	Irrigation plan
	LG*	Legend
Landscape	LP	Landscape plan
	SC*	Section
	SH*	Schedule
	XD*	Existing/Demolition plan
	3D	Isometric/3D
	BP	Bridge plan
	CP*	Column plan
Structural	CW	Misc. Small civil works structures
	DT	Detail
	EL	Elevation

Discipline	Code	Definition
	EP	Enlarged plan
	FC	Flood control structures
	FN	Foundation plan
	FR	Framing plan
	IG*	Raster imagery (scanned and photographic)
	LD	Locks and dams plan
	LG	Legend
	SC	Section
	SH*	Schedule
	XD*	Existing/Demolition plan
Architectural	3D*	Isometric/3D
	AC	Area calculations/Occupancy plan
	CP	Reflected ceiling plan
	DT	Detail
	EL	Elevation
	EP*	Enlarged plan
	FP	Floor plan
	IG*	Raster imagery (scanned and photographic)
	LG*	Legend
	QP	Equipment plan
	RP	Roof plan
	SC	Section
	SH*	Schedule
	XD*	Existing/Demolition plan
Interiors	3D*	Isometric/3D
	DT	Detail
	EL	Elevation
	EP*	Enlarged plan
	FL	Floor patterns
	IG*	Raster imagery (scanned and photographic)
	LG*	Legend
	QP*	Equipment plan
	RP	Furniture plan
	SC*	Section
	SH*	Schedule
	SP	Signage placement plan

Discipline	Code	Definition
	WP	System furniture plan
	XD*	Existing/Demolition plan
Fire protection	3D*	Isometric/3D
	DG*	Diagram
	DT	Detail
	FA	Fire alarm/Detection plan
	FP	Fire suppression plan
	IG*	Raster imagery (scanned and photographic)
	LG*	Legend
	LP	Life safety plan
	SC*	Section
	SH*	Schedule
	XD*	Existing/Demolition plan
Plumbing	3D*	Isometric/3D
	DG	Diagram
	DT	Detail
	EL*	Elevation
	EP*	Enlarged plan
	IG*	Raster imagery (scanned and photographic)
	LG*	Legend
	PP	Piping plan
	QP*	Equipment plan
	SH*	Schedule
	XD*	Existing/Demolition plan
Mechanical	3D*	Isometric/3D
	DG	Diagram
	DT	Detail
	EL	Elevation
	EP*	Enlarged plan
	HP	HVAC plan
	HS	Hydraulic systems
	HT	HTCW utilities plan
	IG*	Raster imagery (scanned and photographic)
	LG*	Legend
	MD	Machine design plan

Discipline	Code	Definition
	MH	Material handling plan
	QP*	Equipment plan
	SC	Section
	SH*	Schedule
	SP	Specialty piping plan
	XD*	Existing/Demolition plan
Electrical	AL	Airfield lighting plan
	AP*	Auxiliary power plan
	CP	Exterior communication systems plan
	DG	Diagram
	DT	Detail
	EU	Electrical utilities plan
	GP	Grounding system plan
	IG*	Raster imagery (scanned and photographic)
	LG*	Legend
	LP	Lighting plan
	PP	Power plan
	PS*	Panel schedule
	QP*	Equipment plan
	SH*	Schedule
	SS	Special systems plan
	XD*	Existing/Demolition plan
Telecommunications	DG	Diagram
	DT	Detail
	IG*	Raster imagery (scanned and photographic)
	LG*	Legend
	QP*	Equipment plan
	SH*	Schedule
	TP	Telephone/Data plan
	XD*	Existing/Demolition plan

Occasionally, more than one Model Type (e.g., Joint layout plan and Grading plan) will be represented in one model file. If this is the case, the dominant Model Type determines the Model Type Designator.

Existing/Demolition model file naming. There are instances when a facility is being renovated and the as-built designs need to be revised to show demolition and new items. These revisions would not be made on existing as-built model files but on copies to ensure the original as-builts are not modified.

A model file type, Existing/Demolition (XD), has been added to the standard to allow users to make revisions to as-built files. This model file type is used to aid users in separating existing-to-remain items from items that will be demolished.

2.4.3. Sheet file naming convention

The sheet file naming convention (Figure 2-3) also has four mandatory fields. Similar to the format for model file naming, all fields must be used and in the correct sequence.

Figure 2-3. Sheet file naming convention.
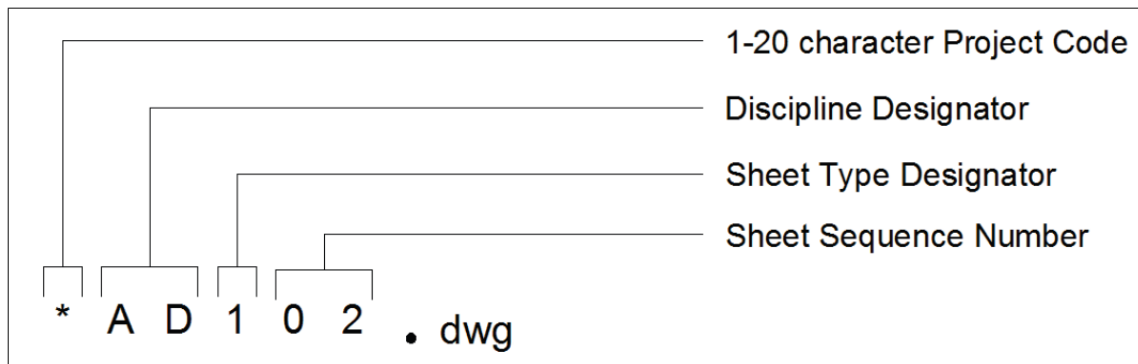
Source: A/E/C CAD Standard Release 6.0, Change 2, Page 18

The first field is used for a 1- to 20-character Project Code (see section 2.4.1, "Project code"). The next two characters are the Discipline Designator with either a hyphen or an alphabetical Designator (Table 2-3). The next character is the Sheet Type Designator (Table 2-4) followed by a two-character Sheet Sequence Number (01–99).

Table 2-3. Sheet File Discipline Designators.

Discipline	Designator	Description	Content
General	G-	All general	All or any portion of subjects in the following Discipline Designators
	GI	General information	Drawing index, code summary, symbol legend, orientation maps
	GC	General contract	Phasing, schedules, contractor staging areas, fencing, haul routes, erosion control, temporary and special requirements
	GR	General resource	Photographs, soil borings
Hazardous materials	H-	All hazardous materials	All or any portion of subjects in the following Discipline Designators
	HA	Asbestos	Asbestos abatement, identification, containment
	HC	Chemicals	Toxic chemicals handling, removal, storage
	HL	Lead	Lead piping, paint removal

Discipline	Designator	Description	Content
	HP	PCB	PCB containment and removal
	HR	Refrigerants	Ozone depleting refrigerants
Survey/Mapping	V-	All Survey/Mapping	All or any portion of subjects in the following Discipline Designators
	VA	Aerial survey	Aerial surveyed points and features
	VB	Boundary	Boundary survey
	VC	Computated points	Computated points and features
	VF	Field survey	Field surveyed points and features
	VH*	Hydrographic survey	Hydrographic surveyed points and features
	VI	Digital survey	Digitized points and features
	VN	Node points	Node points and features
	VS	Staked points	Staked points and features
	VU	Combined utilities	
	VL	Land	Land/property/American Land Title Assoc. (ALTA) survey
Geotechnical	B-	All geotechnical	All or any portion of subjects in the following Discipline Designators
	BB*	Boring logs	Boring logs
	BS*	Stratigraphy	Stratigraphy profiles
Civil	CD	Civil demolition	Structure removal and site clearing
	C-	All Civil	All or any portion of subjects in the following Discipline Designators
	CS	Civil site	Plats, topographic, dimension control
	CG	Civil grading	Excavation, grading, drainage, erosion control, retention ponds
	CT	Civil transportation	Waterways, wharves, docks, trams, railways, airfields, people movers
	CP	Civil paving	Roads, driveways, parking lots
	CU	Civil utilities	Water, sanitary sewer, storm sewer, power, communications, natural gas, steam systems
	CI	Civil improvements	Pavers, flagstone, exterior tile, furnishings, retaining walls, water features
	CB*	Civil beach renourishmen	Beach disposal and renourishment
	CE*	Civil ecosystem restoration	Environmental restoration
	CF*	Civil flood control	Levees, spillways, pump stations
	CH*	Civil shore protection	Erosion protection structures on shoreline
	CN*	Civil navigation	Navigation, harbors, dredging

Discipline	Designator	Description	Content
	CO*	Civil operation and maintenance	Repair and upgrade to O&M structures
	CR*	Civil recreation	Recreation facilities
	CX*	Civil security	Security-related work
Landscape	LD	Landscape demolition	Protection and removal of existing landscape
	L-	All Landscape	All or any portion of subjects in the following Discipline Designators
	LS	Landscape site	All site hardscape and callouts
	LG	Landscape grading	Proposed contours and spot grades
	LI	Landscape irrigation	Mainlines, valves, controllers, pumps, etc.
	LL	Landscape lighting	
	LP	Landscape planting	Landscape planting
	LR	Landscape relocation	Vegetation relocation information
Structural	SD	Structural demolition	Protection and removal
	S-	All Structural	All or any portion of subjects in the following Discipline Designators
	SS	Structural site	
	SB	Structural substructure	Foundations, piers, slabs, retaining walls
	SF	Structural framing	Floors and roofs
	SC*	Structural components	Gates, armor, bulkheads, railings
	SR*	Structural reinforcement	Concrete reinforcement and anchors
	ST*	Structural superstructure	Walls, decks, abutments, gates, weirs
Architectural	AD	Architectural demolition	Protection and removal
	A-	All Architectural	All or any portion of subjects in the following Discipline Designators
	AS	Architectural site	
	AE	Architectural elements	General architectural
	AI	Architectural interiors	
	AG	Architectural graphics	
	AF	Architectural finishes	

Discipline	Designator	Description	Content
Interiors	ID	Interior demolition	Protection and removal
	I-	All Interiors	All or any portion of subjects in the following Discipline Designators
	IN	Interior design	
	IF	Interior furnishings	
	IG	Interior graphics	Murals and visuals
Fire Protection	FD*	Fire protection demolition	Protection and removal
	F-	All Fire protection	All or any portion of subjects in the following Discipline Designators
	FA	Fire protection detection and alarm	
	FX	Fire protection suppression	Fire extinguishing systems and equipment
Plumbing	PD	Plumbing demolition	Protection, termination, removal
	P-	All Plumbing	All or any portion of subjects in the following Discipline Designators
	PS	Plumbing site	Extensions and connections to Civil Utilities
	PL	Plumbing fixtures	Domestic water, sanitary and storm drainage, fixtures
	PP	Plumbing piping	Piping, valves, insulation
	PQ	Plumbing equipment	Pumps and tanks
Mechanical	MD	Mechanical demolition	Protection, termination, removal
	M-	All Mechanical	All or any portion of subjects in the following Discipline Designators
	MH	Mechanical HVAC	Ductwork, air devices, equipment
	MI	Mechanical instrumentation	Instrumentation and controls
	MP	Mechanical piping	Chilled and heating water, steam
	MS	Mechanical site	Utility tunnels and piping between facilities
	MY*	Mechanical hydraulic systems	Pump stations, spillways, slide gates
	MW*	Mechanical distributed energy	
Electrical	ED	Electrical demolition	Protection, termination, removal
	E-	All Electrical	All or any portion of subjects in the following Discipline Designators
	ES	Electrical site	Exterior electrical systems (power, lighting, auxiliary)

Discipline	Designator	Description	Content
	EI	Electrical instrumentation	Controls, relays, instrumentation, measurement
	EL	Electrical interior lighting	Interior lighting
	EP	Electrical interior power	Interior power
	ET	Electrical telecommunication	Telephone, network, voice, and data cables
	EY	Electrical interior auxiliary systems	Alarms, nurse call, security, CCTV, PA, music, clock, program
	EA*	Electrical airfield lighting and navaids	Visual air navigation systems
	EC*	Electrical cathodic protection	Cathodic protection systems
	EG*	Electrical grounding	Grounding, lightning protection devices
	EW*	Electrical distributed energy	
Telecommunications	TD*	Telecommunications demolition	Protection, termination, removal
	T-	All Telecommunications	All or any portion of subjects in the following Discipline Designators
	TA	Audio visual	Cable, music, CCTV systems
	TC	Clock and program	Time generators and bell program systems
	TI	Intercom	Intercom and public address systems
	TM	Monitoring	Monitoring and alarm systems
	TN	Data networks	Network cabling and equipment
	TT	Telephone	Telephone systems, wiring, equipment
	TY	Security	Access controls and alarm systems
	TS*	SCADA	Supervisory control and data acquisition (SCADA) systems and equipment
Resource	R-	All resource	All or any portion of subjects in the following Designators
	RC	Resource civil	Surveyor's information and existing civil drawings
	RS	Resource structural	Existing facility structural drawings
	RA	Resource architectura	Existing facility architectural drawings
	RM	Resource mechanical	Existing facility mechanical drawings
	RE	Resource electrical	Existing facility electrical drawings
	RR	Resource real estate	Real estate drawings
	RG*	Resource green	LEED drawings

Discipline	Designator	Description	Content
Other disciplines	X		
Operations	O		

* = Not in NCS 6.0

Table 2-4. Sheet Type Designators.

Sheet Type	Designator
General (symbols legend, notes, etc.)	0
Plans (horizontal views and combination plan and profile)	1
Elevations and profiles (vertical views)	2
Sections (sectional views, cross sections, etc.)	3
Large scale views (Scaled up reproductions of plans, elevations, or sections that are not details)	4
Details	5
Schedules and diagrams	6
User defined	7
User defined	8
3D Representations (isometrics, perspectives, photographs)	9

Note: Occasionally, more than one Sheet Type (e.g., plan, elevation, detail) will be represented in one sheet file. If this is the case, the dominant Sheet Type determines the Sheet Type Designator.

2.4.4. Adding supplemental drawing sheet

If a sheet needs to be added between two sequential sheets, a Supplemental Drawing Designator may be appended to the end of a sheet file name (Figure 2-4).

Figure 2-4. Supplemental drawing designator.
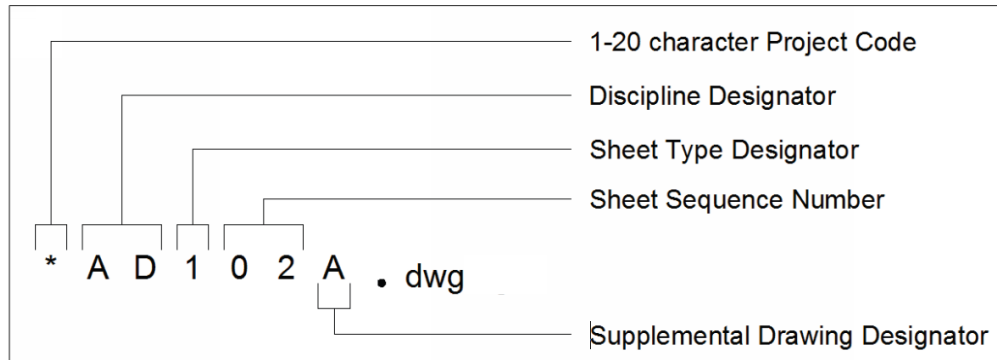
Source: A/E/C CAD Standard Release 6.0, Change 2, Page 24

2.5.   Coordination between sheet file name and sheet identifier

In assigning a sheet identifier (for use in the sheet identification block, reference bubbles, etc.), the user should coordinate with the filename assigned to the actual electronic sheet file. The sheet identifier shall consist of the discipline designator, sheet type designator, and the sheet sequence number.

CHAPTER 3   GRAPHIC CONCEPTS

3.1.   Presentation Graphics

In order to establish an effective CAD standard is necessary to develop a uniform approach to presentation graphics. These graphics typically consist of drawing elements such as lines, arcs, shapes, text, and their attributes (line color, line width, line style). In this chapter BCAD presents a   brief overview of the characteristics of presentation graphics and the   philosophy used to standardize them.

3.1.1. Line Widths

Although *monowidth* line work is not contractually improper, varied line widths substantially improve readability. Most commercial CAD systems   provide an extensive variety of line widths. However, for the majority of BCAD drawings, the eight line widths defined in **Table 3.1** are considered   sufficient and should not be expanded unless an appreciable improvement   in drawing clarity or contrast can be realized. **Table 3.1** lists information about the various allowed line widths.

Table 3.1 Comparison of line widths

Line Thickness	mm	In.	Typical Use
Fine	0.18	0.007	Patterning and material indications
Thin	0.25	0.010	Dimension lines, leaders, extension lines, break lines, grid lines, schedule grid lines, hidden objects, center lines, setback lines
Medium	0.35	0.014	Object lines, text, property lines, terminator marks, schedule grid accent lines
Wide	0.50	0.020	Major object lines, cut lines, section cutting plane lines, property lines, drawing block borders, titles
Extra wide	0.70	0.028	Minor title underlining, footprints, match lines, schedule outlines, sheet borders, large titles, object lines requiring special emphasis
XX Wide	1.00	0.040	Major title underlining and separating portions of drawings
XXX Wide	1.40	0.055	Border sheet outlines and cover sheet line work
XXXX Wide	2.00	0.079	Border sheet outlines and cover sheet line work

Source: A/E/C CAD Standard Release 6.0, Change 2, Page 26

Note: As per the National CAD Standard (NCS), there is an Extra Fine (0.13 mm) line width. However, BCAD is aware that the legibility on printouts becomes more difficult when the line width goes below the Fine (0.18 mm) line width. For this reason, use of Extra Fine line

widths should be avoided if the drawing will be plotted half-size, consistent with the NCS guidance.

3.1.2. Linetypes/ Styles

The predominant standard line types used by BCAD in this document are shown in **Figure 3.1** and are available as line types for AutoCAD. Additional custom line style (.LIN) files for AutoCAD are available on the BCAD's website.

Figure 3.1. Predominant line types/styles.
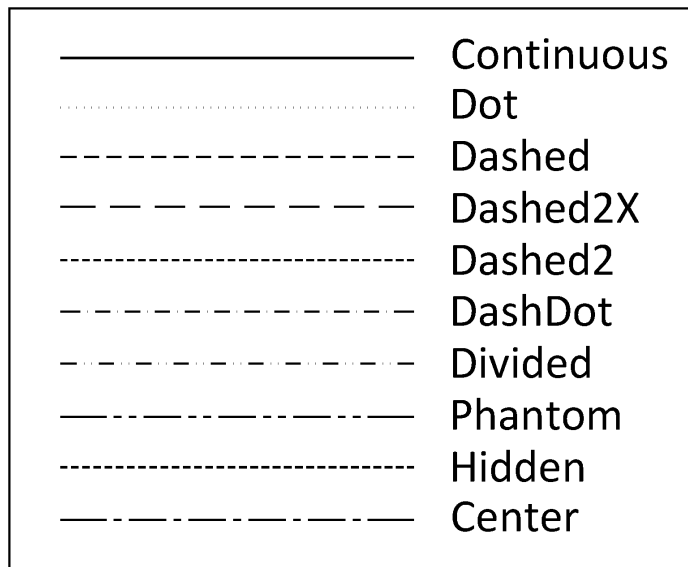
3.1.3. Line Color

The primary reason to use color in CAD drawings is to improve the clarity of the drawing on a computer monitor. Combining AutoCAD colors as well as using   RGB values color numbers will allow for a more extensive representation of colors. Table **3-2** lists the basic colors used predominantly throughout the model files. Additionally, the layer color standard has been redefined to reflect industry field marking color standards where applicable.

Table 3-2. Basic colors.

Color	AutoCAD	RGB Values
	Red	Green
Red	1	255,0,0
Yellow	2	255,255,0
Green	3	0,255,0
Cyan	4	0,255,255

Blue	5	0,0,255
Magenta	6	255,0,255
White	7	255,255,255
Gray	8	128,128,128

Note: Use color "White" for all colors set to 255,255,255 to enable white/black color switching based on background color.

3.1.4. Plotting

This document helps standardize presentation graphics as they relate to electronic drawing files (screen display), making the plotting standards below necessary to consistently translate electronic presentation graphic elements into paper. By employing pen tables, each consultant and BCAD department can ensure that consistent drawings are produced from an electronic file regardless of the type of printer or plotter used. It is the responsibility of the project manager to make sure these pen tables are distributed to all consultants involved in the project and at the same time the consultant is responsible for the distribution and use of the pen setting throughout the life of the project.

All drawings generated by either BCAD or its consultants will utilize one of two standard color table. These Color tables will be called *BCADMonochrome.ctb* and *BCADColor.ctb* respectively. These files will be located on BCAD's website, and will be available to all BCAD Consultants. The Properties of these tables are shown in **Tables 3.1.4.1 and 3.1.4.2**, shown below. The properties for all colors in general should be set to: "use default lineweight" (WYSIWYG).

Table 3.1.4.1 - _BCADMonochrome.CTB

AUTOCAD COLOR NO.	PLOTTED COLOR	PLOTTED LINEWEIGHT
1	Black	0.13 mm
2	Black	0.35 mm
3	Black	0.25 mm
4	Black	0.45 mm
5	Black	0.18 mm
6	Black	Use object Lineweight
7	Black	0.25 mm
8	Object Color	0.13 mm
9	Object Color	Use object Lineweight
10-76	Black	Use object Lineweight
77	Black	0.18 mm

78-243	Black	Use object Lineweight
244	Black	0.70 mm
245-248	Black	Use object Lineweight
249	Black	Use object Lineweight
250	Object Color	Use object Lineweight
251	Object Color	0.13 mm
252	Object Color	0.13 mm
253	Object Color	0.15 mm
254	Object Color	Use object Lineweight
255	Object Color	Use object Lineweight

Source: _BCADMonochrome-V2.0.ctb

Table 3.1.4.2 - _BCADColor.CTB

AUTOCAD COLOR NO.	PLOTTED COLOR	PLOTTED LINEWEIGHT
1	Black	0.13 mm
2	Black	0.35 mm
3	Black	0.25 mm
4	Black	0.45 mm
5	Black	0.18 mm
6	Black	Use object Lineweight
7	Black	0.25 mm
8	Object Color	0.13 mm
9	Object Color	Use object Lineweight
10-76	Object Color	Use object Lineweight
77	Object Color	0.18 mm
78-243	Object Color	Use object Lineweight
244	Object Color	0.70 mm
245-248	Object Color	Use object Lineweight
249	Object Color	Use object Lineweight
250	Object Color	Use object Lineweight
251	Object Color	0.13 mm
252	Object Color	0.13 mm
253	Object Color	0.15 mm
254	Object Color	Use object Lineweight
255	Object Color	Use object Lineweight

Source: _BCADColor-V2.0.ctb

No changes to the standard color table will be allowed without prior authorization of the BCAD designated CAD/GIS Manager.

3.2.   Text

All text used in drawings shall use the **TrueType font ARIAL**. Additional fonts may be used if approved in writing by BCAD's Project Manager at the beginning of the project.

3.2.1. Text Style

Different styles of text fonts shall be used within a drawing to delineate types of information. This text shall be capitalized, to allow readability to be retained when reproduced at one-half size.

- **Regular font** is to be used for most general notes, labels, dimensions, or title blocks.
- **Italic font** is to be used where text needs to be easily distinguished from other text.
- **Filled fonts** are to be used primarily for titles and on cover sheets.
- **Symbol font** should be used in cases where Greek symbols are used to represent technical information.

Table 3.2.1 – Comparison of font types

Font Type	TrueType
Regular	Arial ABCDEFGHIJKLMNOPQRST UVWXYZ
Italic	Arial (Italic) *ABCDEFGHIJKLMNOPQRST UVWXYZ*
Filled	Arial (Bold) **ABCDEFGHIJKLMNOPQRST UVWXYZ**
Symbol	Arial (Symbols) ΑΒΧΔΕΦΓΗΙϑΚΛΜΝΟΠΘΡΣΤ ΥςΩΞΨΖ αβχδεφγηιφκλμνοπθρστ υϖωξψζ

Source: ERDC/ITL TR-12-1; Release 2.0, Page 45

When it comes to text orientation text shall be set parallel to the primary base of the drawing. If necessary, text can be rotated at angles up to 180 degrees as long as the orientation is as shown in **Figure 3.2.1**, and keeping in mind that all text shall be oriented to be read from bottom to top or from left to right as displayed within the final plotted viewport.

Figure 3.2.1. Text Orientation
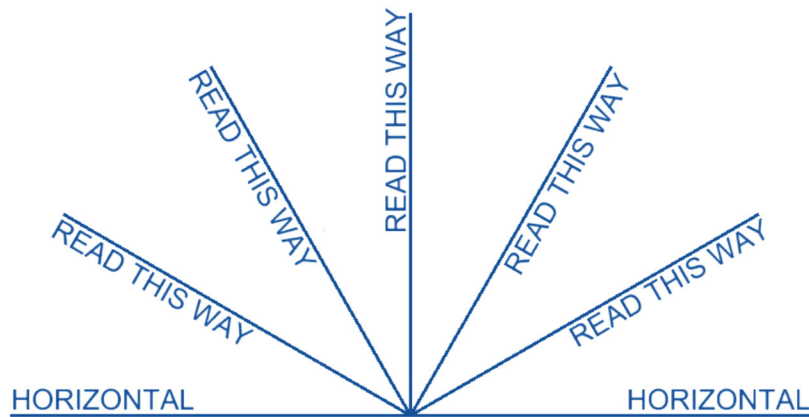
In addition, it is important to keep in mind:
- Text shall never be placed over other text.
- Text shall not be placed over feature lines, hatching, or patterning. In case text is unreadable due to the background where is placed, text shall be masked, by turning "Background Mask" for the text properties on, so the text can be clearly read.
- Text justification depends upon the type of text being placed. For example, general numbered notes shall have upper-left justification, elevation labels appearing to the left of a feature shall have bottom-right justification, and elevation labels appearing to the right of a feature shall have bottom-left justification.
- All text shall be Multiline Text (MTEXT)

3.2.2. Text Height

The text height shall conform with the information described in this section. The table below (**Table 3.2.2**) shows the text heights and line type scale that should be used for those particular scales, on all drawings and across all disciplines, to ensure uniformity of contract documents and final CAD deliverables.

Other important additional information about text sizes:
- The minimum text height for dimensions, notes, callouts, table/schedule text, and general text in plotted CAD files is 3/32 in. (2.4 mm).
- Title and subtitles shall be plotted equivalent to 3/16 in. (5 mm) and 1/8 in. (3 mm) lettering size, respectively.
- The text height and text width shall be assigned equal number values.
- Line spacing shall be equal to one-half of the text height.

Table 3.2.2 – Text heights and line type scales

Text heights and line type scales	TextHeight	LineType Scale
12" = 1'-0" or Full Size	3/32"	1
6" = 1'-0"	3/16"	2
3" = 1'-0"	3/8"	4
1-1/2" = 1'-0"	¾"	8
1" = 1'-0"	1.125"	12
3/4" = 1'-0"	1.5"	16
1/2" = 1'-0"	2.25"	24
3/8" = 1'-0"	3"	32
1/4" = 1'-0"	4.5"	48
3/16" = 1'-0"	6"	64
1/8" = 1'-0"	9"	96
3/32" = 1'-0"	12"	128
1/16" = 1'-0"	18"	192
1/32" = 1'-0"	36"	384
1" = 5'	5.625"	60
1" = 10'	11.25"	120
1" = 20'	1.875'	240
1" = 30'	2.8125'	360
1" = 40'	3.75'	480
1" = 50'	4.6875'	600
1" = 60'	5.625'	720
1" = 100'	9.375'	1200
1" = 200'	18.75'	2400
1" = 400'	37.5'	4800
1" = 500'	46.875'	6000
1" = 1000'	93.75'	12000
1" = 2000'	187.5'	24000

Source: ERDC/ITL TR-12-1; Release 2.0, Page 46

CHAPTER 4   LAYER ASSIGNMENTS

AutoCAD layers shall be used to separate graphic elements (lines, shapes, text) according to the design discipline they represent. The layers defined within this standard are based on the recommendations set forth in the Nation CAD Standard.

4.1.   Layer Name Format

The layers defined within this standard are compliant with National CAD Standard (NCS) and are specified to meet BCAD's specific needs.   The name of each layer is composed of up to five elements. First is a single-character Discipline Designator, followed by a four-character Major Group, and then a four-character Minor Group. For further differentiation, an additional four-character Minor Group may be used. A single-character status designator is also added at the end of every layer name.
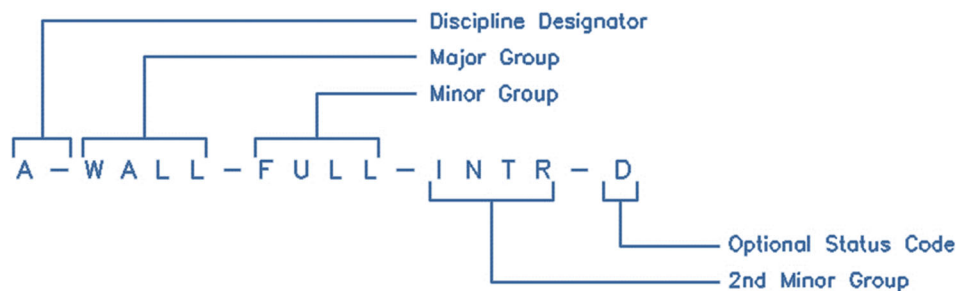
A list of acceptable layer names can be found in Chapter 7, section 7.2.This table includes a description of what layer should be used for each feature in the drawings.

If a consultant wishes to use a layer name that is not listed in section 7.2, they can submit a Request for Variance as previously discussed in section 1.9 . The consultant should indicate the new layer name and description on the form. The newly created layer must follow the layer name format described above. In cases a group requires less the four characters, a "~" shall be used to make all groups four characters (e.g., GAS~).

4.1.1. Discipline Designator

The Discipline Designator denotes the design discipline responsible for the feature. For the purposes of this standard, this will be a single-character field.

G - General	L - Landscape	P - Plumbing	B - Geotechnical
H - Hazardous Materials	S - Structural	M - Mechanical	I - Interiors
V - Survey	A - Architectural	E - Electrical	
C - Civil	F -Fire Protection	T - Telecommunication	

The V- discipline designator should only be used by a survey consultant when creating a specific survey such as a boundary, topographic, sketch and description or other survey standalone file that will be signed and sealed. If a survey is converted to a base model file, the layers should be converted to the proper Discipline Designator with a Status code of '-E' at the end. Example:

V-STRM-MHOL-E ← Existing Storm Manhole in a Survey File

C-STRM-MHOL-E ← Existing Storm Manhole in a Base Civil Model File

4.1.2. Major and Minor Groups

The major group is a four-character field that identifies the primary description of the feature. This helps group and organize the layers in the AutoCAD layer manager to quickly find all associated layers with a feature type.

The minor groups are four-character fields that further define what the feature is. These groups help users better isolate and control the style of each feature.

4.1.3. Status

The status field is a single-character field that distinguishes the data contained on the layer according to the status of the work. The prescribed field codes for this field are as follows:

A - Abandoned	F - Future work
D - Existing to demolish	M - Items to be moved
E - Existing to remain	N - New work
T - Temporary work	

Work that is intended to be completed as a part of the project for which the drawings are being developed is classified as 'N' for new work. 'F' – Future Work shall be used to show something that will happen in the future but not under the current design.

4.2.   Object Data

In AutoCAD Map 3D and Civil software, attributes can be stored in Object Data tables that are associated and attached to each object in the drawing. In this way, CAD Vector data becomes smart data similar to and compatible with GIS in that features are associated with attributes that are stored within a data structure that can be read by humans and computers. This provides a means of exchanging GIS and CAD data using GIS, CAD, or Extract, Transform & Load (ETL) software.

BCAD's Object Data Tables are already part of the organization CAD Standard Template files and is required that these Object Data Tables will be populated as part of the As-Built Documents

submittal. These Object Data Tables correspond with the information required on the GIS side, which will facilitate the extraction and crosswalk of the data from CAD to GIS.

It is important to keep in mind that Object Data can be linked automatically to an external database table If information in your drawing, such as object data, text, or block attribute data, matches information in a database table, you can automatically create links from each selected object to a matching record in the external database records and/or documents from other applications. The attribute data that is attached to individual objects and stored in tables in the drawing contains text and numerical information related to an object. One or more drawing objects in a given drawing can be associated with an object data table.

Since the Object Data Tables are already provided by BCAD's CAD Standard Template files, it will only be required to attached the data to objects as well as populate it. There are few initial settings to keep in mind before you start the process:

4.2.1. File Preparation

Turn off all layers except the one containing the object(s) you want to attach a table to. For example, turn on parcel_lines to attach Object Data table parcel_data. Be sure the following Autodesk environment variables are set:
- ATTDIA = 1
- FILEDIA = 1
- CMDDIA = 1

If these values are not set, dialog boxes illustrated later in the document will not appear. To set these values, key-in the variable (e.g. FILEDIA) in the command window. You will be prompted for a new value as below:

Enter new value for FILEDIA <1> If it is already set to 1 press Enter. If not, key-in 1 and press Enter.

4.2.2. Attaching Data to Object(s)

To attach data to an object:
- Click Create tab ➤ Drawing Object panel ➤ Attach/Detach Object Data.
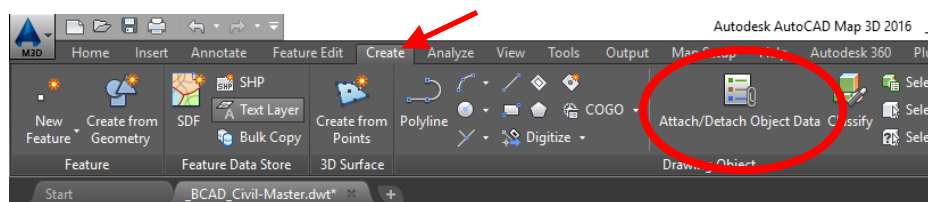
- In the Attach/Detach Object Data dialog box, select a table.
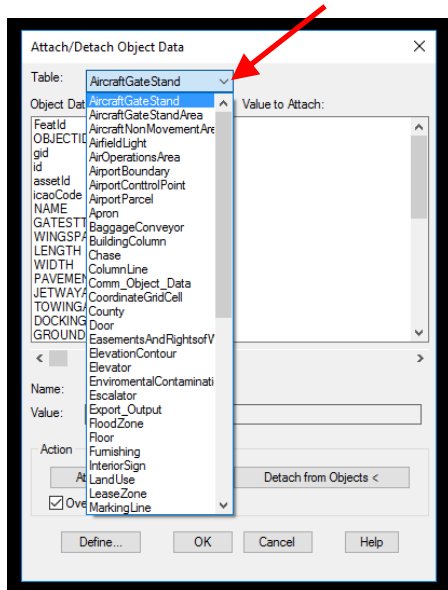
- Click Attach to Objects.
- Select the objects.

For more information on ways to attach data to Blocks already existing in the provided drawing template please refer to the Autodesk Knowledge Network on the "Learn and Explore" section under "Object Data":
https://knowledge.autodesk.com/support/autocad-map-3d/learn-explore/caas/CloudHelp/cloudhelp/2016/ENU/MAP3D-Use/files/GUID-84FF4182-DD75-40F1-8B2A-1AF58A71DCBF-htm.html

CHAPTER 5   STANDARD SYMBOLOGY

5.1   Introduction

BCAD's symbology contains four types of elements, which could be find embedded in the standard template files (dwt): Lines, Patterns, Symbols, and Objects. The use of such symbology enhances CAD productivity and provides the standardization of BCAD CAD deliverables.

5.2   Symbology resources

5.2.1 Blocks

A block in AutoCAD is a group of graphical elements that can be manipulated as a single entity. Examples of typical blocks are windows, doors, graphic scale keys, furniture, etc. At the same time, symbols   are defined as blocks that are representative of objects (e.g., electrical outlets, smoke detectors). Objects are defined as blocks that are   placed at the actual size of the item they are representing no matter the scale of the drawing (e.g., 30 in. by 50 in. desk, 3 ft-0 in. door). Because A/E/C Standards is the source of BCAD Standards, the symbology utilized as part of BCAD deliverables is taken directly from this document, allowing the following files to be provided:

- AutoCAD blocks embedded on each CAD template file (.dwt). These blocks can also be accessed as part of BCAD electronic documents on BCAD's website under ***symbols_AECR5.zip***. As a note, blocks are best inserted by selecting them from Design Center.

5.2.2 Line styles

Lines are defined as a graphical representation of linear drawing features (e.g., utility lines, fence lines, contours). Patterns are defined as repeated drawing elements (e.g., lines, dots, circles) within a defined area. There are a series of Line style definitions contained in A/E/C Standards, which BCAD has adopted as part of the organization's Standards. The following are the files to be provided:

- Line Styles are embedded on each CAD template file (.dwt). These can be also accessed as part of BCAD electronic documents on BCAD's website

under ***acad_lines_AECR5.zip.***

CHAPTER 6   CHECKING THE QUALITY OF CAD DATA

An important objective of BCAD CAD Standard Document is to help create the most accurate and graphically consistent set of CAD drawings for the BCAD organization. To ensure the quality of this data, individuals responsible for developing CAD drawings should check their work as it is completed (i.e. Quality Control). Before drawings are submitted to BCAD, they should be checked to confirm that they comply with this standard, as well as any FAA or other requirements identified in the project scope of work (i.e Quality Assurance). BCAD, may also check drawings, to confirm that they meet these requirements before accepting them (i.e. acceptance testing).

The following table defines a series of checks that can be applied during quality control, quality assurance, and acceptance testing to help ensure that drawings delivered to, maintained form or used by BCAD are of the quality required.

Table 6 – QA & QC Checklist

COMPLETE	TOPIC
	1. General
	- Check Drawing Title (against List of drawings)
	- Check Drawing Scale and date
	- Check standard sheet numbering
	- Check revision format
	2. Documentation
	- Check the list of deliverables
	3. Project check list
	- Check graphic consistency
	- Check readability
	- Check Standards symbols
	- Check design correctness/problems, build-ability
	- Check spelling
	- Check Line weights, Line types
	- Check Dimensions and style
	4. Data check list
	- Check data in correct layer
	- Check XREF in correct layer
	- Check annotations, dimension & notes in correct layer
	- Check legend, north arrow and scale bars in correct layer
	- Check for extra information to be deleted, file to be purged
	5. Data Structure check list
	- Check Relevant Data
	- Check if correctly named and or naming convention
	6. Attribute check list
	- Check Label is from an attribute

COMPLETE	TOPIC
	- Check the attribute symbolize use a domain or block reference
	7. Relationship/coordination check list with other services
	- Check coordination with Civil
	- Check coordination with Architectural
	- Check coordination with Mechanical
	- Check coordination with Structural
	- Check coordination with Plumbing
	- Check coordination with Interiors
	- Check coordination with Electrical
	- Check coordination with Telecommunications
	- Check coordination with Fire Protection
	- Check coordination with Landscape
	- Check coordination with other
	8. Annotation check list
	- Check visibility and placement of annotation
	- Check overlap and masking
	- Check Consistent size and style
	9. AutoCAD check list
	- Check AutoCAD Layers
	- Check AutoCAD Blocks
	- Check AutoCAD Viewports
	- Check Layout Tabs against List of drawings
	- Check AutoCAD Xref (Overlay/attach, relative path, etc..)
	- Check AutoCAD Drawing Origin (georeferenced file)
	10. References
	- Check Standard Details
	- Check General Notes
	- Check Abbreviations

Note: As a common AutoCad best practice, consultant shall make sure all final drawing files have " Zoom Extents" performed, and purged before preforming E-transmit procedures. This will eliminate any extra information not used in the drawing.

CHAPTER 7   APPENDICES

7.1.   Request for Variance

PROPOSED BASEMAP CHANGE REQUEST

Date:
From:

Requestor	
Company/Department	
Phone	

To: **Broward County Aviation Department**
Attention: **Planning Division**

BCAD CAD Standard:

File Name Old		File Path	
File Name New		File Path	

Justification for Change:

Existing Provisions are:

	Incomplete		Inaccurate		Redundant
	Conflicting		Obsolete		Other

Staff Name/ Title		Date	
Disapproved		Approved	
Reason for Disapproval			

Detailed Justification:

Description of Change:

Reviewed by:

CAD Manager		Date	
Disapproved		Approved	
Reason for Disapproval		

7.2. Layer Assignment

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
General				
General Information				
G-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension tex	Continuous	0.35	7
G-ANNO-KEYN	Reference keynotes with associated leaders	Continuous	0.35	7
G-ANNO-LEGN	Legends and symbol keys	Continuous	0.35	7
G-ANNO-MASK	Text/shape mask for use with photo backgrounds	Continuous	0.18	115
G-ANNO-MATC	Match lines	CENTER	0.70	1
G-ANNO-NOTE	General notes and general remarks	Continuous	0.35	1
G-ANNO-NPLT	Non-plotting graphic information	Continuous	0.18	7
G-ANNO-PATT	Patterning, shading, and hatching	Continuous	0.18	252
G-ANNO-RDME	Read-me information	Continuous	0.18	7
G-ANNO-REDL	Redlines	Continuous	0.18	7
G-ANNO-REFR	Reference files and raster attachments	Continuous	0.35	7
G-ANNO-REVC	Revision clouds	Continuous	0.35	77
G-ANNO-REVS	Revision indicators and tex	Continuous	0.35	77
G-ANNO-SCHD	Schedules	Continuous	0.35	7
G-ANNO-SYMB	Miscellaneous symbols	Continuous	0.35	1
G-ANNO-TEXT	Miscellaneous text	Continuous	0.35	7
G-ANNO-TTLB	Border and titleblock linework	Continuous	0.35	7
G-ANNO-TTLB-GRID	Grid lines inside border	CENTERX2	0.18	7
Grid Lines				
G-GRID-COOR	X-Y coordinate grid lines	Continuous	0.25	7
G-GRID-COOR-IDEN	X-Y coordinate grid lines annotation	Continuous	0.25	7
G-GRID-EXTR	Column grid outside building	CENTER	0.18	7
G-GRID-IDEN	Column grid tags	Continuous	0.25	7
Floor Information				
G-PLAN-OTLN	Floor outline/perimeter/building footprint	Continuous	0.35	1
Coordinate Information				
G-COOR-LALO	Latitude/longitude coordinate grid ticks	Continuous	0.25	1
G-COOR-LALO-IDEN	Latitude/longitude coordinate text	Continuous	0.25	1
G-COOR-STAT	State plane coordinate grid ticks	DASHEDX2	0.25	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
G-COOR-STAT-IDEN	State plane coordinate text	Continuous	0.25	1
Site Information				
G-SITE-OTLN	Site plan - key map	Continuous	0.35	1
Demolition	**(Additional demolition phases may be added as needed)**			
G-DEMO-PHS1	Items to be demolished	DEMO	0.50	82
Hazardous Materials				
Abatement				
H-ABAT-BARR	Tape barrier	Continuous	0.50	1
H-ABAT-BARR-STRC	Critical structural barriers	Continuous	0.35	7
H-ABAT-POLY	Polyethylene sheeting	DASHED	0.50	70
Buildings				
H-BLDG-IDEN	Annotation	Continuous	0.35	1
H-BLDG-OTLN	Command posts, information centers	Continuous	0.35	1
Decontamination				
H-DECN-EQPM	Decontamination equipment	Continuous	0.25	7
H-DECN-IDEN	Annotation	Continuous	0.35	1
Disposal Areas				
H-DISP-HAZW	Hazardous waste	Continuous	0.18	7
H-DISP-IDEN	Annotation	Continuous	0.35	1
H-DISP-MUNT	Munitions	Continuous	0.18	7
H-DISP-TANK	Spill containment tanks	Continuous	0.35	1
Emergency Fixtures				
H-FIXT-EYEW	Emergency eyewashes	Continuous	0.25	70
H-FIXT-SHWR	Emergency showers	Continuous	0.25	70
Monitoring Stations				
H-MNST-AIRQ	Air quality	Continuous	0.25	70
H-MNST-GWTR	Ground water	Continuous	0.25	70
H-MNST-IDEN	Annotation	Continuous	0.25	70
H-MNST-LAND	Landfill gas	Continuous	0.25	70
H-MNST-SOIL	Soil gas	Continuous	0.25	70
H-MNST-SWTR	Surface water	Continuous	0.25	70
Pollution Areas				
H-POLL-CONC	Polluted area of concern	Continuous	0.35	1
H-POLL-IDEN	Annotation	Continuous	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
H-POLL-ORIG	Point of pollution origin	Continuous	0.35	1
H-POLL-POTN	Potential spill, emission, or release source	Continuous	0.35	1
Sample Points				
H-SAMP-AIRS	Air samples	Continuous	0.25	7
H-SAMP-BIOL	Biological samples	Continuous	0.25	7
H-SAMP-BLDG	Building material samples (e.g., asbestos, lead, PCBs, etc.	Continuous	0.25	7
H-SAMP-GWTR	Ground water samples	Continuous	0.25	7
H-SAMP-IDEN	Annotation	Continuous	0.25	7
H-SAMP-MAGN	Magnetometer location points	Continuous	0.25	7
H-SAMP-SEDI	Sediment samples	Continuous	0.25	7
H-SAMP-SOIL	Soil samples	Continuous	0.25	7
H-SAMP-SOLI	Solid material samples	Continuous	0.25	7
H-SAMP-SWTR	Surface water samples	Continuous	0.25	7
H-SAMP-WAST	Waste samples	Continuous	0.25	7
Storage Facilities				
H-STOR-HAZM	Hazardous materials	Continuous	0.35	1
H-STOR-HAZW	Hazardous waste	Continuous	0.35	1
H-STOR-IDEN	Annotation	Continuous	0.35	1
Wells				
H-WELL-INJN	Injection well	Continuous	0.25	7
H-WELL-XTRA	Extraction well	Continuous	0.25	7
Sections				
H-SECT-IDEN	Component identification numbers	Continuous	0.35	1
H-SECT-MBND	Material beyond section cut	Continuous	0.18	7
H-SECT-MCUT	Material cut by section	Continuous	0.50	77
H-SECT-PATT	Textures and hatch patterns	Continuous	0.18	252
Detail Information				
H-DETL-GRPH	Graphics, gridlines, non-text items	Continuous	0.35	7
Survey/ Mapping				
Aerial Survey				
V-AERI-BNDY	Aerial photography boundaries	Continuous	0.35	1
V-AERI-BNDY-NEAT	Neat model boundary	Continuous	0.35	1
V-AERI-FLYS	Fly station	Continuous	0.35	1
V-AERI-IDEN	Aerial annotation	Continuous	0.35	1
V-AERI-INDX	Aerial photo index	Continuous	0.70	7

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
V-AERI-PATH	Aerial flight lines/paths	DASHDOT	0.35	14
V-AERI-PHOT	Photo center (exposure station)	Continuous	0.35	14
V-AERI-PNPT	Panel points	Continuous	0.35	1
Airfields				
V-AFLD-CIRC-CTRL	Control and monitoring circuits	Continuous	0.35	205
V-AFLD-CIRC-IDEN	Circuit identifier tags, symbol modifier, and text	Continuous	0.25	1
V-AFLD-CIRC-MULT	Multiple circuits	Continuous	0.35	205
V-AFLD-CIRC-SERS	Series circuits	Continuous	0.35	205
V-AFLD-DEVC	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	Continuous	0.35	205
V-AFLD-DBNK	Ductbanks	DASHED2	0.25	205
V-AFLD-IDEN	Airfield annotation	Continuous	0.35	1
V-AFLD-JBOX	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	Continuous	0.35	205
V-AFLD-LITE-APPR	Approach lights	Continuous	0.35	205
V-AFLD-LITE-DIST	Distance and arresting gear markers	Continuous	0.35	205
V-AFLD-LITE-LANE	Hoverlane, taxilane, and helipad lights	Continuous	0.35	205
V-AFLD-LITE-OBST	Obstruction lights	Continuous	0.35	205
V-AFLD-LITE-RUNW	Runway lights	Continuous	0.35	205
V-AFLD-LITE-SIGN	Taxiway guidance signs	Continuous	0.35	205
V-AFLD-LITE-TAXI	Taxiway lights	Continuous	0.35	205
V-AFLD-LITE-THRS	Threshold lights	Continuous	0.35	205
V-AFLD-VALT	Airfield lighting vaults	Continuous	0.35	205
Alignments				
V-ALGN-DATA	Alignment coordinates and curve data	Continuous	0.25	70
V-ALGN-LINE	Alignments	DASHDOT	0.25	1
V-ALGN-MAJR	Alignment major stationing and tick marks	Continuous	0.25	7
V-ALGN-MARK	Alignment tick marks	Continuous	0.25	70
V-ALGN-MINR	Alignment minor stationing and tick marks	Continuous	0.18	1
V-ALGN-STAT	Alignment stationing	Continuous	0.25	70
V-ALGN-SYMB	Alignment symbols (PIs)	Continuous	0.25	1
V-ALGN-TEXT	Alignment text, annotation with associated leaders	Continuous	0.25	1
Aprons				
V-APRN-CNTR	Apron centerlines	CENTER	0.18	7
V-APRN-CNTR-IDEN	Apron centerline annotation	Continuous	0.25	1
V-APRN-GRND	Grounding points	Continuous	0.25	1
V-APRN-HOLD	Holding position markings	Continuous	0.18	7
V-APRN-IDEN	Airfield apron - annotation	Continuous	0.25	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
V-APRN-MOOR	Mooring points	Continuous	0.25	1
V-APRN-MRKG	Apron markings	Continuous	0.35	77
V-APRN-OTLN	Airfield apron - outlines	Continuous	0.35	77
V-APRN-SECU	Security zone markings	Continuous	0.18	7
V-APRN-SHLD	Shoulders with annotation	Continuous	0.25	1
V-APRN-SHLD-MRKG	Shoulder stripes	Continuous	0.25	1
Beacons				
V-BCNS-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.25	1
V-BCNS-MISC	Miscellaneous navaids - windcones and beacons	Continuous	0.35	205
V-BCNS-STRB	Strobe beacons	Continuous	0.35	205
Beach Renourishment				
V-BECH-BANK-TOP~	Beach top of bank	Continuous	0.18	1
V-BECH-BKLN	Beach breakline	DASHED	0.25	7
V-BECH-BNCH	Beach bench	DIVIDE	0.25	14
V-BECH-CNTR	Beach centerline	CENTER	0.18	7
V-BECH-LIMT	Beach limit lines	Continuous	0.35	77
V-BECH-OHWM	Ordinary high water marks	Continuous	0.25	1
V-BECH-OTLN	Beach outline	Continuous	0.18	1
V-BECH-SLOP-IDEN	Beach slope indicator with annotation	Continuous	0.18	7
V-BECH-SLOP-TOP~	Beach top of slope	DASHED	0.25	14
V-BECH-SYMB	Beach symbols	Continuous	0.18	1
V-BECH-TOE~	Beach toe	DASHEDX2	0.35	7
V-BECH-TOE~-IDEN	Beach toe annotation	Continuous	0.18	7
Buildings and Primary Structures				
V-BLDG-DECK	Outdoor decks (attached, no roof overhead)	Continuous	0.35	77
V-BLDG-DOCK	Loading docks	Continuous	0.35	77
V-BLDG-FTPT	Building footprints	Continuous	0.50	7
V-BLDG-IDEN	Building and other stucture annotation	Continuous	0.25	1
V-BLDG-OVHD	Building overhangs	Continuous	0.35	0,000,077
V-BLDG-PRCH	Porches (attached, roof overhead)	Continuous	0.35	0,000,077
Borings				
V-BORE-GENL-LOCN	General boring X,Y location marker	Continuous	0.35	1
V-BORE-GENL-NAME	General boring name	Continuous	0.35	1
V-BORE-GENL-NOTE	General boring notes	Continuous	0.35	1
V-BORE-GPRO-LOCN	GeoProbe X,Y location marker	Continuous	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
V-BORE-GPRO-NAME	GeoProbe boring name	Continuous	0.35	1
V-BORE-GPRO-NOTE	GeoProbe boring notes	Continuous	0.35	1
V-BORE-UNDS-LOCN	Undisturbed boring X,Y location marker	Continuous	0.35	1
V-BORE-UNDS-NAME	Undisturbed boring name	Continuous	0.35	1
V-BORE-UNDS-NOTE	Undisturbed boring notes	Continuous	0.35	1
V-BORE-VCOR-LOCN	Vibra-Core X,Y location marker	Continuous	0.35	1
V-BORE-VCOR-NAME	Vibra-Core name	Continuous	0.35	1
V-BORE-VCOR-NOTE	Vibra-Core notes	Continuous	0.35	1
Borrow Areas				
V-BORW-IDEN	Borrow/spoil area annotation	Continuous	0.25	1
V-BORW-LINE	Borrow/spoil area	DASHED	0.25	1
Bridges				
V-BRDG-CHRD-LOW~	Low chord	Continuous	0.35	77
V-BRDG-CNTR	Bridge centerlines	CENTER	0.18	7
V-BRDG-CTLJ	Control joints	Continuous	0.18	77
V-BRDG-DECK	Bridge deck	Continuous	0.35	77
V-BRDG-IDEN	Bridge annotation	Continuous	0.25	1
V-BRDG-OTLN	Bridge outlines	Continuous	0.35	77
V-BRDG-RLG~	Bridge railing	Continuous	0.18	77
Cathodic Protection System				
V-CATH-ANOD	Sacrificial anode system	Continuous	0.35	252
V-CATH-CURR	Impress current system	Continuous	0.35	252
V-CATH-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.25	1
V-CATH-TEST	Test stations	Continuous	0.35	252
Channels				
V-CHAN-BANK-IDEN	Channel/canal top of bank annotation	Continuous	0.25	1
V-CHAN-BANK-TOP~	Channel/canal top of bank	Continuous	0.25	1
V-CHAN-BNCH	Channel/canal bench design feature lines (breaklines form DTMs)	Continuous	0.25	1
V-CHAN-BWTR	Breakwaters	Continuous	0.25	1
V-CHAN-CNTR	Channel centerline and survey report lines	CENTER	0.18	7
V-CHAN-CNTR-IDEN	Channel centerline and survey report lines - annotation	Continuous	0.25	7
V-CHAN-DACL	De-authorized channel limits, anchorages, etc.	Continuous	0.25	70
V-CHAN-DACL-IDEN	De-authorized channel limits, anchorages, etc. - annotation	Continuous	0.25	70

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
V-CHAN-DOCK	Docks, decks, floats, piers, and mooring facilities	Continuous	0.25	1
V-CHAN-LIMT	Channel limits, anchorages, turning basins, disposal areas, etc.	Continuous	0.25	1
V-CHAN-LIMT-IDEN	Channel limits, anchorages, turning basins, disposal areas, etc. - annotation	Continuous	0.25	1
V-CHAN-AIDS	Navigation aids and text	Continuous	0.25	1
V-CHAN-SLOP-LINE	Channel cut/fill slope (Indicates cut and fill lines)	Continuous	0.25	1
V-CHAN-SPOL	Spoil limits	Continuous	0.35	77
V-CHAN-SYMB	Channel/canal symbols	Continuous	0.25	1
V-CHAN-TEXT	Channel/canal text, annotation with associated leaders	Continuous	0.25	1
V-CHAN-TOE~	Channel/canal toe	DASHEDX2	0.35	7
V-CHAN-TOE~-IDEN	Channel/canal toe annotation	Continuous	0.25	1
V-CHAN-TURN	Turning points	Continuous	0.25	1
V-CHAN-WIDE	Channel/canal widener	DASHEDX2	0.35	77
Communications				
V-COMM-ANTN	Antennae	Continuous	0.35	1
V-COMM-EQPM	Other communications distribution equipment	Continuous	0.35	1
V-COMM-JBOX	Communication junction boxes, pull boxes, handholes, pedestals, and splices	Continuous	0.35	1
V-COMM-MHOL	Manholes	Continuous	0.35	1
V-COMM-OVHD	Overhead communications/telephone lines	COMARN	0.35	1
V-COMM-OVHD-IDEN	Identifier tags, symbol modifier and text	Continuous	0.25	1
V-COMM-POLE	Poles	Continuous	0.35	1
V-COMM-POLE-GUYS	Guying equipment	Continuous	0.35	1
V-COMM-POLE-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.25	1
V-COMM-UGND	Underground communications/telephone lines	COMUGN	0.35	1
V-COMM-UGND-IDEN	Identifier tags, symbol modifier and text	Continuous	0.25	1
Control Points				
V-CTRL-BMRK	Benchmarks	Continuous	0.35	1
V-CTRL-GRID	Grid	Continuous	0.25	70
V-CTRL-HORZ	Horizontal control points	Continuous	0.35	1
V-CTRL-HVPT	Horizontal/vertical control points	Continuous	0.35	1
V-CTRL-IDEN	Control point annotation	Continuous	0.35	1
V-CTRL-TRAV	Transverse points	Continuous	0.35	1
V-CTRL-VERT	Vertical control points	Continuous	0.35	1
Ditches or Washes				
V-DTCH-BOTM	Bottom of ditch or wash	DITCH	0.18	7
V-DTCH-CNTR	Centerline of ditch or wash	CENTER	0.18	7

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
V-DTCH-EWAT	Edge of water	Continuous	0.18	77
V-DTCH-IDEN	Ditches and washes annotation	Continuous	0.25	70
V-DTCH-TOP~	Top of ditch or wash	Continuous	0.18	70
Underground Ductbanks (to be used when multiple systems are in one ductbank system)				
V-DBNK-MULT	Ductbank	DASHED2	0.35	252
V-DBNK-MULT-IDEN	Identifier tags, symbol modifier and text	Continuous	0.25	1
Habitats/Landforms				
V-ECCO-BURR	Burrow	Continuous	0.35	77
V-ECCO-DENS	Den	Continuous	0.35	77
V-ECCO-GATR	Gator hole	DASHED	0.25	1
V-ECCO-HUMK	Hummocks	Continuous	0.25	1
V-ECCO-IDEN	Habitat annotation	Continuous	0.25	1
V-ECCO-NEST	Nest, nesting tree	Continuous	0.35	77
V-ECCO-PRCH	Perch/nesting hole	Continuous	0.35	77
Fire Protection				
V-FIRE-HYDT	Hydrants and connections	Continuous	0.25	7
V-FIRE-PIPE	Piping	FIRE	0.25	7
Flood Hazard Area				
V-FLHA-025Y	25 year mark	DIVIDE	0.25	1
V-FLHA-050Y	50 year mark	DASHEDX2	0.25	1
V-FLHA-100Y	100 year mark	Continuous	0.25	1
V-FLHA-200Y	200 year mark	DASHED	0.25	1
V-FLHA-500Y	500 year mark	CENTERX2	0.25	1
V-FLHA-IDEN	Flood hazard area annotation	Continuous	0.25	1
Floodwalls				
V-FLOD-BASE	Floodwall base of wall	Continuous	0.35	1
V-FLOD-BASE-IDEN	Floodwall base of wall annotation	Continuous	0.25	1
V-FLOD-CNTR	Floodwall centerline	CENTER	0.18	1
V-FLOD-CNTR-IDEN	Floodwall centerline annotation	Continuous	0.25	1
V-FLOD-DRNS	Floodwall toe drain	Continuous	0.25	1
V-FLOD-DRNS-IDEN	Floodwall toe drain annotation	Continuous	0.25	1
V-FLOD-PILE	Floodwall sheet piling	Continuous	0.35	14
V-FLOD-PILE-IDEN	Floodwall sheet piling annotation	Continuous	0.25	14
V-FLOD-TOE~	Floodwall toe outline	Continuous	0.25	0,000,077
V-FLOD-TOP~	Floodwall top of wall	Continuous	0.35	1
V-FLOD-TOP~-IDEN	Floodwall top of wall annotation	Continuous	0.25	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
Liquid Fuel				
V-FUEL-BERM	Berms for retaining fuel in case of major tank/line rupture	Continuous	0.25	1
V-FUEL-DEFL-PIPE	Defueling piping	Continuous	0.25	1
V-FUEL-DEVC	Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves	Continuous	0.25	1
V-FUEL-FLOW	Flow direction arrows	Continuous	0.25	1
V-FUEL-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.25	1
V-FUEL-JBOX	Junction boxes, manholes, handholes, test boxes	Continuous	0.25	1
V-HTCW-CWTR-PLNT	Chilled water plant	Continuous	0.25	7
V-HTCW-CWTR-SERV	Chilled water service piping	Continuous	0.18	7
V-HTCW-DEVC	Rigid anchors, anchor guides, rectifiers, reducers, markers, pumps, regulators, tanks, and valves	Continuous	0.25	1
V-HTCW-HWTR-MAIN	Main high temperature piping	Continuous	0.25	7
V-HTCW-HWTR-PLNT	High temperature water plant	Continuous	0.25	7
V-HTCW-HWTR-SERV	High temperature service piping	Continuous	0.18	7
V-HTCW-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.25	1
V-HTCW-JBOX	Junction boxes, manholes, handholes, test boxes	Continuous	0.18	1
V-HTCW-LWTR-MAIN	Main low temperature piping	Continuous	0.25	1
V-HTCW-LWTR-SERV	Low temperature service piping	Continuous	0.18	1
V-HTCW-METR	Meters	Continuous	0.25	1
V-HTCW-RETN-PIPE	Return for all HTCW lines	Continuous	0.18	1
V-HTCW-STEM-MAIN	Main steam piping	Continuous	0.25	144
V-HTCW-STEM-SERV	Steam service piping	Continuous	0.18	144
V-HTCW-STNS-PUMP	Pump stations	Continuous	0.25	1
V-HTCW-VALT	Valve pits/vaults, steam pits	Continuous	0.18	1
Hydrosurveys				
V-HYDS-BKLN	Breaklines	DASHDOT	0.35	7
V-HYDS-BKLN-COMM	Subsurface utilities communications breakline	COMMUNICATION_LINE	0.35	7
V-HYDS-BKLN-DOMW	Subsurface utilities water breakline	WATER_LINE	0.35	7
V-HYDS-BKLN-ELEC	Subsurface utilities electric breakline	Electric_Line	0.35	7
V-HYDS-BKLN-FUEL	Subsurface utilities liquid fuel breakline	LIQPET	0.35	7
V-HYDS-BKLN-NGAS	Subsurface utilities natural gas breakline	GAS_LINE	0.35	7
V-HYDS-BKLN-SSWR	Subsurface utilities sanitary sewer breakline	SSWAF	0.35	7
V-HYDS-BKLN-STRM	Subsurface utilities storm sewer breakline	STRAF	0.35	7

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
V-HYDS-BNDY-EXTR	Surface exterior boundary	Continuous	0.18	70
V-HYDS-BNDY-INTR	Surface interior boundary	DASHED	0.18	7
V-HYDS-BORE	Boring locations and text	Continuous	0.25	1
V-HYDS-COOR	Coordinate grid text annotation	Continuous	0.25	124
V-HYDS-COOR-LALO	Latitude and longitude grid ticks	Continuous	0.18	70
V-HYDS-COOR-STAT	State Plane coordinate ticks	Continuous	0.18	70
V-HYDS-COOR-UTM~	UTM coordinate ticks	Continuous	0.18	70
V-FUEL-MAIN-PIPE	Main fuel piping	LIQPET	0.25	1
V-FUEL-METR	Meters	Continuous	0.25	1
V-FUEL-SERV-PIPE	Service piping	Continuous	0.25	1
V-FUEL-STNS-PUMP	Booster pump stations	Continuous	0.25	1
V-FUEL-TANK	Fuel tanks	Continuous	0.25	1
V-FUEL-TRCH	Fuel line trench	Continuous	0.25	1
V-FUEL-VALT	Hydrant control/vent/valve pits/vaults	Continuous	0.25	1
Grade Linework				
V-GRAD-AFTR	After dredge depth	Continuous	0.35	1
V-GRAD-EXST	Existing grade, ground line	DASHEDX2	0.35	1
V-GRAD-EXST-BASE	Base survey	DASHED	0.18	14
V-GRAD-EXST-SYR1	Survey year one or area one	DASHDOT	0.18	1
V-GRAD-EXST-SYR2	Survey year two or area two	DOT	0.18	1
V-GRAD-EXST-SYR3	Survey year three or area three	DIVIDE	0.18	70
V-GRAD-EXST-SYR4	Survey year four or area four	DASHEDX2	0.18	115
V-GRAD-IDEN	Grade annotation	Continuous	0.25	1
V-GRAD-PRED	Pre-dredge	Continuous	0.35	1
V-GRAD-SCLN	Stability control line	CENTERX2	0.35	7
Grid Lines				
V-GRID-FRAM	Frame	Continuous	0.35	77
V-GRID-MAJR	Major grid lines	DOT	0.25	252
V-GRID-MINR	Minor grid lines	DOT	0.18	252
V-GRID-TEXT	Border text, annotation	Continuous	0.25	1
Geothermal Heat Pump System				
V-GTHP-EQPM	Geothermal heat pump system equipment	Continuous	0.25	104
V-GTHP-IDEN	Geothermal heat pump annotation	Continuous	0.35	1
V-GTHP-RETN-PIPE	Geothermal heat pump system return piping	Continuous	0.35	104
V-GTHP-SUPP-PIPE	Geothermal heat pump system supply piping	Continuous	0.35	104

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
High Temperature/Chilled Water System				
V-HTCW-CWTR-MAIN	Main chilled water piping	Continuous	0.25	7
V-HYDS-DTMO	DTM obscure area boundary	Continuous	0.25	1
V-HYDS-DTMP	DTM points	Continuous	0.25	1
V-HYDS-DTMT	DTM triangles	Continuous	0.25	14
V-HYDS-MAJR	Major contours	Continuous	0.25	1
V-HYDS-MAJR-IDEN	Major contours - annotation	Continuous	0.25	1
V-HYDS-MINR	Minor contours	Continuous	0.18	70
V-HYDS-MINR-IDEN	Minor contours - annotation	Continuous	0.18	70
V-HYDS-PERI	Surface perimeter	Continuous	0.18	70
V-HYDS-SHAP	Inroads generated shapes/lines	Continuous	0.18	7
V-HYDS-SHOR	Shorelines, land features, and references	Continuous	0.25	77
V-HYDS-SLOP-FILL	Cut/fill slopes	Continuous	0.25	1
V-HYDS-SLOP-IDEN	Cut/fill slope, top/toe slope annotation	Continuous	0.25	1
V-HYDS-SLOP-TOPT	Top/toe slopes	Continuous	0.25	1
V-HYDS-SOUN	Soundings and overbanks	Continuous	0.18	7
V-HYDS-SPOT	Spot elevations	Continuous	0.25	1
V-HYDS-VOID	Surface void region	Continuous	0.18	7
V-HYDS-WATR	Water level reference (e.g., LWRP, after-grading LWRP, SWP, etc.)	Continuous	0.35	7
Industrial Waste Water				
V-INDW-DEVC	Grit chambers, flumes, neutralizers, oil/water separators, ejectors, tanks, and valves	Continuous	0.25	1
V-INDW-FLOW	Flow direction arrows	Continuous	0.25	1
V-INDW-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.25	1
V-INDW-JBOX	Junction boxes and manholes	Continuous	0.25	1
V-INDW-LAGN	Lagoons	Continuous	0.25	1
V-INDW-MAIN-PIPE	Main industrial waste water piping	IWASTE	0.25	1
V-INDW-METR	Meters	Continuous	0.25	1
V-INDW-PLNT	Treatment plants	Continuous	0.25	1
V-INDW-SERV-PIPE	Industrial waste water service piping	Continuous	0.25	1
V-INDW-SIGN	Surface markers/signs	Continuous	0.25	1
V-INDW-STNS-LIFT	Lift stations	Continuous	0.25	1
Irrigation				
V-IRRG-EQPM	Irrigation equipment (e.g., controllers, valves, etc.)	Continuous	0.25	120
V-IRRG-IDEN	Irrigation annotation	Continuous	0.25	1
V-IRRG-PIPE	Irrigation piping	Continuous	0.25	120
V-IRRG-WELL	Irrigation wells	Continuous	0.18	120

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
Joints				
V-JNTS-CNSL	Construction joints - longitudinal	Continuous	0.25	1
V-JNTS-CNST	Construction joints - transverse	Continuous	0.25	1
V-JNTS-CNTL	Contraction joints - longitudinal	Continuous	0.25	1
V-JNTS-CNTT	Contraction joints - transverse	Continuous	0.25	1
V-JNTS-EDGE	Thickened edges	Continuous	0.25	77
V-JNTS-EXPJ	Expansion joints	Continuous	0.25	104
V-JNTS-IDEN	Joint annotation	Continuous	0.25	1
Levees				
V-LEVE-BANK-IDEN	Levee top of bank annotation	Continuous	0.25	1
V-LEVE-TOPB	Levee top of bank	Continuous	0.25	1
V-LEVE-BERM	Existing berms	Continuous	0.25	1
V-LEVE-BNCH	Levee bench design feature lines (breaklines form DTMs)	Continuous	0.25	1
V-LEVE-BNCH-IDEN	Levee bench annotation	Continuous	0.18	1
V-LEVE-BRRW	Borrow limits	Continuous	0.35	77
V-LEVE-CNTR	Levee centerline	CENTER	0.18	1
V-LEVE-CNTR-IDEN	Levee centerline annotation	Continuous	0.25	1
V-LEVE-IDEN	Levee annotation	Continuous	0.25	1
V-LEVE-OTLN	Levee outline	Continuous	0.35	77
V-LEVE-SLOP	Levee slope indicator with annotation	Continuous	0.25	1
V-LEVE-STAN	Levee stationing	Continuous	0.25	1
V-LEVE-TOE~	Levee toe	DASHED	0.25	1
V-LEVE-TOE~-IDEN	Levee toe annotation	Continuous	0.18	1
Lights				
V-LITE-EXTR	Exterior lights	Continuous	0.35	7
V-LITE-IDEN	Light identifier tags, symbol modifiers, and text	Continuous	0.25	1
Military Ranges				
V-MILR-BATP	Battle positions	Continuous	0.35	77
V-MILR-CAMS	Range cameras	Continuous	0.25	1
V-MILR-FOXH	Fox holes and pits	Continuous	0.25	1
V-MILR-MATS	Moving army targets	Continuous	0.35	77
V-MILR-MITS	Moving infantry targets	Continuous	0.35	77
V-MILR-MITS-IDEN	Moving infantry targets annotation	Continuous	0.25	1
V-MILR-PUTS	Pop up targets	Continuous	0.35	77
V-MILR-PUTS-IDEN	Pop up targets annotation	Continuous	0.25	1
V-MILR-SATS	Stationary army targets	Continuous	0.35	77

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
V-MILR-SATS-IDEN	Stationary army targets annotation	Continuous	0.25	1
V-MILR-SITS	Stationary infantry targets	Continuous	0.35	77
V-MILR-SITS-IDEN	Stationary infantry targets annotation	Continuous	0.25	1
Natural Gas				
V-NGAS-EQPM	Equipment (pumps, motors, etc.)	Continuous	0.25	1
V-NGAS-FLOW	Flow direction arrows	Continuous	0.25	1
V-NGAS-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.25	1
V-NGAS-INST	Instrumentation (valves, etc.)	Continuous	0.25	1
V-NGAS-METR	Meters	Continuous	0.25	1
V-NGAS-MHOL	Manholes	Continuous	0.25	1
V-NGAS-PIPE	Natural gas piping	GAS_LINE	0.25	1
V-NGAS-SIGN	Surface markers/signs	Continuous	0.25	1
V-NGAS-STNS-PUMP	Compressor stations	Continuous	0.25	1
V-NGAS-STNS-REDC	Reducing stations	Continuous	0.25	1
V-NGAS-TANK	Tanks	Continuous	0.18	1
V-NGAS-VALT	Valve/vent pits/vaults	Continuous	0.25	1
Obstructions				
V-OBST-AIRS	Airspace obstructions	Continuous	0.25	70
V-OBST-AIRS-IDEN	Airspace obstruction annotation	Continuous	0.25	1
V-OBST-UWTR	Underwater obstructions (e.g., sunken ship, barge, etc.)	DASHED	0.25	7
V-OBST-UWTR-IDEN	Underwater obstruction annotation	Continuous	0.25	1
Overrun Areas				
V-OVRN-CNTR	Centerlines	CENTER	0.18	7
V-OVRN-CNTR-IDEN	Centerline annotation	Continuous	0.25	1
V-OVRN-IDEN	Airfield overrun area - annotation	Continuous	0.25	1
V-OVRN-OTLN	Airfield overrun area - outlines	Continuous	0.25	77
V-OVRN-SHLD-MRKG	Shoulder markings	Continuous	0.25	77
Pads (Arm/Disarm/Calibration, etc.)				
V-PADS-CNTR	Centerlines	CENTER	0.18	7
V-PADS-CNTR-IDEN	Centerline annotation	Continuous	0.25	1
V-PADS-IDEN	Pads - annotation	Continuous	0.25	1
V-PADS-OTLN	Pad - outlines	Continuous	0.25	77
V-PADS-SHLD	Shoulders with annotation	Continuous	0.18	1
Power				
V-POWR-DEVC	Capacitors, voltage regulators, motors, buses, grounds, and markers	Continuous	0.35	252

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
V-POWR-GENR	Generators	Continuous	0.35	252
V-POWR-IDEN	Power annotation	Continuous	0.25	1
V-POWR-JBOX	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	Continuous	0.35	252
V-POWR-METR	Meters	Continuous	0.35	252
V-POWR-POLE	Power poles	Continuous	0.35	252
V-POWR-POLE-GUYS	Guying equipment	Continuous	0.35	252
V-POWR-SBST	Substation equipment	Continuous	0.35	252
V-POWR-SWCH	Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle	Continuous	0.35	252
V-POWR-XFMR-PADM	Pad mounted transformers	Continuous	0.35	252
V-POWR-XFMR-POLM	Pole mounted transformers	Continuous	0.35	252
Primary Electrical Cables				
V-PRIM-OVHD	Overhead electrical utility lines	EPARN	0.35	252
V-PRIM-OVHD-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.25	1
V-PRIM-UGND	Underground electrical utility lines	EPUGN	0.35	252
V-PRIM-UGND-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.25	1
Parking Lots				
V-PRKG-CNTR	Parking lot centerlines	CENTER	0.18	7
V-PRKG-CNTR-IDEN	Parking lot centerline annotation	Continuous	0.18	7
V-PRKG-CURB	Curbs and gutters	Continuous	0.25	70
V-PRKG-DRAN	Drainage slope indications	Continuous	0.25	7
V-PRKG-FIXT	Parking lot fixtures (e.g., wheel stops, parking meters)	Continuous	0.25	154
V-PRKG-FLNE	Fire lanes	Continuous	0.18	7
V-PRKG-IDEN	Parking lot annotation	Continuous	0.25	1
V-PRKG-MRKG	Pavement markings	Continuous	0.25	1
V-PRKG-OTLN	Parking lot outlines	Continuous	0.35	77
V-PRKG-SIGN	Signs	Continuous	0.25	1
Property				
V-PROP-BRNG	Bearings and distance labels	Continuous	0.35	1
V-PROP-ESMT	Easements	CONEMT	0.50	7
V-PROP-IDEN	Property annotation	Continuous	0.25	1
V-PROP-LINE	Property lines (Existing recorded plats)	PROPL	0.35	1
V-PROP-QTRS	Quarter lines	DOT	0.35	1
V-PROP-RWAY	Right of ways	Right_of_Way	0.50	7
V-PROP-SBCK	Setback lines	DASHEDX2	0.18	7
V-PROP-SECT	Section lines	CENTERX2	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
V-PROP-SECT-IDEN	Section lines annotation	Continuous	0.25	1
V-PROP-SUBD	Subdivision (interior) lines	Continuous	0.25	7
V-PROP-SXTS	Sixteenth lines (40 lines)	PHANTOM	0.35	1
V-PROP-TSHP	Township/range lines	DASHDOT	0.35	1
V-PROP-TSHP-IDEN	Township/range lines annotation	Continuous	0.25	1
Pavements				
V-PVMT-ASPH	Pavement pattern - asphalt	Continuous	0.18	252
V-PVMT-CONC	Pavement pattern - concrete	Continuous	0.18	252
V-PVMT-GRVL	Pavement pattern - gravel	Continuous	0.18	252
V-PVMT-IDEN	Road, parking lot, railroad, airfield pavement annotation	Continuous	0.25	1
V-PVMT-MRKG	Pavement markings	Continuous	0.35	1
V-PVMT-PATT	Joint patterns, text and dimensions	Continuous	0.18	252
Railroads				
V-RAIL-CNTR	Railroad track centerlines	CENTER	0.18	7
V-RAIL-CNTR-IDEN	Railroad track centerline annotation	Continuous	0.25	7
V-RAIL-EQPM	Railroad equipment (e.g., gates, signals)	Continuous	0.25	154
V-RAIL-IDEN	Railroad - annotation	Continuous	0.25	1
V-RAIL-TRAK	Railroad tracks	RAILRD	0.25	1
Rivers				
V-RIVR-BOTM	River bottom	Continuous	0.25	7
V-RIVR-CNTR	Centerline of river	CENTER	0.18	7
V-RIVR-EDGE	River edge	Continuous	0.35	7
V-RIVR-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.25	1
V-RIVR-TOPB	Top of river bank	Continuous	0.25	7
Roads, Streets, and Highways				
V-ROAD-ASPH	Road outlines - asphalt surface	Continuous	0.18	252
V-ROAD-CNTR	Road centerlines	CENTER	0.18	7
V-ROAD-CNTR-IDEN	Road centerline annotation	Continuous	0.18	7
V-ROAD-CONC	Road outlines - concrete surface	Continuous	0.18	7
V-ROAD-CURB	Curbs and gutters	Continuous	0.25	1
V-ROAD-GRAL	Guard rails	GUARD	0.25	1
V-ROAD-GRVL	Road outlines - gravel surface	Continuous	0.18	1
V-ROAD-IDEN	Road, street, highway annotation	Continuous	0.25	1
V-ROAD-MRKG	Pavement markings	Continuous	0.25	1
V-ROAD-OTLN	Road outlines	Continuous	0.25	77
V-ROAD-PATT	Joint patterns, text and dimensions	Continuous	0.18	252

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
V-ROAD-SHLD	Roadway shoulders	Continuous	0.25	1
V-ROAD-SIGN	Signs	Continuous	0.18	7
V-ROAD-UPVD	Road outlines - unpaved surface	Continuous	0.18	70
Riprap and Other Permanent Erosion Control Items				
V-RRAP-BLKT	Natural/synthetic mats, blankets, textiles, and grids used for slope stabilization	Continuous	0.18	7
V-RRAP-GABN	Gabions	Continuous	0.18	7
V-RRAP-MATS	Articulated concrete mats	Continuous	0.18	70
V-RRAP-RVMT	Revetments	Continuous	0.18	7
V-RRAP-TRET	Soil cement, fiber reinforced soil, and chemical erosion control treatments	Continuous	0.18	70
V-RRAP-VEGE	Erosion control aquatic vegetation and planted riparian buffers	DIVIDE	0.18	7
V-RRAP-WEIR	Weirs	Continuous	0.18	70
Runways				
V-RUNW-BLST	Blast pad and stopway markings	Continuous	0.25	7
V-RUNW-CNTR	Centerlines	CENTER	0.18	7
V-RUNW-CNTR-MRKG	Centerline markings	Continuous	0.25	7
V-RUNW-DISP	Displaced threshold markings	Continuous	0.25	7
V-RUNW-DIST	Fixed distance markings	Continuous	0.25	7
V-RUNW-EDGE	Airfield runway edges	Continuous	0.25	1
V-RUNW-IDEN	Airfield runway annotation	Continuous	0.25	1
V-RUNW-SHLD	Shoulder markings	Continuous	0.25	1
V-RUNW-SIDE	Side stripes	Continuous	0.25	77
V-RUNW-TDZM	Touchdown zone markers	Continuous	0.25	1
V-RUNW-THRS	Threshold markers	Continuous	0.25	1
Secondary Electrical Cables				
V-SECD-OVHD	Overhead electrical utility lines	ESARN	0.35	252
V-SECD-OVHD-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.25	1
V-SECD-UGND	Underground electrical utility lines	ESUGN	0.35	252
V-SECD-UGND-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.25	1
Site Features				
V-SITE-EWAT	Edge of water	Continuous	0.35	193
V-SITE-FENC	Fences and handrails	FENCE	0.25	1
V-SITE-FLDS	Stump fields	Continuous	0.25	7
V-SITE-IDEN	Existing site feature/structure annotation	Continuous	0.25	1
V-SITE-OTLN	Existing site features (play structures, bike racks, benches, recreational equipment)	Continuous	0.50	77
V-SITE-ROCK	Rock and rock outcroppings, boulders and cobble	Continuous	0.25	7

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
V-SITE-SOIL	In-situ areas of bare, denuded, or eroded soil	Continuous	0.25	7
V-SITE-STRC	Structures (bridges, sheds, foundation pads, footings, etc.)	Continuous	0.25	14
V-SITE-STRS	Stairs and ramps	Continuous	0.25	1
V-SITE-VEGE	Existing treelines and vegetation	TREEL	0.35	160
V-SITE-VEGE-IDEN	Existing treelines and vegetation - identification	Continuous	0.35	160
V-SITE-WALK	Walks, trails, and bicycle paths	Continuous	0.25	1
V-SITE-WATR	Water features	Continuous	0.35	193
Special Systems				
V-SPCL-SYST	Special systems (UMCS, EMCS, etc.)	Continuous	0.35	252
V-SPCL-SYST-IDEN	Special systems (UMCS, EMCS, etc.) identifier tags, symbol modifier, and text	Continuous	0.25	1
V-SPCL-TRAF	Traffic signal system	Continuous	0.35	252
V-SPCL-TRAF-IDEN	Traffic signal identifier tags, symbol modifier, and text	Continuous	0.25	1
Sanitary Sewer				
V-SSWR-DEVC	Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves	Continuous	0.25	70
V-SSWR-FILT	Filtration beds	Continuous	0.25	70
V-SSWR-FLOW	Flow direction arrows	Continuous	0.25	70
V-SSWR-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.25	1
V-SSWR-JBOX	Junction boxes and manholes	Continuous	0.25	70
V-SSWR-LAGN	Lagoons	Continuous	0.25	70
V-SSWR-LEAC	Leach field	Continuous	0.25	70
V-SSWR-MAIN-PIPE	Sanitary sewer piping	SSWAFX	0.25	70
V-SSWR-NITF	Nitrification drain fields	Continuous	0.25	70
V-SSWR-PLNT	Treatment plants	Continuous	0.25	70
V-SSWR-SERV-PIPE	Sanitary sewer service piping	Continuous	0.25	70
V-SSWR-SIGN	Surface markers/signs	Continuous	0.25	70
V-SSWR-STNS-PUMP	Booster pump stations	Continuous	0.25	70
V-SSWR-TANK	Septic tanks	Continuous	0.25	70
Storm Sewer				
V-STRM-AFFF	AFFF lagoon/detention pond	Continuous	0.25	70
V-STRM-CHUT	Chutes and concrete erosion control structures	Continuous	0.25	70
V-STRM-CULV	Culverts	CULVRT	0.25	70
V-STRM-DEVC	Downspouts, flumes, oil/water separators, and flap gates	Continuous	0.25	70
V-STRM-FLOW	Flow direction arrows	Continuous	0.25	70
V-STRM-FMON	Flow monitoring station	Continuous	0.25	70
V-STRM-HWAL	Headwalls and endwalls	Continuous	0.35	70
V-STRM-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.25	70

Level/Layer Naming		Graphic Defaults			
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**		**RGB Value**
V-STRM-INLT	Inlets (curb, surface, and catch basins)	Continuous	0.25		70
V-STRM-MAIN-PIPE	Storm sewer piping	STRAF	0.25		70
V-STRM-MHOL	Manholes	Continuous	0.25		70
V-STRM-POND	Retention ponds, lagoons, watersheds, and basins	Continuous	0.25		70
V-STRM-ROOF	Roof drain line	Continuous	0.25		70
V-STRM-SERV-PIPE	Storm sewer service piping	Continuous	0.25		70
V-STRM-SIGN	Surface markers/signs	Continuous	0.25		70
V-STRM-STNS-PUMP	Pump stations	Continuous	0.25		70
V-STRM-SUBS-PIPE	Subsurface drain piping	Continuous	0.25		70
Survey					
V-SURV-DATA	Survey data (benchmarks and horizontal control points or monuments)	Continuous	0.25		1
V-SURV-IDEN	Survey, baseline, and control line annotation	Continuous	0.25		1
V-SURV-LINE	Survey, baseline, and control line	DASHED	0.25		77
V-SURV-SYMB	Survey line symbol (PIs)	Continuous	0.35		1
Taxiways					
V-TAXI-CNTR	Centerlines	CENTER	0.18		7
V-TAXI-CNTR-IDEN	Centerline annotation	Continuous	0.25		1
V-TAXI-CNTR-MRKG	Centerline markings	Continuous	0.18		7
V-TAXI-EDGE	Edge markings	Continuous	0.25		77
V-TAXI-HOLD	Holding lines	Continuous	0.25		1
V-TAXI-IDEN	Taxiway - annotation	Continuous	0.25		1
V-TAXI-OTLN	Taxiway - outlines	Continuous	0.25		77
V-TAXI-SHLD	Shoulders with annotation	Continuous	0.25		1
Topography					
V-TOPO-BKLN	Breaklines	DASHDOT	0.35		7
V-TOPO-BKLN-COMM	Subsurface utilities communications breakline	COMMUNICATION_LINE	0.35		7
V-TOPO-BKLN-DOMW	Subsurface utilities water breakline	WATER_LINE	0.35		7
V-TOPO-BKLN-ELEC	Subsurface utilities electric breakline	EPUGN	0.35		7
V-TOPO-BKLN-FUEL	Subsurface utilities liquid fuel breakline	LIQPET	0.35		7
V-TOPO-BKLN-NGAS	Subsurface utilities natural gas breakline	GAS_LINE	0.35		7
V-TOPO-BKLN-SSWR	Subsurface utilities sanitary sewer breakline	SSWAFX	0.35		7
V-TOPO-BKLN-STRM	Subsurface utilities storm sewer breakline	STRAF	0.35		7
V-TOPO-BNDY-EXTR	Surface exterior boundary	Continuous	0.18		70
V-TOPO-BNDY-INTR	Surface interior boundary	DASHED	0.18		7
V-TOPO-BORE	Boring locations and text	Continuous	0.25		1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
V-TOPO-COOR	Coordinate grid text annotation	Continuous	0.25	124
V-TOPO-COOR-LALO	Latitude and longitude grid ticks	Continuous	0.18	70
V-TOPO-COOR-STAT	State Plane coordinate ticks	Continuous	0.18	70
V-TOPO-COOR-UTM~	UTM coordinate ticks	Continuous	0.18	70
V-TOPO-DTMO	DTM obscure area boundary	Continuous	0.25	1
V-TOPO-DTMP	DTM points	Continuous	0.25	1
V-TOPO-DTMT	DTM triangles	Continuous	0.25	14
V-TOPO-MAJR	Major contours	Continuous	0.25	1
V-TOPO-MAJR-IDEN	Major contours - annotation	Continuous	0.25	1
V-TOPO-MINR	Minor contours	Continuous	0.18	70
V-TOPO-MINR-IDEN	Minor contours - annotation	Continuous	0.18	70
V-TOPO-PERI	Surface perimeter	Continuous	0.18	70
V-TOPO-SHAP	Application generated shapes/lines	Continuous	0.18	7
V-TOPO-SHOR	Shorelines, land features, and references	Continuous	0.25	77
V-TOPO-SLOP-FILL	Cut/fill slopes	Continuous	0.25	1
V-TOPO-SLOP-IDEN	Cut/fill slope, top/toe slope annotation	Continuous	0.25	1
V-TOPO-SLOP-TOPT	Top/toe slopes	Continuous	0.25	1
V-TOPO-SOUN	Soundings and overbanks	Continuous	0.18	7
V-TOPO-SPOT	Spot elevations	Continuous	0.25	1
V-TOPO-VOID	Surface void region	Continuous	0.18	7
V-TOPO-WATR	Water level reference (e.g., LWRP, after-grading LWRP, SWP, etc.)	Continuous	0.35	7
Airfield Traffic Areas				
V-TRAF-IDEN	Airfield traffic area annotation	Continuous	0.25	1
V-TRAF-TYPA	Type A traffic area	DASHDOT	0.35	77
V-TRAF-TYPB	Type B traffic area	DIVIDE	0.35	77
V-TRAF-TYPC	Type C traffic area	DOT	0.35	77
Water Supply				
V-WATR-DEVC	Connectors, faucets, reducers, regulators, vents, intake points, taps, backflow preventers, and valves	Continuous	0.25	77
V-WATR-HYDT	Flushing hydrants	Continuous	0.25	77
V-WATR-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.25	1
V-WATR-MAIN-PIPE	Main domestic water piping	WATER_LINE	0.25	77
V-WATR-METR	Meters	Continuous	0.25	77
V-WATR-NPW~-PIPE	Non-potable water piping	NONPOT	0.25	77
V-WATR-SERV-PIPE	Domestic water service piping	Continuous	0.25	77
V-WATR-SIGN	Surface markers/signs	Continuous	0.25	77
V-WATR-STNS-PUMP	Booster pump stations	Continuous	0.25	77

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
V-WATR-STNS-REDC	Pressure reducing stations	Continuous	0.25	77
V-WATR-TANK	Water storage tanks	Continuous	0.25	77
V-WATR-VALT	Valve/vent pits/vaults	Continuous	0.25	77
V-WATR-WELL	Water well houses	Continuous	0.25	77
Wetlands				
V-WETL-BOGS	Bogs	Continuous	0.25	1
V-WETL-FENS	Fens	Continuous	0.25	1
V-WETL-IDEN	Wetland annotation	Continuous	0.25	1
V-WETL-MRSH	Fresh water marshes	Continuous	0.25	193
V-WETL-MRSH-SALT	Tidal saltwater marshes	Continuous	0.25	193
V-WETL-MRSH-TIDL	Tidal freshwater marsh	Continuous	0.25	193
V-WETL-PCSN	Pocosins	Continuous	0.25	1
V-WETL-PHOL	Vernal pools, playas, prairie potholes, wet meadows, and wet prairies	Continuous	0.25	1
V-WETL-RPRN	Riparian forested wetlands	Continuous	0.25	193
V-WETL-SLGH	Sloughs	Continuous	0.25	193
V-WETL-SWMP	Swamps	Continuous	0.25	193
Sections				
V-SECT-IDEN	Component identification numbers	Continuous	0.35	1
V-SECT-MBND	Material beyond section cut	Continuous	0.18	7
V-SECT-MCUT	Material cut by section	Continuous	0.50	77
V-SECT-PATT	Textures and hatch patterns	Continuous	0.18	252
Geotechnical				
Buildings				
B-BLDG-FTPT	Building footprints	Continuous	0.50	7
B-BLDG-IDEN	Building and other stucture annotation	Continuous	0.25	1
Geophysical Borings				
B-BORE-CONE	Cone penetrometer test location	Continuous	0.35	193
B-BORE-HOLE	Geophysical boring locations	Continuous	0.35	193
B-BORE-IDEN	Geophysical location identification	Continuous	0.35	1
B-BORE-LINE	Geophysical transect lines	Continuous	0.50	77
B-BORE-PUSH	Direct push test location	Continuous	0.35	193
B-BORE-STRK	Geophysical strike line	Continuous	0.35	193
Consolidation Curve				
B-CONS-DATA	Consolidation curve data	Continuous	0.25	1
B-CONS-DATA-TEXT	Consolidation curve data text	Continuous	0.25	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
B-CONS-FRAM	Consolidation curve frame	Continuous	0.50	77
B-CONS-GRID	Consolidation curve grid	Continuous	0.25	7
B-CONS-GRID-TEXT	Consolidation curve grid text	Continuous	0.25	1
Excavations				
B-EXCV-EXST	Existing excavation	DASHED	0.25	7
B-EXCV-FUTR	Future excavation	DOT	0.35	7
B-EXCV-PROP	Proposed excavation	Continuous	0.35	70
Grouting				
B-GROU-ALGN	Grout hole alignments	DASHDOT	0.25	1
B-GROU-HOLE	Borehold made specifically for grouting	Continuous	0.35	252
B-GROU-PRIM	Primary grout holes	Continuous	0.35	70
B-GROU-QUAT	Quaternary grout holes	Continuous	0.35	77
B-GROU-SECD	Secondary grout holes	Continuous	0.35	7
B-GROU-TERT	Tertiary grout holes	Continuous	0.35	7
Water Content				
B-H2OC-ATTB-DATA	Water content Atterberg limits	Continuous	0.25	70
B-H2OC-ATTB-TEXT	Water content Atterberg limits text	Continuous	0.25	70
B-H2OC-GRID-MAJR	Water content major grid	Continuous	0.25	7
B-H2OC-GRID-MINR	Water content minor grid	DOT	0.18	252
B-H2OC-GRID-TEXT	Water content grid text	Continuous	0.25	1
B-H2OC-MOIS-DATA	Water content moisture content points and lines	Continuous	0.25	1
B-H2OC-MOIS-TEXT	Water content moisture content text	Continuous	0.25	1
Instrumentation				
B-INST-EXTN	Extensometers	Continuous	0.35	96
B-INST-EXTN-IDEN	Extensometer identification	Continuous	0.35	96
B-INST-GAGE	Pressure gages	Continuous	0.35	96
B-INST-GAGE-IDEN	Pressure gage identification	Continuous	0.35	96
B-INST-INCL	Inclinometers	Continuous	0.35	96
B-INST-INCL-IDEN	Inclinometer identification	Continuous	0.35	96
B-INST-SETL	Settlement monuments	Continuous	0.35	96
B-INST-SETL-IDEN	Settlement monument identification	Continuous	0.35	96
Joints				
B-JNTS-CNTJ-LONG	Construction joints - longitudinal	Continuous	0.35	1
B-JNTS-CNTJ-TRAV	Construction joints - transverse	Continuous	0.35	1
B-JNTS-CTRJ-LONG	Contraction joints - longitudinal	Continuous	0.35	1
B-JNTS-CTRJ-TRAV	Contraction joints - transverse	Continuous	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
B-JNTS-EDGE	Thickened edges	Continuous	2.00	77
B-JNTS-EXPJ	Expansion joints	Continuous	0.35	104
Logs				
B-LOGS-FDTA	Field data	Continuous	0.25	70
B-LOGS-FORM	Bore log form	Continuous	0.35	7
B-LOGS-FRAM	Frame for boring log and associated test data	Continuous	0.50	77
B-LOGS-FRAM-TEXT	Text associated with boring log frame	Continuous	0.25	1
B-LOGS-LDTA	Laboratory data	Continuous	0.25	7
B-LOGS-PATT	Soil/rock patterns	Continuous	0.18	252
Monitoring Points				
B-MONP-SEEP	Seepage monitoring point	Continuous	0.35	7
B-MONP-WEIR	Weirs	Continuous	0.35	77
Normal Stress				
B-NORM-DATA	Normal stress data	Continuous	0.25	1
B-NORM-DATA-TEXT	Normal stress data text	Continuous	0.25	1
B-NORM-GRID-MAJR	Normal stress major grid	Continuous	0.25	7
B-NORM-GRID-MINR	Normal stress minor grid	DOT	0.18	252
B-NORM-GRID-TEXT	Normal stress grid text	Continuous	0.25	1
Plasticity Chart				
B-PLAS-DATA	Plasticity chart data	Continuous	0.25	1
B-PLAS-DATA-TEXT	Plasticity chart data text	Continuous	0.25	1
B-PLAS-FRAM	Plasticity chart frame	Continuous	0.50	77
B-PLAS-GRID	Plasticity chart grid	Continuous	0.35	7
B-PLAS-GRID-TEXT	Plasticity chart grid text	Continuous	0.35	7
Pavements				
B-PVMT-MISM	Mismatched pavement joint	Continuous	0.35	1
B-PVMT-OTLN-AGSC	Outline - aggregate surface course and gravel	Continuous	0.35	195
B-PVMT-OTLN-HMAC	Outline - hot mix, asphaltic concrete	Continuous	0.35	1
B-PVMT-OTLN-PCCP	Outline - Portland cement, concrete pavement	Continuous	0.35	1
B-PVMT-PATT-AGSC	Pattern - aggregate surface course and gravel	Continuous	0.18	252
B-PVMT-PATT-HMAC	Pattern - hot mix, asphaltic concrete	Continuous	0.18	252
B-PVMT-PATT-PCCP	Pattern - Portland cement, concrete pavement	Continuous	0.18	252
B-PVMT-REIN	Reinforced pavement	Continuous	0.35	1
Sample Locations				
B-SAMP-AUGR	Auger sample location	Continuous	0.35	245

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
B-SAMP-CORE	Core sample location	Continuous	0.35	245
B-SAMP-DRVE	Drive sample (shelby split spoon) location	Continuous	0.35	245
B-SAMP-GRAB	Grab sample location	Continuous	0.35	245
B-SAMP-IDEN	Sample location identification	Continuous	0.35	1
B-SAMP-PERC	Percolation test hole	Continuous	0.50	85
B-SAMP-PITS	Test pit sample location	Continuous	0.50	85
B-SAMP-VERT	Vertical core hole location	Continuous	0.35	124
B-SAMP-WASH	Wash bored hole location	Continuous	0.35	124
Shear Strength vs. Normal Stress				
B-SSNS-DATA	Shear strength vs. normal stress data	Continuous	0.25	1
B-SSNS-DATA-TEXT	Shear strength vs. normal stress data text	Continuous	0.25	1
B-SSNS-FRAM	Shear strength vs. normal stress frame	Continuous	0.50	77
B-SSNS-GRID	Shear strength vs. normal stress grid	Continuous	0.25	7
B-SSNS-GRID-TEXT	Shear strength vs. normal stress grid text	Continuous	0.35	1
Shear Strength				
B-SSTR-1TST-DATA	Shear strength 1 Point Q test data	Continuous	0.25	77
B-SSTR-1TST-TEXT	Shear strength 1 Point Q test text	Continuous	0.25	77
B-SSTR-GRID-MAJR	Shear strength major grid	Continuous	0.25	7
B-SSTR-GRID-MINR	Shear strength minor grid	DOT	0.18	252
B-SSTR-GRID-TEXT	Shear strength grid text	Continuous	0.25	1
B-SSTR-QTST-DATA	Shear strength Q test data	Continuous	0.25	1
B-SSTR-QTST-TEXT	Shear strength Q test text	Continuous	0.25	1
B-SSTR-RTST-DATA	Shear strength R test data	Continuous	0.25	1
B-SSTR-RTST-TEXT	Shear strength R test text	Continuous	0.25	1
B-SSTR-STST-DATA	Shear strength S test data	Continuous	0.25	7
B-SSTR-STST-TEXT	Shear strength S test text	Continuous	0.25	7
B-SSTR-UTST-DATA	Shear strength UCT test data	Continuous	0.25	70
B-SSTR-UTST-TEXT	Shear strength UCT test text	Continuous	0.25	70
B-SSTR-VTST-DATA	Shear strength Vane shear test data	Continuous	0.25	7
B-SSTR-VTST-TEXT	Shear strength Vane shear test text	Continuous	0.25	7
Tabular Test				
B-TABT-DATA	Tabular test data	Continuous	0.25	1
B-TABT-DATA-TEXT	Tabular test data text	Continuous	0.25	1
B-TABT-FRAM	Tabular test data frame	Continuous	0.50	77
B-TABT-GRID	Tabular test data grid	Continuous	0.25	7
B-TABT-GRID-TEXT	Tabular test data grid text	Continuous	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
Wells				
B-WELL-ASR~	ASR wells	Continuous	0.35	160
B-WELL-HORZ	Horizontal drain	Continuous	0.35	160
B-WELL-MONT	Monitoring wells	Continuous	0.35	160
B-WELL-PIZO	Piezometers	Continuous	0.35	160
B-WELL-VERT	Vertical drain	Continuous	0.35	160
Wet Density				
B-WETD-DATA	Wet density data	Continuous	0.25	1
B-WETD-DATA-TEXT	Wet density data text	Continuous	0.25	1
B-WETD-GRID-MAJR	Wet density major grid	Continuous	0.25	7
B-WETD-GRID-MINR	Wet density minor grid	DOT	0.18	252
B-WETD-GRID-TEXT	Wet density grid text	Continuous	0.25	1
Sections				
B-SECT-IDEN	Component identification numbers	Continuous	0.35	1
B-SECT-MBND	Material beyond section cut	Continuous	0.18	7
B-SECT-MCUT	Material cut by section	Continuous	0.35	7
B-SECT-PATT	Textures and hatch patterns	Continuous	0.18	252
B-SECT-SLOG	Stick log graphics	Continuous	0.35	70
B-SECT-STRA	Stratigraphy	Continuous	0.18	252
Detail Information				
B-DETL-GRPH	Graphics, gridlines, non-text items	Continuous	0.35	7
Civil				
Airfield				
C-AFLD-BRDG-AERO	Runway & Taxiway Bridge	Continuous	0.25	1
C-AFLD-DSRF-BLDR	building restriction line (BRL)	Continuous	0.25	3
C-AFLD-DSRF-HELI-FATO	helipad Final Approach and Takeoff Clearance Surface (FATO)	Continuous	0.25	3
C-AFLD-DSRF-HELI-HAS	Heliport Safety Area (HAS)	Continuous	0.25	3
C-AFLD-DSRF-HELI-HPZ	Heliport Protection Zone (HPZ)	Continuous	0.25	3
C-AFLD-DSRF-NMOV	Aircraft non-movement area	Continuous	0.25	3
C-AFLD-DSRF-IAOFZ	Inner Approach Obstacle Free Zone (IAOFZ)	Continuous	0.25	3
C-AFLD-DSRF-ITOFZ	Inner Transitional Obstacle Free Zone (ITOFZ)	Continuous	0.25	7
C-AFLD-DSRF-OFZ	Obstacle Free Zone (OFZ)	Continuous	0.25	3
C-AFLD-DSRF-PRSIFR	Parallel Runway Separation Simultaneous IFR Operations (PRSIFR)	Continuous	0.25	3
C-AFLD-DSRF-PRSVFR	Parallel Runway Separation Simultaneous VFR Operations (PRSVFR)	Continuous	0.25	3

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
C-AFLD-DSRF-POFZ	Precision obstacle free zone (POFZ)	Continuous	0.25	3
C-AFLD-DSRF-ROFA	Runway Object Free Area (ROFA)	Continuous	0.25	3
C-AFLD-DSRF-RPZ	Runway protection zone (RPZ)	Continuous	0.25	3
C-AFLD-DSRF-RSA	Runway safety area (RSA)	Continuous	0.25	3
C-AFLD-DSRF-RWYPTX	Runway to Parallel Taxiway and Taxiline Separation (RWYPTX)	Continuous	0.25	3
C-AFLD-DSRF-TOFA	Taxiway and taxilane object free area (TOFA)	Continuous	0.25	3
C-AFLD-DSRF-TXSA	Taxiway safety area (TXSA)	Continuous	0.25	3
C-AFLD-DSRF-TSA	Threshold Sighting Area (TSA)	Continuous	0.25	3
C-AFLD-DSRF-TSS	Threshold Siting Surface (TSS)	Continuous	0.25	3
C-AFLD-DSRF-KEYH	Helipad design surface key holes	Continuous	0.25	3
C-AFLD-DSRF-OFA_	Helipad design surface object free area (OFA)	Continuous	0.25	3
C-AFLD-DSRF-POFA	Helipad design surface Precision Object Free Area	Continuous	0.25	3
C-AFLD-JETB-	PassengerLoadingBridge	Continuous	0.25	3
C-AFLD-LMTA-RSTR	Restricted access boundary	Continuous	0.25	5
C-AFLD-AIDS-BECN	Nondirectional Radio Beacon - Compass Locator, High Frequency, Medium HF, Ultra HF	Continuous	0.25	4
C-AFLD-AIDS-COMM	Airfield Navigational Aid - Communication	Continuous	0.25	4
C-AFLD-AIDS-CRIT	Airfield Navigational Aid - Critical Area	Continuous	0.25	3
C-AFLD-AIDS-GENL	Direction Finding Equipment (DF), Fan Marker, Fan Marker located with a radio beacon, Moving Target Indicator reflector, Simplified Directional Facility (SDF), Touchdown Reflector	Continuous	0.25	4
C-AFLD-AIDS-GPS_	Airfield Navigational Aid - GPS	Continuous	0.25	4
C-AFLD-AIDS-ILS_	Airfield Navigational Aid - Instrument Landing System (ILS)	Continuous	0.25	4
C-AFLD-AIDS-ILSY	Distance Measuring Equipment (DME), Glide Slope Capture Effect, Glide Slope End Fire, Glide Slope Null Reference, Glide Slope Side Band, Localizer	Continuous	0.25	4
C-AFLD-AIDS-MCWV	Airfield Navigational Aid - Microwave	Continuous	0.25	4
C-AFLD-AIDS-MISC	Airfield Navigational Aid - Miscelaneous	Continuous	0.25	4
C-AFLD-AIDS-MLSY	Microwave Landing System Azimuth Antenna, Microwave Landing System DME, Microwave Landing System Elevation Antenna	Continuous	0.25	4
C-AFLD-AIDS-MSBL	Microwave scan beam Landing System AZimuth antenna, Microwave scan beam Landing System Distance Measuring Equipment, Microwave scan beam Landing System ELevation antenna	Continuous	0.25	4
C-AFLD-AIDS-MLSR	FAA MLSR Equipment, Airfield MLSR Lights	Continuous	0.25	203
C-AFLD-AIDS-OMNI	Tactical Air Navigation, VHF Omni directional Range, VOR and collocated TACAN, VOR Test Facility	Continuous	0.25	4
C-AFLD-AIDS-OTHR	Airfield Navigational Aid - Other	Continuous	0.25	4
C-AFLD-AIDS-RADI	Airfield Navigational Aid - Radio	Continuous	0.25	4
C-AFLD-AIDS-RADR	Airfield Navigational Aid - Radar, Air Route Surveillance Radar (ARSR), Airport Surveillance Radar (ASR), Precision Approach Radar, Secondary Radar Antenna	Continuous	0.25	4
C-AFLD-AIDS-REIL	FAA Reils Equipment, Airfield REIL Lights	Continuous	0.25	203
C-AFLD-AIDS-RMTE	Airfield Navigational Aid - Remote	Continuous	0.25	4
C-AFLD-AIDS-RWSL	FAA RWSL Equipment	Continuous	0.25	203
C-AFLD-AIDS-STRB	Airfield Navigational Aid - Strobe	Continuous	0.25	4
C-AFLD-AIDS-SYST	Airfield Navigational Aid - System	Continuous	0.25	4

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
C-AFLD-AIDS-TLSY	Transponder Landing System Approach Glideslope, Localizer	Continuous	0.25	4
C-AFLD-AIDS-VISI	Used to identify the navaid as a visual system	Continuous	0.25	4
C-AFLD-AIDS-VOR~	FAA VOR Equipment, Airfield VOR	Continuous	0.25	203
C-AFLD-AIDS-WTHR	Airfield Navigational Aid - Weather	Continuous	0.25	4
C-AFLD-OTLN-AHOA-	Airfield Navigational Aid - Weather	Continuous	0.25	2
C-AFLD-OTLN-FREQ-	Frequency Area	Continuous	0.25	3
C-AFLD-OTLN-MOVM	airfield Movement Area	Continuous	0.25	6
C-AFLD-SIGN-LAND	Airfield Landside Sings	Continuous	0.25	4
Annotation				
C-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	Continuous	0.15	7
C-ANNO-KEYN	Reference keynotes with associated leaders	Continuous	0.15	7
C-ANNO-MASK	Text/shape mask for use with photo backgrounds	Continuous	0.18	113
C-ANNO-NOTE	General notes and general remarks	Continuous	0.35	2
C-ANNO-NPLT	Non-plotting graphic information	Continuous	0.18	5
C-ANNO-PATT	Patterning, poche, shading, and hatching	Continuous	0.18	8
C-ANNO-RDME	Read-me information	Continuous	0.18	5
C-ANNO-REFR	Reference files and raster attachments	Continuous	0.15	7
C-ANNO-SYMB	Miscellaneous symbols	Continuous	0.15	6
C-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	Continuous	0.15	7
Alignments				
C-ALGN-DATA	Alignment coordinates and curve data	Continuous	0.35	7
C-ALGN-LINE	Alignments	DASHDOT	0.35	1
C-ALGN-MAJR	Alignment major stationing and tick marks	Continuous	0.35	7
C-ALGN-MARK	Alignment tick marks	Continuous	0.35	70
C-ALGN-MINR	Alignment minor stationing and tick marks	Continuous	0.18	1
C-ALGN-STAT	Alignment stationing and tick marks, alignment PI stations	Continuous	0.35	70
C-ALGN-SYMB	Alignment symbols (PIs)	Continuous	0.35	1
C-ALGN-TEXT	Alignment text, annotation with associated leaders	Continuous	0.35	1
Aprons				
C-APRN-ACPK	Aircraft gate/stand parking area	Continuous	0.25	6
C-APRN-ACPK-OTLN	Aircraft gate/stand parking area outline	Continuous	0.25	6
C-APRN-ANOM-	Aircraft non-movement area	Continuous	0.25	7
C-APRN-CNTR	Apron centerlines	CENTER	0.25	7
C-APRN-CNTR-IDEN	Apron centerline annotation	Continuous	0.35	1
C-APRN-DEIC	Aircraft Deicing Area	Continuous	0.25	7
C-APRN-GRND	Grounding points	Continuous	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
C-APRN-HOLD	Holding position markings	Continuous	0.25	7
C-APRN-IDEN	Airfield apron - annotation	Continuous	0.35	1
C-APRN-MOOR	Mooring points	Continuous	0.35	1
C-APRN-MRKG	Apron markings	Continuous	0.50	77
C-APRN-MRKG-APSN	Apron Signage markings	Continuous	0.25	6
C-APRN-MRKG-CNTR	Apron centerline markings	Continuous	0.25	6
C-APRN-MRKG-GTLN	Apron Gate line markings	Continuous	0.25	6
C-APRN-MRKG-GTSN	Apron gate markings	Continuous	0.25	6
C-APRN-MRKG-HOLD-	Apron Holding position markings	Continuous	0.25	6
C-APRN-MRKG-OTHP	Apron other markings	Continuous	0.25	6
C-APRN-MRKG-SECU	Apron security zone markings	Continuous	0.25	6
C-APRN-OTLN	Airfield apron - outlines	Continuous	0.50	77
C-APRN-SECU	Security zone markings	Continuous	0.25	7
C-APRN-SHLD	Shoulders with annotation	Continuous	0.35	1
C-APRN-SHLD-MRKG	Shoulder stripes	Continuous	0.35	1
C-APRN-SIGN-	Airfield signs on the apron	Continuous	0.25	4
Buildings and Primary Structures				
C-BLDG-DECK	Outdoor decks (attached, no roof overhead)	Continuous	0.50	77
C-BLDG-DOCK	Loading docks	Continuous	0.50	77
C-BLDG-FTPT	Building footprints	Continuous	0.70	7
C-BLDG-IDEN	Building and other stucture annotation	Continuous	0.35	1
C-BLDG-OVHD	Building overhangs	Continuous	0.50	77
C-BLDG-PRCH	Porches (attached, roof overhead)	Continuous	0.50	77
Borrow Areas				
C-BORW-IDEN	Borrow/spoil area annotation	Continuous	0.35	1
C-BORW-LINE	Borrow/spoil area	DASHED	0.35	1
Bridges				
C-BRDG-CHRD-LOW~	Low chord	Continuous	0.50	77
C-BRDG-CNTR	Bridge centerlines	CENTER	0.25	7
C-BRDG-CTLJ	Control joints	Continuous	0.25	77
C-BRDG-DECK	Bridge deck	Continuous	0.50	77
C-BRDG-IDEN	Bridge annotation	Continuous	0.35	1
C-BRDG-OTLN	Bridge outlines	Continuous	0.50	77

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
C-BRDG-RLG~	Bridge railing	Continuous	0.25	77
Channels				
C-CHAN-BANK-IDEN	Channel/canal top of bank annotation	Continuous	0.35	1
C-CHAN-BANK-TOP~	Channel/canal top of bank	Continuous	0.35	1
C-CHAN-BNCH	Channel/canal bench design feature lines (breaklines form DTMs)	Continuous	0.35	1
C-CHAN-BWTR	Breakwaters	Continuous	0.35	1
C-CHAN-CNTR	Channel centerline and survey report lines	CENTER	0.25	7
C-CHAN-CNTR-IDEN	Channel centerline and survey report lines - annotation	Continuous	0.35	7
C-CHAN-DACL	De-authorized channel limits, anchorages, etc.	Continuous	0.35	70
C-CHAN-DACL-IDEN	De-authorized channel limits, anchorages, etc. - annotation	Continuous	0.35	70
C-CHAN-DOCK	Docks, decks, floats, piers, and mooring facilities	Continuous	0.35	1
C-CHAN-LIMT	Channel limits, anchorages, turning basins, disposal areas, etc.	Continuous	0.35	1
C-CHAN-LIMT-IDEN	Channel limits, anchorages, turning basins, disposal areas, etc. - annotation	Continuous	0.35	1
C-CHAN-AIDS	Navigation aids and text	Continuous	0.35	7
C-CHAN-SLOP-LINE	Channel cut/fill slope (Indicates cut and fill lines)	Continuous	0.35	1
C-CHAN-SPOL	Spoil limits	Continuous	0.50	77
C-CHAN-SYMB	Channel/canal symbols	Continuous	0.35	1
C-CHAN-TEXT	Channel/canal text, annotation with associated leaders	Continuous	0.35	1
C-CHAN-TOE~	Channel/canal toe	DASHEDX2	0.50	7
C-CHAN-TOE~-IDEN	Channel/canal toe annotation	Continuous	0.35	1
C-CHAN-TURN	Turning points	Continuous	0.35	1
C-CHAN-WIDE	Channel/canal widener	DASHEDX2	0.50	77
Communications				
C-COMM-ANTN	Antennae	Continuous	0.50	30
C-COMM-CIRC	Circuits	Continuous	0.50	30
C-COMM-CNMB	Communication circuit numbers (e.g., panel/circuit number, wire/conduit size)	Continuous	0.35	7
C-COMM-DBNK	Communications - Ductbank	EUDUCN	0.25	30
C-COMM-EQPM	Other communications distribution equipment	Continuous	0.50	30
C-COMM-FIBR	Communications - Fiberoptic line	Continuous	0.25	30
C-COMM-JBOX	Communication junction boxes, pull boxes, handholes, pedestals, and splices	Continuous	0.50	30
C-COMM-LINE	Communications - Communication line	Continuous	0.25	30
C-COMM-MHOL	Manholes	Continuous	0.50	30
C-COMM-OVHD	Overhead communications/telephone lines	COMARN	0.50	30
C-COMM-OVHD-IDEN	Identifier tags, symbol modifier and text	Continuous	0.35	7
C-COMM-POLE	Poles	Continuous	0.50	30
C-COMM-POLE-GUYS	Guying equipment	Continuous	0.50	30

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
C-COMM-POLE-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	30
C-COMM-UGND	Underground communications/telephone lines	COMUGN	0.50	30
C-COMM-UGND-IDEN	Identifier tags, symbol modifier and text	Continuous	0.35	30
Dredging				
C-DRED-IDEN	Dredging annotation	Continuous	0.35	1
C-DRED-LIMT	Dredge limit lines	Continuous	0.50	77
C-DRED-OHWM	Ordinary high water marks	Continuous	0.35	1
Ditches or Washes				
C-DTCH-BOTM	Bottom of ditch or wash	DITCH	0.25	7
C-DTCH-CNTR	Centerline of ditch or wash	CENTER	0.25	7
C-DTCH-EWAT	Edge of water	Continuous	0.25	77
C-DTCH-IDEN	Ditches and washes annotation	Continuous	0.35	70
C-DTCH-TOP~	Top of ditch or wash	Continuous	0.25	70
Habitats/Landforms				
C-ECCO-BURR	Burrow	Continuous	0.50	77
C-ECCO-DENS	Den	Continuous	0.50	77
C-ECCO-GATR	Gator hole	DASHED	0.35	1
C-ECCO-HUMK	Hummocks	Continuous	0.35	1
C-ECCO-IDEN	Habitat annotation	Continuous	0.35	1
C-ECCO-NEST	Nest, nesting tree	Continuous	0.50	77
C-ECCO-PRCH	Perch/nesting hole	Continuous	0.50	77
Electrical				
C-ELEC-DBNK	Ductbank	EUDUCN	0.35	1
C-ELEC-FAA~-MHOL	FAA Manholes	Continuous	0.25	1
C-ELEC-LITE	Light	Continuous	0.25	1
C-ELEC-POLE	poles	Continuous	0.25	1
C-ELEC-IDEN	identifier tags, symbol modifiers, and text	Continuous	0.15	7
Erosion and Sediment Control (Temporary/Construction)				
C-EROS-CIPR	Culvert inlet protection	Continuous	0.25	70
C-EROS-CNTE	Construction entrance	Continuous	0.35	1
C-EROS-DDIV	Drainage divides	Continuous	0.50	77
C-EROS-DVDK	Diversion dike	Continuous	0.50	77
C-EROS-IDEN	Erosion and sediment control annotation	Continuous	0.35	70
C-EROS-INPR	Inlet protection	Continuous	0.25	70
C-EROS-SILT	Silt fence	FENCE	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
C-EROS-SILT-CHCK	Silt check	Continuous	0.35	1
C-EROS-SILT-TRAP	Silt trap	Continuous	0.35	1
C-EROS-SSLT	Super silt fence	FENCE	0.35	1
Flood Hazard Area				
C-FLHA-025Y	25 year mark	DIVIDE	0.35	1
C-FLHA-050Y	50 year mark	DASHEDX2	0.35	1
C-FLHA-100Y	100 year mark	Continuous	0.35	1
C-FLHA-200Y	200 year mark	DASHED	0.35	1
C-FLHA-500Y	500 year mark	CENTERX2	0.35	1
C-FLHA-IDEN	Flood hazard area annotation	Continuous	0.35	1
Liquid Fuel				
C-FUEL-BERM	Berms for retaining fuel in case of major tank/line rupture	Continuous	0.35	77
C-FUEL-DEFL-PIPE	Defueling piping	Continuous	0.35	2
C-FUEL-DEVC	Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves	Continuous	0.35	2
C-FUEL-FLOW	Flow direction arrows	Continuous	0.35	7
C-FUEL-FITT	Caps, crosses and tees	Continuous	0.35	2
C-FUEL-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.35	7
C-FUEL-JBOX	Junction boxes, manholes, handholes, test boxes	Continuous	0.35	2
C-FUEL-PIPE	Fuel piping	FUEL_LINE	0.35	2
C-FUEL-METR	Meters	Continuous	0.35	2
C-FUEL-PITS-HYDT	Hydrant control pits	Continuous	0.35	2
C-FUEL-VALT	Hydrant control/valve/vent pits/vaults	Continuous	0.35	2
C-FUEL-LQPG	Liquid petroleum gas piping	LIQPET	0.25	2
C-FUEL-SERV-PIPE	Service piping	Continuous	0.35	2
C-FUEL-STNS-PUMP	Booster pump stations	Continuous	0.35	2
C-FUEL-TANK	Fuel tanks	Continuous	0.35	2
C-FUEL-TRCH	Fuel line trench	Continuous	0.35	2
Grid Lines				
C-GRID-FRAM	Frame	Continuous	0.50	77
C-GRID-MAJR	Major grid lines	DOT	0.35	252
C-GRID-MINR	Minor grid lines	DOT	0.18	252
C-GRID-TEXT	Border text, annotation	DOT	0.35	1
Heliports				
C-HELI-BLST	Blast pad and stopway markings	Continuous	0.35	7
C-HELI-CNTR	Centerline markings	Continuous	0.35	7
C-HELI-DISP	Displaced threshold markings	Continuous	0.35	7

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
C-HELI-DIST	Fixed distance markings	Continuous	0.35	7
C-HELI-IDEN	Heliport numbers and letters	Continuous	0.35	1
C-HELI-SHLD	Shoulder markings	Continuous	0.35	1
C-HELI-SIDE	Side stripes	Continuous	0.50	77
C-HELI-TDZM	Touchdown zone markers	Continuous	0.35	1
C-HELI-THRS	Threshold markers	Continuous	0.35	1
C-HELI-DSRF	Helipad design surface	Continuous	0.25	6
C-HELI-MRKG-BLST	Helipad blast pad and stopway markings	Continuous	0.25	6
C-HELI-MRKG-CNTR	Centerline markings	Continuous	0.25	6
C-HELI-MRKG-DIST	Fixed distance markings	Continuous	0.25	6
C-HELI-OTLN-FATO	Heliport final approach take off	Continuous	0.25	6
C-HELI-OTLN-TLOF	Helipad take off and landing area	Continuous	0.25	6
Joints				
C-JNTS-CNSL	Construction joints - longitudinal	Continuous	0.35	1
C-JNTS-CNST	Construction joints - transverse	Continuous	0.35	1
C-JNTS-CNTL	Contraction joints - longitudinal	Continuous	0.35	1
C-JNTS-CNTT	Contraction joints - transverse	Continuous	0.35	1
C-JNTS-EDGE	Thickened edges	Continuous	0.35	77
C-JNTS-EXPJ	Expansion joints	Continuous	0.35	104
C-JNTS-IDEN	Joint annotation	Continuous	0.35	1
Natural Gas				
C-NGAS-EQPM	Equipment (pumps, motors, etc.)	Continuous	0.35	2
C-NGAS-FITT	Caps, cleanouts, crosses, and tees	Continuous	0.25	2
C-NGAS-FLOW	Flow direction arrows	Continuous	0.35	7
C-NGAS-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.35	7
C-NGAS-INST	Instrumentation (valves, etc.)	Continuous	0.35	2
C-NGAS-METR	Meters	Continuous	0.35	2
C-NGAS-MHOL	Manholes	Continuous	0.35	2
C-NGAS-PIPE	Natural gas piping	GAS_LINE	0.35	2
C-NGAS-VALV	Natural gas valves/boxes	Continuous	0.25	2
C-NGAS-DEVC	Hydrant fill points, lights, vents, markers, rectifiers, reducers, regulators, sources, tanks, drip pots, taps, and valves	Continuous	0.25	2
C-NGAS-SIGN	Surface markers/signs	Continuous	0.35	2
C-NGAS-STNS-PUMP	Compressor stations	Continuous	0.35	2
C-NGAS-STNS-REDC	Reducing stations	Continuous	0.35	2
C-NGAS-TANK	Tanks	Continuous	0.25	2
C-NGAS-VALT	Vent pits/vaults	Continuous	0.25	2

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
Obstructions				
C-OBST-AIRS	Airspace obstructions	Continuous	0.35	70
C-OBST-AIRS-IDEN	Obstruction annotation	Continuous	0.35	1
Overrun Areas				
C-OVRN-CNTR	Centerlines	CENTER	0.25	7
C-OVRN-CNTR-IDEN	Centerline annotation	Continuous	0.35	1
C-OVRN-IDEN	Airfield overrun area - annotation	Continuous	0.35	1
C-OVRN-OTLN	Airfield overrun area - outlines	Continuous	0.35	77
C-OVRN-SHLD-MRKG	Shoulder markings	Continuous	0.35	77
Parking Lots				
C-PRKG-CARS	Graphic illustration of cars	Continuous	0.35	1
C-PRKG-CNTR	Parking lot centerlines	CENTER	0.25	7
C-PRKG-CNTR-IDEN	Parking lot centerline annotation	Continuous	0.25	7
C-PRKG-CURB	Curbs and gutters	Continuous	0.35	70
C-PRKG-DRAN	Drainage slope indications	Continuous	0.35	7
C-PRKG-FIXT	Parking lot fixtures (e.g., wheel stops, parking meters)	Continuous	0.35	154
C-PRKG-FLNE	Fire lanes	Continuous	0.25	7
C-PRKG-IDEN	Parking lot annotation	Continuous	0.35	1
C-PRKG-MRKG	Pavement markings	Continuous	0.35	1
C-PRKG-OTLN	Parking lot outlines	Continuous	0.50	77
C-PRKG-SIGN	Signs	Continuous	0.35	1
Property				
C-PROP-CONS	Construction limits/controls, staging area	CONLMT	0.40	7
C-PROP-ESMT	Easements	HIDDEN2	0.40	7
C-PROP-IDEN	Property annotation	Continuous	0.35	1
C-PROP-LINE	Property lines	PHANTOM	0.70	1
C-PROP-RWAY	Right of ways	Right_of_Way	0.50	7
C-PROP-RWAY-ACQU	Right of way to be acquired in perpetuity	Continuous	0.70	7
C-PROP-SBCK	Setback lines	DASHEDX2	0.25	7
C-PROP-SECT	Section lines	CENTERX2	0.50	1
C-PROP-SECT-IDEN	Section lines annotation	Continuous	0.35	1
C-PROP-TSHP	Township/range lines	DASHDOT	0.50	1
C-PROP-TSHP-IDEN	Township/range lines annotation	Continuous	0.35	1
Pavements				
C-PVMT-ASPH	Pavement pattern - asphalt	Continuous	0.18	252

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
C-PVMT-CONC	Pavement pattern - concrete	Continuous	0.18	252
C-PVMT-GRVL	Pavement pattern - gravel	Continuous	0.18	252
C-PVMT-IDEN	Road, parking lot, railroad, airfield pavement annotation	Continuous	0.25	1
C-PVMT-MRKG	Pavement markings	Continuous	0.35	1
C-PVMT-PATT	Joint patterns, text and dimensions	Continuous	0.18	252
Railroads				
C-RAIL-CNTR	Railroad track centerlines	CENTER	0.25	7
C-RAIL-CNTR-IDEN	Railroad track centerline annotation	Continuous	0.35	7
C-RAIL-EQPM	Railroad equipment (e.g., gates, signals)	Continuous	0.35	154
C-RAIL-IDEN	Railroad - annotation	Continuous	0.35	1
C-RAIL-TRAK	Railroad tracks	RAILRD	0.35	1
Roads, Streets, and Highways				
C-ROAD-ASPH	Road outlines - asphalt surface	Continuous	0.25	252
C-ROAD-CNTR	Road centerlines	CENTER	0.25	7
C-ROAD-CNTR-IDEN	Road centerline annotation	Continuous	0.25	7
C-ROAD-CONC	Road outlines - concrete surface	Continuous	0.25	7
C-ROAD-CURB	Curbs and gutters	Continuous	0.35	1
C-ROAD-GRAL	Guard rails	GUARD	0.35	1
C-ROAD-GRVL	Road outlines - gravel surface	Continuous	0.25	1
C-ROAD-IDEN	Road, street, highway annotation	Continuous	0.35	1
C-ROAD-MRKG	Pavement markings	Continuous	0.35	1
C-ROAD-PATT	Joint patterns, text and dimensions	Continuous	0.18	252
C-ROAD-SHLD	Roadway shoulder	Continuous	0.35	1
C-ROAD-SIGN	Signs	Continuous	0.25	7
C-ROAD-UPVD	Road outlines - unpaved surface	Continuous	0.25	70
Riprap and Other Permanent Erosion Control Items				
C-RRAP-GABN	Gabions	Continuous	0.25	7
C-RRAP-MATS	Articulated concrete mats	Continuous	0.25	70
C-RRAP-RVMT	Revetments	Continuous	0.25	7
C-RRAP-WEIR	Weirs	Continuous	0.25	70
Runways				
C-RUNW-BLST	Blast pad and stopway markings	Continuous	0.35	7
C-RUNW-CNTR	Centerlines	CENTER	0.25	7
C-RUNW-CNTR-ENDP	Runway End point	Continuous	0.25	5
C-RUNW-CNTR-MRKG	Centerline markings	Continuous	0.35	7

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
C-RUNW-DISP	Displaced threshold markings	Continuous	0.35	7
C-RUNW-DIST	Fixed distance markings	Continuous	0.35	7
C-RUNW-EDGE	Airfield runway edges	Continuous	0.35	1
C-RUNW-IDEN	Airfield runway annotation	Continuous	0.35	1
C-RUNW-MRKG-AIMP	Runway aiming point marker	Continuous	0.25	6
C-RUNW-MRKG-PCLS-	Runway permanent closure marking	Continuous	0.25	6
C-RUNW-MRKG-RHLD-	Runway holding line markings	Continuous	0.25	6
C-RUNW-MRKG-RWYX	Runway arrow marking, arrowhead marking, chevron marking, land and hold short area	Continuous	0.25	6
C-RUNW-MRKG-SIDE-	Runway Side stripes	Continuous	0.25	6
C-RUNW-MRKG-TCLS-	Runway temporary closure marking	Continuous	0.25	6
C-RUNW-OTLN-	Airfield runway outline	Continuous	0.25	4
C-RUNW-OTLN-ARST	Runway arresting area outline	Continuous	0.25	3
C-RUNW-OTLN-BLST	Runway blast pad outline	Continuous	0.25	4
C-RUNW-OTLN-CLRW	Runway clearway outline	Continuous	0.25	4
C-RUNW-OTLN-INTS	Runway intersection	Continuous	0.25	3
C-RUNW-OTLN-SEGM	Runway Element	Continuous	0.25	4
C-RUNW-OTLN-STWY	Runway stopway outline	Continuous	0.25	4
C-RUNW-SHLD	Shoulder markings	Continuous	0.35	1
C-RUNW-SIDE	Side stripes	Continuous	0.35	77
C-RUNW-SIGN-	Airfield signs on the runway	Continuous	0.25	4
C-RUNW-SIGN-HRWI	Hold Runway Intersection	Continuous	0.25	4
C-RUNW-SIGN-RLOC	Runway location signs	Continuous	0.25	4
C-RUNW-SIGN-RWDR	Runway distance remaining signs	Continuous	0.25	4
C-RUNW-SIGN-RWEX	Runway exit signs	Continuous	0.25	4
C-RUNW-TDZM	Touchdown zone markers	Continuous	0.35	1
C-RUNW-THRS	Threshold markers	Continuous	0.35	1
Site Features				
C-SITE-BLIN	Site breakline	DASHED	0.35	70
C-SITE-FENC	Fences and handrails	FENCE	0.35	1
C-SITE-IDEN	Site feature annotation	Continuous	0.35	1
C-SITE-STRC	Structures (bridges, sheds, foundation pads, footings, etc.)	Continuous	0.35	14
C-SITE-STRS	Stairs and ramps	Continuous	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
C-SITE-WALK	Walks, trails and bicycle paths	Continuous	0.35	1
Sanitary Sewer				
C-SSWR-DEVC	Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves	Continuous	0.35	70
C-SSWR-FILT	Filtration beds	Continuous	0.35	70
C-SSWR-FITT	Caps, cleanouts, crosses, tees and other fittings	Continuous	0.35	70
C-SSWR-FLOW	Flow direction arrows	Continuous	0.35	7
C-SSWR-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.35	7
C-SSWR-JBOX	Junction boxes and manholes	Continuous	0.35	70
C-SSWR-LAGN	Lagoons	Continuous	0.35	70
C-SSWR-LEAC	Leach field	Continuous	0.35	70
C-SSWR-MHOL	Sanitary Sewer Manhole	Continuous	0.35	70
C-SSWR-NITF	Nitrification drain fields	Continuous	0.35	70
C-SSWR-PLNT	Treatment plants	Continuous	0.35	70
C-SSWR-PIPE	Sanitary sewer piping	SANITARY_LINE	0.35	70
C-SSWR-SERV-PIPE	Sanitary sewer service piping	Continuous	0.35	70
C-SSWR-PIPE-FM	Force main piping	FORCEMAIN	0.35	6
C-SSWR-VALV-FM	Force main Valve	Continuous	0.25	6
C-SSWR-FITT-FM	Force main caps, crosses, tees and other fittings	Continuous	0.25	6
C-SSWR-IDEN-FM	Force main Identifier tags, symbol modifier, and text	Continuous	0.25	7
C-SSWR-FLOW-FM	Force main Flow direction arrows	Continuous	0.25	7
C-SSWR-LIFT-FM	Force main Lift Station	Continuous	0.25	6
C-SSWR-DEVC-FM	Force main ARVs	Continuous	0.25	6
C-SSWR-SIGN	Surface markers/signs	Continuous	0.35	70
C-SSWR-STNS-PUMP	Booster pump stations	Continuous	0.35	70
C-SSWR-TANK	Septic tanks	Continuous	0.35	70
Storm Sewer				
C-STRM-AFFF	AFFF lagoon/detention pond	Continuous	0.35	118
C-STRM-CHUT	Chutes and concrete erosion control structures	Continuous	0.35	118
C-STRM-CULV	Culverts	CULVRT	0.35	118
C-STRM-DEVC	Downspouts, flumes, oil/water separators, and flap gates	Continuous	0.35	118
C-STRM-FITT	Caps, cleanouts and other fittings	Continuous	0.25	118
C-STRM-FLOW	Flow direction arrows	Continuous	0.35	7
C-STRM-FMON	Flow monitoring station	Continuous	0.35	118
C-STRM-HWAL	Headwalls and endwalls	Continuous	0.50	118
C-STRM-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.35	7
C-STRM-INLT	Inlets (curb, surface, and catch basins)	Continuous	0.35	118

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
C-STRM-MHOL	Manholes	Continuous	0.35	118
C-STRM-POND	Retention ponds, lagoons, watersheds, and basins	Continuous	0.35	118
C-STRM-ROOF	Roof drain line	Continuous	0.35	118
C-STRM-OTLT	Outline	Continuous	0.35	118
C-STRM-PIPE	Storm sewer piping	STRAF	0.35	118
C-STRM-SERV-PIPE	Storm sewer service piping	Continuous	0.35	118
C-STRM-PIPE-UNKN	Piping unknown	HIDDEN	0.25	118
C-STRM-SIGN	Surface markers/signs	Continuous	0.35	118
C-STRM-STNS-PUMP	Pump stations	Continuous	0.35	118
C-STRM-STRC	Storm drain structure	Continuous	0.25	118
C-STRM-TRCH	Storm Trench	HIDDEN	0.25	118
Survey				
C-SURV-DATA	Survey data (benchmarks and horizontal control points or monuments)	Continuous	0.35	1
C-SURV-IDEN	Survey, baseline, and control line annotation	Continuous	0.35	1
C-SURV-LINE	Survey, baseline, and control lines	DASHED	0.35	77
Taxiways				
C-TAXI-CNTR	Centerlines	CENTER	0.25	7
C-TAXI-CNTR-IDEN	Centerline annotation	Continuous	0.35	1
C-TAXI-CNTR-MRKG	Centerline markings	Continuous	0.25	7
C-TAXI-EDGE	Edge markings	Continuous	0.35	77
C-TAXI-HOLD	Holding lines	Continuous	0.35	1
C-TAXI-IDEN	Taxiway - annotation	Continuous	0.35	1
C-TAXI-MRKG-DIRS	taxiway directional signs markings	Continuous	0.25	6
C-TAXI-MRKG-HINT-	Taxiway intersection holding marking	Continuous	0.25	6
C-TAXI-MRKG-HLDS	taxiway holding sing markings	Continuous	0.25	6
C-TAXI-MRKG-NOMV	Taxiway non movement area marking	Continuous	0.25	6
C-TAXI-MRKG-PCLS	taxiway permanent closure markings	Continuous	0.25	6
C-TAXI-MRKG-POSN	taxiway position markings	Continuous	0.25	6
C-TAXI-MRKG-SHLD-	Taxiway shoulder transverse stripes	Continuous	0.25	6
C-TAXI-MRKG-TCLS	taxiway temporary closure markings	Continuous	0.25	6
C-TAXI-MRKG-THLD	taxiway holding line markings	Continuous	0.25	6
C-TAXI-MRKG-TLOC	taxiway location markings	Continuous	0.25	6
C-TAXI-OTLN	Taxiway - outlines	Continuous	0.35	727
C-TAXI-OTLN-INTS	Taxiway intersection	Continuous	0.25	4
C-TAXI-SHLD	Shoulders with annotation	Continuous	0.35	1
C-TAXI-SIGN-	Airfield signs on the taxiway	Continuous	0.25	4

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
C-TAXI-SIGN-BRSA	RSA Runway approach sign	Continuous	0.25	4
C-TAXI-SIGN-CRGO	Taxiway Cargo facility signs	Continuous	0.25	4
C-TAXI-SIGN-FBOP	Taxiway FBO Facility signs	Continuous	0.25	4
C-TAXI-SIGN-FUEL	Taxiway Fuel Facility signs	Continuous	0.25	4
C-TAXI-SIGN-HILS	Taxiway Hold Instrument Landing System sings	Continuous	0.25	4
C-TAXI-SIGN-HRAP	Taxiway Hold runway approach sings	Continuous	0.25	4
C-TAXI-SIGN-INFO	Taxiway information sings	Continuous	0.25	4
C-TAXI-SIGN-MILT	Taxiway Military sings	Continuous	0.25	4
C-TAXI-SIGN-NOEN	Taxiway No Entry sings	Continuous	0.25	4
C-TAXI-SIGN-ODST	Taxiway Out of bound destination sings	Continuous	0.25	4
C-TAXI-SIGN-PSGR	Passenger sings	Continuous	0.25	4
C-TAXI-SIGN-TDIR	Taxiway direction sings	Continuous	0.25	4
C-TAXI-SIGN-TEND	Taxiway end sings	Continuous	0.25	4
C-TAXI-SIGN-TERM	Terminal sings	Continuous	0.25	4
C-TAXI-SIGN-TLOC	Taxiway location sings	Continuous	0.25	4
Topography				
C-TOPO-BNDY-EXTR	Surface exterior boundary	Continuous	0.18	70
C-TOPO-BNDY-INTR	Surface interior boundary	DASHED	0.18	7
C-TOPO-BKLN	Breaklines	DASHDOT	0.50	7
C-TOPO-COOR-IDEN	Coordinate grid text annotation	Continuous	0.35	124
C-TOPO-COOR-LALO	Latitude and longitude grid ticks	Continuous	0.25	70
C-TOPO-COOR-STAT	State Plane coordinate ticks	Continuous	0.25	70
C-TOPO-COOR-UTM~	UTM coordinate ticks	Continuous	0.25	70
C-TOPO-DTMO	DTM obscure area boundary	Continuous	0.35	1
C-TOPO-DTMP	DTM points	Continuous	0.35	1
C-TOPO-DTMT	DTM triangles	Continuous	0.35	14
C-TOPO-MAJR	Major contours	Continuous	0.35	1
C-TOPO-MAJR-IDEN	Major contours - annotation	Continuous	0.35	1
C-TOPO-MINR	Minor contours	Continuous	0.25	70
C-TOPO-MINR-IDEN	Minor contours - annotation	Continuous	0.25	70
C-TOPO-SHAP	Application generated shapes/lines	Continuous	0.25	7
C-TOPO-SHOR	Shorelines, land features, and references	Continuous	0.35	77
C-TOPO-SLOP-FILL	Cut/fill slopes	Continuous	0.35	1
C-TOPO-SLOP-IDEN	Cut/fill slope, top/toe slope annotation	Continuous	0.35	1
C-TOPO-SLOP-TOPT	Top/toe slopes	Continuous	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
C-TOPO-SOUN	Soundings and overbanks	Continuous	0.18	7
C-TOPO-SPOT	Spot elevations	Continuous	0.35	1
C-TOPO-SURF-PERI	Surface perimeter	Continuous	0.18	70
C-TOPO-SURF-PONT	Surface feature points	Continuous	0.25	7
C-TOPO-SURF-VOID	Surface void region	Continuous	0.18	7
C-TOPO-WATR	Water level reference (LWRP, after-grading LWRP, SWL, etc.)	DASHEDX2	0.50	7
Airfield Traffic Areas				
C-TRAF-IDEN	Airfield traffic area annotation	Continuous	0.35	1
C-TRAF-TYPA	Type A traffic area	DASHDOT	0.50	77
C-TRAF-TYPB	Type B traffic area	DIVIDE	0.50	77
C-TRAF-TYPC	Type C traffic area	DOT	0.50	77
Water Supply				
C-WATR-DEVC	Backflow preventers and ARVs	Continuous	0.35	5
C-WATR-FITT	Caps, cleanouts, crosses, tees, reducers and other fittings	Continuous	0.25	5
C-WATR-HYDT	Fire Hydrants	Continuous	0.35	5
C-WATR-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.35	7
C-WATR-PIPE	Main domestic water piping	WATER_LINE	0.35	5
C-WATR-MHOL	Manholes	Continuous	0.35	5
C-WATR-METR	Meters	Continuous	0.35	5
C-WATR-NPW~-HYDT	Non-potable hydrants/flushing hydrants	Continuous	0.35	190
C-WATR-NPW~-PIPE	Non-potable water piping	NONPOT	0.35	190
C-WATR-SERV-PIPE	Domestic water service piping	Continuous	0.35	5
C-WATR-SIGN	Surface markers/signs	Continuous	0.35	5
C-WATR-STNS-PUMP	Booster pump stations	Continuous	0.35	5
C-WATR-STNS-REDC	Pressure reducing stations	Continuous	0.35	5
C-WATR-TANK	Water storage tanks	Continuous	0.35	5
C-WATR-VALV	Valves and Valve Boxes	Continuous	0.25	5
C-WATR-PITS-VALT	Valve pits/vaults	Continuous	0.35	5
C-WATR-WELL	Water well houses	Continuous	0.35	5
Wetlands				
C-WETL-BOGS	Bogs	Continuous	0.35	1
C-WETL-FENS	Fens	Continuous	0.35	1
C-WETL-IDEN	Wetland annotation	Continuous	0.35	1
C-WETL-MRSH	Fresh water marshes	Continuous	0.35	193
C-WETL-MRSH-SALT	Tidal saltwater marshes	Continuous	0.35	193

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
C-WETL-MRSH-TIDL	Tidal freshwater marsh	Continuous	0.35	193
C-WETL-PCSN	Pocosins	Continuous	0.35	1
C-WETL-PHOL	Vernal pools, playas, prairie potholes, wet meadows, and wet prairies	Continuous	0.35	1
C-WETL-RPRN	Riparian forested wetlands	Continuous	0.35	193
C-WETL-SLGH	Sloughs	Continuous	0.35	193
C-WETL-SWMP	Swamps	Continuous	0.35	193
Elevations				
C-ELEV-IDEN	Component identification numbers	Continuous	0.35	1
C-ELEV-OTLN	Outlines	Continuous	0.35	1
C-ELEV-PATT	Textures and hatch patterns	Continuous	0.18	252
C-ELEV-SIGN	Signage	Continuous	0.35	7
Sections				
C-SECT-IDEN	Component identification numbers	Continuous	0.35	1
C-SECT-MBND	Material beyond section cut	Continuous	0.18	7
C-SECT-MCUT	Cuts through road surfaces, buildings, structures, fence lines, etc.	Continuous	0.35	7
C-SECT-PATT	Textures and hatch patterns	Continuous	0.18	252
Details				
C-DETL-GRPH	Graphics, gridlines, non-text items	Continuous	0.35	7
Landscape				
Irrigation System				
L-IRRG-COVR	Irrigation coverage, spray distribution patterns	Continuous	0.18	120
L-IRRG-EQPM	Equipment (e.g., controllers, valves, RPBPs, etc.)	Continuous	0.35	120
L-IRRG-HEAD	Irrigation heads, bubblers, and drip irrigation emitters	Continuous	0.25	120
L-IRRG-IDEN	Annotation	Continuous	0.35	1
L-IRRG-PIPE	Piping	LAWNSP	0.35	120
L-IRRG-SPKL	Sprinklers	Continuous	0.35	120
Plant and Landscape Material				
L-PLNT-BEDS	Planting beds (perennial and annual beds)	Continuous	0.35	1
L-PLNT-BUSH	Bushes and shrubs (e.g., evergreen, deciduous, etc.)	Continuous	0.50	85
L-PLNT-BUSH-LINE	Bush and shrub line	Continuous	0.50	85
L-PLNT-CTNR	Containers or planters	Continuous	0.25	7
L-PLNT-GCVR	Groundcover and vines	Continuous	0.35	160
L-PLNT-IDEN	Annotation	Continuous	0.35	1
L-PLNT-MLCH	Mulches - organic and inorganic	Continuous	0.25	70
L-PLNT-PLNT	Planting plants (e.g., ornamental annuals and perennials)	Continuous	0.50	85

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
L-PLNT-SHAD	Shadow areas	Continuous	0.18	7
L-PLNT-SPRG	Sprigs	Continuous	0.25	70
L-PLNT-TREE	Trees (e.g., evergreen, deciduous, etc.)	Continuous	0.50	85
L-PLNT-TREE-LINE	Tree line	TREEL	0.50	85
L-PLNT-TURF	Lawn areas (turfing limits)	Continuous	0.50	25
Site Improvements				
L-SITE-BRDG	Bridges (pedestrian)	Continuous	0.35	14
L-SITE-DECK	Decks	Continuous	0.35	25
L-SITE-FENC	Fencing	FENCE	0.35	1
L-SITE-FURN	Furnishings	Continuous	0.50	77
L-SITE-IDEN	Annotation	Continuous	0.35	1
L-SITE-PLAY	Play structures	Continuous	0.35	1
L-SITE-POOL	Pools and spas	Continuous	0.35	193
L-SITE-ROCK	Boulders and cobble	Continuous	0.25	7
L-SITE-RTWL	Retaining walls	Continuous	0.50	77
L-SITE-SPRT	Sports fields	Continuous	0.35	1
L-SITE-SWLK	Sidewalks and steps	Continuous	0.35	7
Detail Information				
L-DETL-GRPH	Graphics, gridlines, non-text items	Continuous	0.35	7
Structural				
Access				
S-ACCS-ADIT	Adits in galleries and passages	Continuous	0.35	124
S-ACCS-CHAM	Chambers	Continuous	0.35	14
S-ACCS-EVTR	Elevators	Continuous	0.35	50
S-ACCS-GLRY	Galleries, cross overs, trenches, etc.	Continuous	0.35	34
S-ACCS-HTCH	Hatches	Continuous	0.25	34
S-ACCS-LADD	Ladders and ladder safety devices	Continuous	0.35	193
S-ACCS-MHOL	Manholes	Continuous	0.35	85
S-ACCS-MISC	Miscellaneous access	Continuous	0.35	85
S-ACCS-STRS	Stairs	Continuous	0.35	3
S-ACCS-STRS-FRMG	Stair framing	Continuous	0.35	137
S-ACCS-TUNL	Tunnels	Continuous	0.35	124
Armor				
S-ARMR-CRNR	Corner protection, corner cap casting	Continuous	0.25	135
S-ARMR-LINR	Protective liner (used for walls, culverts, etc.)	Continuous	0.25	124

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
S-ARMR-MISC	Miscellaneous armor	Continuous	0.25	135
S-ARMR-WALL	Wall armor	Continuous	0.25	135
Beams				
S-BEAM-CNTR	Beam centerlines	CENTER	0.25	154
S-BEAM-PRIM	Continuous beam or primary beam of two-way beam system	Continuous	0.50	5
S-BEAM-RBAR	Beam rebar	Continuous	0.70	7
S-BEAM-SECD	Girders or secondary beams of two-way beam system	Continuous	0.35	5
Bracing				
S-BRCG-DIA~	Diagonal bracing	Continuous	0.35	214
S-BRCG-HORZ	Horizontal bracing	Continuous	0.35	214
S-BRCG-VERT	Vertical bracing	Continuous	0.35	64
Bridges				
S-BRDG-ABUT	Abutments	Continuous	0.50	85
S-BRDG-ABUT-RBAR	Abutment rebar	Continuous	0.70	7
S-BRDG-BEAR	Bridge bearing	Continuous	0.35	82
S-BRDG-BEAR-CNTR	Bridge bearing centerlines	CENTER	0.25	154
S-BRDG-BENT	Bent cap	Continuous	0.35	70
S-BRDG-BENT-CNTR	Centerline of bents	CENTER	0.25	154
S-BRDG-BENT-RBAR	Bent cap rebar	Continuous	0.70	7
S-BRDG-CURB	Curbs/sidewalks on structure	Continuous	0.35	1
S-BRDG-DIAP	Diaphragms	Continuous	0.35	7
S-BRDG-DIAP-RBAR	Diaphragm rebar	Continuous	0.70	7
S-BRDG-DRNS	Drains	Continuous	0.25	14
S-BRDG-FENC	Fencing rails, fabric, supports, and gates	Continuous	0.25	70
S-BRDG-FEND	Fenders	Continuous	0.35	64
S-BRDG-GIRD	Girders	Continuous	0.35	127
S-BRDG-GIRD-CNTR	Girder centerline	CENTER	0.25	154
S-BRDG-HEAD	Headers	Continuous	0.35	82
S-BRDG-PIER	Piers	Continuous	0.50	85
S-BRDG-STRG	Stringers	Continuous	0.35	5
Columns				
S-COLS-CNTR	Column centerlines/working lines	CENTER	0.25	71
S-COLS-POST	Short columns	Continuous	0.35	7
S-COLS-PRIM	Primary columns	Continuous	0.35	70
S-COLS-RBAR	Column rebar	Continuous	0.70	7
S-COLS-SECD	Secondary columns	Continuous	0.35	7

Level/Layer Naming		Graphic Defaults		
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	RGB Value
Decking				
S-DECK-BRDG	Bridge deck	Continuous	0.35	14
S-DECK-BRDG-RBAR	Bridge deck rebar	Continuous	0.70	7
S-DECK-FLOR	Floor deck	Continuous	0.25	7
S-DECK-FLOR-OPNG	Floor deck openings	DASHED	0.25	7
S-DECK-RBAR	Deck rebar	Continuous	0.70	7
S-DECK-ROOF	Roof deck	Continuous	0.25	251
S-DECK-ROOF-OPNG	Roof deck openings	Continuous	0.25	7
Equipment Pads and Foundations				
S-PADS-EQPM	Equipment pads	Continuous	0.35	124
Erosion Control				
S-EROS-BARR	Vapor/capillary water barriers	Continuous	0.25	1
S-EROS-GABN	Gabions	Continuous	0.25	1
S-EROS-PVMT	Slope paving	Continuous	0.25	1
S-EROS-RRAP	Riprap, stone protection, jetties, breakwaters	Continuous	0.25	25
Fasteners & Connections				
S-FSTN-ABLT	Anchor bolts	Continuous	0.25	34
S-FSTN-MISC	Fasteners and connections (non-specific)	Continuous	0.25	1
S-FSTN-PL~~	Connection plates (shear plates, gusset plates, etc.	Continuous	0.25	1
Foundation				
S-FNDN-ANCH	Anchor piles, blocks, strands, deadmen, soil/rock anchors	Continuous	0.35	124
S-FNDN-BLRD	Bollards, bollard foundations	Continuous	0.35	124
S-FNDN-CNTR	Foundation centerlines	CENTER	0.25	252
S-FNDN-DRNS	Foundation drainage features and objects	Continuous	0.25	1
S-FNDN-FTNG	Footings	Continuous	0.35	124
S-FNDN-FTNG-RBAR	Footing rebar	Continuous	0.70	7
S-FNDN-GRBM	Grade beams	Continuous	0.50	500
S-FNDN-PCAP	Pile caps	Continuous	0.35	500
S-FNDN-PEDS	Foundation pedestals/pads	Continuous	0.35	7
S-FNDN-PIER	Piers, drilled shafts, caissons	Continuous	0.50	7
S-FNDN-PILE	Piles	Continuous	0.35	71
S-FNDN-PL~~	Column base plates	Continuous	0.25	1
S-FNDN-RIBS	Ribbed mat foundation	Continuous	0.35	500
S-FNDN-TRMT	Foundation treatment (grouting)	Continuous	0.35	252

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
S-FNDN-TUNL	Service tunnel/duct banks	Continuous	0.35	124
Gates				
S-GATE-ANCH	Gate anchorages	Continuous	0.25	34
S-GATE-ANCH-DEAD	Dead man anchorage	Continuous	0.25	34
S-GATE-ARMS	Arm	Continuous	0.35	214
S-GATE-AXIS	Gate axis and centerlines	CENTER	0.25	154
S-GATE-BLKH	Bulkhead	Continuous	0.35	7
S-GATE-BLKH-NDLB	Bulkhead needles beam	Continuous	0.35	5
S-GATE-BLKH-NDLS	Bulkhead needles	Continuous	0.35	1
S-GATE-CONN	Gate connects, links	Continuous	0.35	34
S-GATE-DIA~	Diagonals, gussets, sleeve nut	Continuous	0.35	1
S-GATE-DIA~-CHAN	Diagonal channels	Continuous	0.35	1
S-GATE-DIA~-GUST	Diagonal gusset plate	Continuous	0.35	1
S-GATE-DIA~-SUPT	Diagonal gusset plate support	Continuous	0.35	1
S-GATE-DIAP	Diaphragms	Continuous	0.35	7
S-GATE-FEND	Gate fenders	Continuous	0.35	1
S-GATE-FLNG	Flange	Continuous	0.35	7
S-GATE-FLNG-DNST	Downstream flange	Continuous	0.35	7
S-GATE-FLNG-GIRD	Girder flange	Continuous	0.35	34
S-GATE-FLNG-UPST	Upstream flange	Continuous	0.35	7
S-GATE-GIRD-WEB~	Girder web plates	Continuous	0.35	193
S-GATE-GUDG	Gudgeon	Continuous	0.35	1
S-GATE-GUDG-HOOD	Gudgeon hood	Continuous	0.35	1
S-GATE-GUDG-HUB~	Gudgeon hub	Continuous	0.35	1
S-GATE-GUDG-PIN~	Gudgeon pin	Continuous	0.35	1
S-GATE-GUDG-STIF	Gudgeon (hood) stiffener	Continuous	0.35	1
S-GATE-GUDG-SUPT	Gudgeon (pin) support	Continuous	0.35	1
S-GATE-HORZ	Horizontal rolled shapes	Continuous	0.35	5
S-GATE-ICST	Intercostals	Continuous	0.35	50
S-GATE-JACK	Gate jack	Continuous	0.35	7
S-GATE-JACK-HORZ	Gate jack - horizontal	Continuous	0.35	7
S-GATE-JACK-VERT	Gate jack - vertical	Continuous	0.35	7
S-GATE-LIFT	Lifting mechanism	Continuous	0.35	1
S-GATE-LTCH	Latching device	Continuous	0.35	7
S-GATE-LTCH-BOTM	Latching device - bottom	Continuous	0.35	7

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
S-GATE-LTCH-TOP~	Latching device - top	Continuous	0.35	7
S-GATE-LUBE	Lubrication system	Continuous	0.25	7
S-GATE-MISC	Gates incidental to structure	Continuous	0.25	7
S-GATE-MITR-ASSY	Miter guide assembly	Continuous	0.35	1
S-GATE-PIN~	Gate pins	Continuous	0.25	34
S-GATE-PNTL	Pintle ball, bushing & base	Continuous	0.35	34
S-GATE-PNTL-CAST	Pintle casting	Continuous	0.35	10
S-GATE-QOIN	Quoin	Continuous	0.35	1
S-GATE-QOIN-FLNG	Quoin flange	Continuous	0.35	1
S-GATE-QOIN-MITR	Quion, miter	Continuous	0.35	1
S-GATE-QOIN-STIF	Quoin stiffener	Continuous	0.35	1
S-GATE-QOIN-TRST	Quoin thrust plate	Continuous	0.35	1
S-GATE-QOIN-WALL	Quoin, wall	Continuous	0.35	1
S-GATE-QOIN-WEB~	Quoin web	Continuous	0.35	1
S-GATE-RAIL	Rails and guides	Continuous	0.35	1
S-GATE-SEAL	Gate seal	Continuous	0.35	25
S-GATE-SEAL-HORZ	Gate seal - horizontal	Continuous	0.35	25
S-GATE-SEAL-VERT	Gate seal - vertical	Continuous	0.35	25
S-GATE-SHOE	Gate shoe	Continuous	0.35	1
S-GATE-SKIN	Skin plates	Continuous	0.25	1
S-GATE-STIF	Stiffener	Continuous	0.35	7
S-GATE-STIF-LONG	Stiffener - longitudinal	Continuous	0.35	7
S-GATE-STIF-TRAN	Stiffener - transverse	Continuous	0.35	7
S-GATE-STOP	Stoplogs	Continuous	0.35	124
S-GATE-THBL	Thimble	Continuous	0.25	1
S-GATE-TRST	Thrust plate	Continuous	0.25	124
S-GATE-TRUN	Trunion	Continuous	0.35	1
S-GATE-VALV	Valves (general shape)	Continuous	0.35	120
S-GATE-VERT	Rolled vertical shapes	Continuous	0.35	64
S-GATE-WALK	Walkway	Continuous	0.35	50
S-GATE-WALK-FRMG	Walkway - framing	Continuous	0.35	50
S-GATE-WALK-GRTG	Walkway - grating	Continuous	0.35	50
S-GATE-WALK-SUPT	Walkway - support	Continuous	0.35	50
S-GATE-WEB~	Web	Continuous	0.35	193
Grade Lines				
S-GRLN-SURF-E	Existing ground	DASHEDX2	0.25	252

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
S-GRLN-SURF-N	Finished grade	Continuous	0.35	34
S-WATR-SURF	Water surface	Continuous	0.25	214
Grids				
S-GRID-HORZ	Grid lines (horizontal)	CENTERX2	0.18	1
S-GRID-HORZ-IDEN	Column I.D. tags (horizontal)	Continuous	0.25	1
S-GRID-VERT	Grid lines (vertical)	CENTERX2	0.18	1
S-GRID-VERT-IDEN	Column I.D. tags (vertical)	Continuous	0.25	1
Hydraulic Features				
S-HYDR-AXIS	Axis of structure	DASHDOT	0.18	120
S-HYDR-BAFL	Baffle blocks, splash pads	Continuous	0.35	124
S-HYDR-BASN	Stilling and settling basins	Continuous	0.35	124
S-HYDR-CHAN	Channel (Does not include earthen structures)	Continuous	0.35	124
S-HYDR-COFF	Cofferdam	Continuous	0.35	124
S-HYDR-COND	Diversionary/bypass conduits and culverts	Continuous	0.35	124
S-HYDR-DAM~	Dam	Continuous	0.35	124
S-HYDR-FISH	Fish ladder or passage	Continuous	0.35	124
S-HYDR-FLUM	Flume	Continuous	0.35	124
S-HYDR-INTK	Intake, outlet	Continuous	0.35	124
S-HYDR-NOVR	Non-overflow structures	Continuous	0.35	124
S-HYDR-PENS	Penstock outline and features	Continuous	0.35	124
S-HYDR-STRC-POWR	Powerhouse	Continuous	0.35	1
S-HYDR-SWAY	Spillway	Continuous	0.35	124
S-HYDR-WEIR	Weirs and sluiceways	Continuous	0.35	124
Joints				
S-JNTS-CNTJ	Construction/lift joints	Continuous	0.25	124
S-JNTS-CTLJ	Control/contraction joints (saw cut	Continuous	0.25	124
S-JNTS-EXPJ	Expansion joints, joint materials (e.g., felt	Continuous	0.25	1
S-JNTS-STUC	Stucco joints	Continuous	0.25	1
S-JNTS-WTRS	Waterstops	Continuous	0.25	1
Joists				
S-JOIS-BRGX	Bridging	Continuous	0.35	160
S-JOIS-GIRD	Joist girders	Continuous	0.50	124
S-JOIS-PERI	Perimeter channel or rim joist	Continuous	0.35	1
S-JOIS-PRIM	Primary joists	Continuous	0.35	50
S-JOIS-SECD	Secondary joists	Continuous	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
S-JOIS-TRIM	Partial length or trimmer floor joist	Continuous	0.35	1
Fabrications (metal or other specialty)				
S-FABR-EMBD	Embedded metals (framing around openings)	Continuous	0.35	252
S-FABR-HOIS	Hoist structures	Continuous	0.25	1
S-FABR-HOOK	Line hooks, lifting hooks, check posts etc.	Continuous	0.25	1
S-FABR-MOOR	Mooring bits, chocks, rings	Continuous	0.35	1
S-FABR-PL~~	Plates	Continuous	0.35	1
S-FABR-TRSH	Trash racks, intake screens	Continuous	0.35	1
Pipes and Culverts				
S-PIPE-CULV	Precast/manufactured culverts	Continuous	0.35	96
Platforms				
S-PLAT-FRMG	Platform frame/stringers	Continuous	0.35	5
S-PLAT-GRTG	Platform grating (add a second minor group to indicate platform # or elev)	Continuous	0.25	7
S-PLAT-WALK	Platform walkway	Continuous	0.35	7
Reinforcement				
S-REIN-RBAR	Steel reinforcing, welded wire fabric	Continuous	0.70	7
S-REIN-TEND-HORZ	Horizontal Tendons	Continuous	0.50	7
S-REIN-TEND-VERT	Vertical Tendons	Continuous	0.50	7
Reference Outlines				
S-OTLN-BLDG	Building outline	DIVIDE	0.25	7
S-OTLN-FLOR	Floor outline	DIVIDE	0.25	7
S-OTLN-OPNG	Openings	DIVIDE	0.25	7
S-OTLN-ROOF	Roof	DIVIDE	0.25	7
S-OTLN-STRC	Misc. structures	DIVIDE	0.25	7
Safety Features				
S-SAFE-FENC	Fencing rails, fabric, supports, and gates	Continuous	0.25	70
S-SAFE-GRAL	Guardrails	Continuous	0.35	10
S-SAFE-HRAL	Handrails, railings	Continuous	0.25	70
S-SAFE-PRPT	Parapet/jersey barrier	Continuous	0.50	70
S-SAFE-PRPT-RBAR	Parapet/jersey barrier rebar	Continuous	0.70	7
S-SAFE-WATR	Waterway safety barriers	Continuous	0.35	70
Signs				
S-SIGN-BUOY	Sign buoys	Continuous	0.35	1
S-SIGN-EXTN	Extrusions	Continuous	0.35	5
S-SIGN-FRMG	Framing and connections	Continuous	0.35	70

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
S-SIGN-GAGE	Staff gages	Continuous	0.35	25
S-SIGN-PANL	Sign panels	Continuous	0.35	25
S-SIGN-SPRT	Supports	Continuous	0.35	7
S-SIGN-TEXT	Signage text	Continuous	0.35	1
Slabs				
S-SLAB-APPR	Approach slab	Continuous	0.35	7
S-SLAB-APPR-RBAR	Approach slab rebar	Continuous	0.70	7
S-SLAB-EDGE	Edge of slab	Continuous	0.35	7
S-SLAB-OPNG	Openings (and depressions)	DASHED	0.25	7
S-SLAB-RBAR	Slab rebar	Continuous	0.70	7
S-SLAB-SECD	Second pour, slab cap	Continuous	0.35	7
S-SLAB-SILL	Sill	Continuous	0.35	7
Stiffeners				
S-STIF-LONG	Stiffeners - longitudinal	Continuous	0.35	70
S-STIF-TRAV	Stiffeners - transverse	Continuous	0.35	70
Trusses				
S-TRUS-BRGX	Truss bridging	Continuous	0.35	160
S-TRUS-PRIM	Primary trusses	Continuous	0.50	77
S-TRUS-SECD	Secondary trusses	Continuous	0.35	1
Walls				
S-WALL-ABUT	Abutments	Continuous	0.35	85
S-WALL-CELL	Cell	Continuous	0.35	1
S-WALL-COFF	Cutoff wall	Continuous	0.35	34
S-WALL-CURT	Curtain/breast wall	Continuous	0.35	7
S-WALL-FULL	Wall going to the top of the structure	Continuous	0.35	70
S-WALL-GARD	Guard/guide walls	Continuous	0.35	7
S-WALL-LOAD	Load bearing walls	Continuous	0.35	70
S-WALL-MONO	Wall monoliths	Continuous	0.35	70
S-WALL-MSE~	Mechanically stabilized earth (MSE) wall	Continuous	0.35	7
S-WALL-NONL	Non-load bearing walls	Continuous	0.35	7
S-WALL-PCST	Pre-cast concrete walls	Continuous	0.35	1
S-WALL-PRHT	Wall that does not reach to the top of the structure	Continuous	0.35	7
S-WALL-RBAR	Wall rebar	Continuous	0.70	7
S-WALL-RTWL	Retaining wall (flood walls, wingwalls, etc.)	Continuous	0.35	7
S-WALL-SHEA	Shear walls	Continuous	0.35	1
S-WALL-STUD	Stud walls	Continuous	0.35	124

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
Waterway Specialties				
S-WWAY-DLPH	Dolphins (associated with but not part of bridges, locks and guidewalls)	Continuous	0.35	124
S-WWAY-FEND	Fenders	Continuous	0.35	1
S-WWAY-MOOR	Mooring cells	Continuous	0.35	1
Sections				
S-SECT-IDEN	Component identification numbers	Continuous	0.35	1
S-SECT-MBND	Material beyond section cut	Continuous	0.18	7
S-SECT-MCUT	Material cut by section	Continuous	0.35	7
S-SECT-PATT	Textures and hatch patterns	Continuous	0.18	252
Details				
S-DETL-GRPH	Graphics, gridlines, non-text items	Continuous	0.35	7
Architectural				
Area Information				
A-AREA-IDEN	Room numbers, tenant identifications, area calculations	Continuous	0.35	1
A-AREA-LINE	Architectural area calculation boundary lines	Continuous	0.50	77
A-AREA-OCCP	Occupant or employee names	Continuous	0.35	1
A-AREA-PATT	Area cross hatching	Continuous	0.18	252
Barrier				
A-BARR-AIR~	Air barrier	Continuous	0.25	7
Ceiling Information				
A-CLNG-ACCS	Access panels	Continuous	0.35	1
A-CLNG-CTLJ	Ceiling control joints	Continuous	0.35	1
A-CLNG-GRID	Ceiling grid	Continuous	0.25	7
A-CLNG-LITE	Specialty ceiling lights not shown on the Electrical Lighting Plan	Continuous	0.50	77
A-CLNG-OPNG	Openings, ceiling/roof penetrations (see also A-FLOR-OVHD in Floor Plan model file)	Continuous	0.18	252
A-CLNG-PATT	Ceiling patterns	Continuous	0.18	252
A-CLNG-SFFT	Soffits	Continuous	0.25	1
A-CLNG-SUSP	Suspended elements, ceiling mounted specialties (e.g., clocks, fans, etc.)	Continuous	0.18	7
A-CLNG-TEES	Main tees	Continuous	0.18	7
Columns				
A-COLS-ENCL	Column enclosures/fire protection	Continuous	0.50	77
Doors				
A-DOOR-FULL	Full height (to ceiling) door: swing and leaf	Continuous	0.25	70
A-DOOR-IDEN	Door number and symbol, hardware group, etc.	Continuous	0.25	70
A-DOOR-PRHT	Partial height door: swing and leaf	Continuous	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
A-DOOR-SYMB	Miscellaneous door symbols (e.g., overhead, bifold, pocket, etc.)	Continuous	0.25	7
Equipment				
A-EQPM-ACCS	Equipment access	Continuous	0.35	1
A-EQPM-FIXD	Fixed equipment	Continuous	0.50	77
A-EQPM-IDEN	Equipment identification numbers	Continuous	0.35	1
A-EQPM-MOVE	Moveable equipment	Continuous	0.35	1
A-EQPM-OVHD	Overhead, ceiling mounted, or suspended equipment	Continuous	0.35	1
Floor Information				
A-FLOR-CSWK	Casework (manufactured cabinets)	Continuous	0.25	70
A-FLOR-EVTR	Elevator cars and equipment	Continuous	0.35	1
A-FLOR-FIXT	Plumbing fixtures	Continuous	0.25	252
A-FLOR-FTPT	Floor/building footprint	Continuous	0.70	77
A-FLOR-HRAL	Stair and balcony handrails, guard rails	Continuous	0.25	7
A-FLOR-IDEN	Room name, space identification text	Continuous	0.35	70
A-FLOR-LEVL	Level changes, shafts, ramps, pits, breaks in construction, and depressions	Continuous	0.35	1
A-FLOR-NUMB	Room/space identification number and symbol	Continuous	0.35	70
A-FLOR-OVHD	Overhead items (overhangs, etc.)	DASHED	0.18	252
A-FLOR-PATT	Paving, tile, carpet patterns	Continuous	0.18	252
A-FLOR-PERI	Room perimeter shape (interior walls)	Continuous	0.35	1
A-FLOR-RAIS	Access (raised) flooring	Continuous	0.25	70
A-FLOR-SIGN	Signage	Continuous	0.25	7
A-FLOR-SPCL	Architectural specialties (e.g., toilet room accessories, display cases)	Continuous	0.25	70
A-FLOR-STRS	Stair risers/treads, escalators, ladders	Continuous	0.25	7
A-FLOR-TPTN	Toilet partitions	Continuous	0.25	7
A-FLOR-WDWK	Architectural woodwork (field built cabinets and counters)	Continuous	0.25	70
Windows				
A-GLAZ-FULL	Full height glazed walls and partitions (see A-WALL-CURT for curtain walls)	Continuous	0.25	7
A-GLAZ-IDEN	Window number and symbol	Continuous	0.35	70
A-GLAZ-PRHT	Windows and partial height glazed partitions	Continuous	0.25	7
A-GLAZ-SILL	Window sills	Continuous	0.18	7
Roof Information				
A-ROOF-CRKT	Crickets flow arrows flow info	Continuous	0.25	7
A-ROOF-DRNS	Roof drains	Continuous	0.25	7
A-ROOF-EXPJ	Expansion joints	Continuous	0.18	7
A-ROOF-GUTR	Roof internal gutters	Continuous	0.18	252
A-ROOF-HRAL	Stair handrails, nosings, guard rails	Continuous	0.18	7

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	RGB Value
A-ROOF-LEVL	Level changes	Continuous	0.18	7
A-ROOF-OTLN	Roof perimeter/edge, roof geometry	Continuous	0.35	1
A-ROOF-PATT	Roof surface patterns, hatching	Continuous	0.18	252
A-ROOF-PRPT	Parapet walls and wall caps	Continuous	0.35	1
A-ROOF-SKLT	Skylights	DASHED	0.18	252
A-ROOF-SPCL	Roof specialties, accessories, access hatches, dormers	Continuous	0.25	70
A-ROOF-STRS	Stair risers/treads, ladders	Continuous	0.18	7
A-ROOF-WALK	Roof walkways	Continuous	0.25	70
Walls				
A-WALL-CAVI	Cavity wall lines	Continuous	0.18	252
A-WALL-CNTR	Wall centerlines	CENTER	0.25	7
A-WALL-CURT	Curtain wall mullions and glass	Continuous	0.25	7
A-WALL-FIRE	Fire wall designators (patterning)	Continuous	0.35	1
A-WALL-FULL-EXTR	Exterior full height walls	Continuous	0.35	1
A-WALL-FULL-INTR	Interior full height walls	Continuous	0.25	70
A-WALL-HEAD	Door and window headers	Continuous	0.25	7
A-WALL-IDEN	Wall identification/type text or tags	Continuous	0.35	70
A-WALL-JAMB	Door and window jambs	Continuous	0.25	7
A-WALL-MESH	Mesh or wire wall	Continuous	0.18	7
A-WALL-MOVE	Moveable walls/partitions	Continuous	0.18	7
A-WALL-OPNG-LVRS	Louvers	Continuous	0.25	7
A-WALL-PATT	Wall insulation, hatching, and fill	Continuous	0.18	252
A-WALL-PRHT	Partial height walls (do not appear on Reflected Ceiling Plan)	Continuous	0.25	7
A-WALL-SPCL	Wall-hung/attached specialties (e.g., fixtures, grab bars (incl. handicap), telephone booths)	Continuous	0.25	7
Elevations				
A-ELEV-IDEN	Component identification numbers	Continuous	0.35	1
A-ELEV-OTLN	Outlines	Continuous	0.50	77
A-ELEV-PATT	Textures and hatch patterns	Continuous	0.18	252
Sections				
A-SECT-IDEN	Component identification numbers	Continuous	0.35	1
A-SECT-MBND	Material beyond section cut	Continuous	0.18	7
A-SECT-MCUT	Material cut by section	Continuous	0.35	7
A-SECT-PATT	Textures and hatch patterns	Continuous	0.18	252
Detail Information				
A-DETL-GRPH	Graphics, gridlines, non-text items	Continuous	0.35	7

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
Interiors				
Carpet/Carpet Tile				
I-CRPT-ROLL-ACNT	Carpet (roll goods) - accent color	Continuous	0.35	7
I-CRPT-ROLL-FILD	Carpet (roll goods) - field color	Continuous	0.35	1
I-CRPT-TILE-ACN1	Carpet tile - accent color	Continuous	0.35	1
I-CRPT-TILE-ACN2	Carpet tile - accent color	Continuous	0.35	1
I-CRPT-TILE-FILD	Carpet tile - field color	Continuous	0.35	1
Equipment				
I-EQPM-ACCS	Equipment access	DASHED	0.18	252
I-EQPM-CHLD	Child development (play toys, teaching rugs, play forms)	Continuous	0.35	1
I-EQPM-COPY	Copiers, fax machines, office equipment	Continuous	0.35	1
I-EQPM-FIXD	Fixed equipment	Continuous	0.18	7
I-EQPM-IDEN	Equipment identification numbers	Continuous	0.25	7
I-EQPM-MOVE	Moveable equipment	DASHED	0.18	7
I-EQPM-OVHD	Overhead, ceiling mounted, and suspended equipment	Continuous	0.25	70
I-EQPM-STOR	Storage equipment	Continuous	0.35	1
Signage				
I-FLOR-SIGN	Signage	Continuous	0.35	1
Flooring Items and Materials				
I-FLRG-CONC	Concrete flooring	Continuous	0.35	252
I-FLRG-MATS	Entrance mat components and frames	Continuous	0.35	77
I-FLRG-STON	Stone flooring	Continuous	0.35	821
I-FLRG-TRAN	All floor thresholds and transition moldings	Continuous	0.35	7
I-FLRG-WOOD	Wood parquet tile or planks	Continuous	0.35	14
Furnishings				
I-FURN-ACCS	Accessories (vestibule matts, partitions, draperies, clocks, trash cans, lecturns, lamps, etc.)	Continuous	0.25	7
I-FURN-ADPC	Automated Data Processing Components	Continuous	0.35	1
I-FURN-ARTW	Artwork	Continuous	0.35	1
I-FURN-FLOR	Flooring (carpet, rugs, etc.)	Continuous	0.35	1
I-FURN-FREE	Free-standing furnishings (desks, beds, tables, dressers, credenzas, casegoods)	Continuous	0.35	1
I-FURN-GRID	Planning grid/modular outline	Continuous	0.50	77
I-FURN-IDEN	Furniture code identification	Continuous	0.25	70
I-FURN-PLNT	Plants	Continuous	0.25	70
I-FURN-SEAT	Seating (chairs, sofas, etc.)	Continuous	0.35	1
I-FURN-STOR	File cabinets, high density storage, shelving, storage cabinets	Continuous	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
Monolithic (Poured or Broadcast) Flooring				
I-MONO-SRFL-ACNT	Seamless resinous flooring - accent color	Continuous	0.35	205
I-MONO-SRFL-FILD	Seamless resinous flooring - field color	Continuous	0.35	1
I-MONO-TERR-ACN1	Terrazzo - accent color	Continuous	0.35	64
I-MONO-TERR-ACN2	Terrazzo - accent color	Continuous	0.35	1
I-MONO-TERR-FILD	Terrazzo - field color	Continuous	0.35	1
Resilient Flooring				
I-SHTP-ACNT	Sheet product (vinyl/rubber/linoleum) - accent color	Continuous	0.35	1
I-SHTP-FILD	Sheet product (vinyl/rubber/linoleum) - field color	Continuous	0.35	1
System Furniture				
I-SYST-FURN	Furniture	Continuous	0.35	1
I-SYST-IDEN	Code identification components	Continuous	0.25	7
I-SYST-IDPL	Code identification panels	Continuous	0.25	7
I-SYST-LITE	Lighting components	Continuous	0.50	77
I-SYST-PATT	Patterns	Continuous	0.18	252
I-SYST-PNLS	Panels	Continuous	0.35	1
I-SYST-POWR	Power, communication components	Continuous	0.50	77
I-SYST-STOR	Storage components	Continuous	0.35	1
I-SYST-WALL	System furniture partition walls	Continuous	0.35	1
I-SYST-WKSF	Work surface components	Continuous	0.35	1
Tile				
I-TILE-CERM-ACNT	Ceramic mosaic tile - accent color	Continuous	0.35	821
I-TILE-CERM-FILD	Ceramic mosaic tile - field color	Continuous	0.35	1
I-TILE-LINO-ACNT	Linoleum tile - accent color	Continuous	0.35	1
I-TILE-LINO-FILD	Linoleum tile - field color	Continuous	0.35	1
I-TILE-PORC-ACN1	Porcelain tile - accent color	Continuous	0.35	1
I-TILE-PORC-ACN2	Porcelain tile - accent color	Continuous	0.35	1
I-TILE-PORC-FILD	Porcelain tile - field color	Continuous	0.35	1
I-TILE-QUAR-ACNT	Quarry tile - accent color	Continuous	0.35	1
I-TILE-QUAR-FILD	Quarry tile - field color	Continuous	0.35	34
I-TILE-RUBB-ACNT	Rubber tile - accent color	Continuous	0.35	1
I-TILE-RUBB-FILD	Rubber tile - field color	Continuous	0.35	1
I-TILE-TERR-ACN1	Terrazzo tile - accent color	Continuous	0.35	64
I-TILE-TERR-ACN2	Terrazzo tile - accent color	Continuous	0.35	1
I-TILE-TERR-ACN3	Terrazzo tile - accent color	Continuous	0.35	1
I-TILE-TERR-FILD	Terrazzo tile - field color	Continuous	0.35	1

Level/Layer Naming		Graphic Defaults			
AIA Format	**Level/Layer Description**		**Line Style**	**Line Width (mm)**	**RGB Value**
I-TILE-VNYL-ACN1	Vinyl or Vinyl composition tile - accent color		Continuous	0.35	205
I-TILE-VNYL-ACN2	Vinyl or Vinyl composition tile - accent color		Continuous	0.35	631
I-TILE-VNYL-FILD	Vinyl or Vinyl composition tile - field color		Continuous	0.35	1
Elevations					
I-ELEV-IDEN	Component identification numbers		Continuous	0.25	7
I-ELEV-OTLN	Outlines		Continuous	0.50	77
I-ELEV-PATT	Textures and hatch patterns		Continuous	0.18	7
Detail Information					
I-DETL-GRPH	Graphics, gridlines, non-text items		Continuous	0.35	7
Fire Protection					
Aqueous Film Forming Foam System					
F-AFFF-EQPM	Equipment		Continuous	0.35	7
F-AFFF-PIPE	Piping		Continuous	0.35	7
CO2 Sprinkler System					
F-CO2S-EQPM	Equipment		Continuous	0.35	7
F-CO2S-PIPE	CO2 piping or CO2 discharge nozzle piping		Continuous	0.35	7
Control Panels					
F-CTRL-PANL	Control panels		Continuous	0.50	25
Floor Information					
F-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)		Continuous	0.25	70
F-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)		Continuous	0.25	70
Halon System					
F-HALN-EQPM	Equipment		Continuous	0.35	7
F-HALN-PIPE	Piping		Continuous	0.35	7
Inert Gas					
F-IGAS-EQPM	Equipment		Continuous	0.35	7
F-IGAS-PIPE	Piping		Continuous	0.35	7
Means of Egress Lighting					
F-LITE-EMER	Emergency fixtures		Continuous	0.50	25
F-LITE-EXIT	Exit fixtures		Continuous	0.50	205
Egress Requirements					
F-LSFT-EGRE	Egress requirements designator		Continuous	0.35	1
F-LSFT-OCCP	Occupant load for egress capacity		Continuous	0.35	1
F-LSFT-TRVL	Maximum travel distances		Continuous	0.35	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
Fire Protection System				
F-PROT-ALRM-INDC	Indicating appliances	Continuous	0.50	85
F-PROT-ALRM-MANL	Manual fire alarm pull stations	Continuous	0.50	25
F-PROT-EXTI	Fire extinguishers	Continuous	0.35	1
F-PROT-EXTI-CABN	Fire extinguisher cabinets	Continuous	0.35	1
F-PROT-HOSE	Fire hoses	Continuous	0.35	1
F-PROT-HOSE-CABN	Fire hose cabinets	Continuous	0.35	1
F-PROT-RATE-DOOR	Door fire ratings	Continuous	0.50	77
F-PROT-RATE-WALL	Wall fire ratings	Continuous	0.50	77
F-PROT-SMOK	Smoke detectors and heat sensors	Continuous	0.50	25
Smoke/Pressurization Control				
F-SMOK-DMPR	Dampers	Continuous	0.35	14
Sprinkler System				
F-SPKL-CLHD	Sprinkler - ceiling heads	Continuous	0.35	7
F-SPKL-OTHD	Sprinkler - other heads	Continuous	0.35	7
F-SPKL-PIPE	Sprinkler piping	FIRE	0.50	7
F-SPKL-STAN	Standpipe system	Continuous	0.35	7
Water Supply and Distribution				
F-WATR-HYDT	Hydrants and connections	Continuous	0.35	7
F-WATR-PIPE	Piping	FIRE	0.50	7
F-WATR-PUMP	Fire pumps	Continuous	0.35	7
Detail Information				
F-DETL-GRPH	Graphics, gridlines, non-text items	Continuous	0.35	7
Plumbing				
Domestic Water System				
P-DOMW-CPIP	Cold water piping	CLDWTR	0.50	77
P-DOMW-EQPM	Hot and cold water equipment	Continuous	0.70	77
P-DOMW-EQPM-ACCS	Equipment access doors	Continuous	0.35	77
P-DOMW-FPIP	Domestic filtered water piping	Continuous	0.50	77
P-DOMW-HPIP	Hot water piping	HWS	0.50	77
P-DOMW-RISR	Hot and cold water risers	DASHED	0.25	77
Floor Information				
P-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)	Continuous	0.25	70
P-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	Continuous	0.25	70

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
Graywater System				
P-GRAY-EQPM	Equipment	Continuous	0.70	120
P-GRAY-PIPE	Graywater piping	GRAY	0.50	120
Laboratory Gas Piping				
P-LGAS-DH2O	Distilled water piping	DSTWTR	0.50	1
P-LGAS-DIS~	Deionized water piping	DIOWTR	0.50	1
P-LGAS-EQPM	Equipment	Continuous	0.70	1
P-LGAS-H2~~	Hydrogen piping	HYDRGN	0.50	1
P-LGAS-HE~~	Helium piping	HELIUM	0.50	1
P-LGAS-NITG	Nitrogen piping	NITROG	0.50	1
P-LGAS-OXYG	Pure O2 piping	OXYGEN	0.50	1
Medical/Dental Gas Piping				
P-MDGS-CAIR	Compressed air	CMPAIR	0.50	7
P-MDGS-EQPM	Equipment	Continuous	0.70	1
P-MDGS-NITG	Nitrogen piping	NITROG	0.50	1
P-MDGS-NOXG	Nitrous oxide piping	NITOXI	0.50	1
P-MDGS-OXYG	Pure O2 piping	OXYGEN	0.50	1
P-MDGS-SAIR	Scavenge air	Continuous	0.50	1
P-MDGS-VACU	Medical vacuum piping	VACAIR	0.50	7
Penetrations				
P-FLOR-PENE	Floor penetrations	DASHED	0.25	70
P-ROOF-PENE	Roof penetrations	DASHED	0.25	7
P-WALL-PENE	Wall penetrations	DASHED	0.25	1
Sanitary Sewer				
P-SSWR-CNDS	Condensate piping	Continuous	0.50	144
P-SSWR-EQPM	Equipment (e.g., sand/oil/water separators)	Continuous	0.70	70
P-SSWR-DRNS	Floor drains, sinks, and cleanouts	Continuous	0.35	70
P-SSWR-PIPE	Piping	SSWAF	0.50	70
P-SSWR-RISR	Sanitary risers	DASHED	0.50	70
P-SSWR-VENT	Vent piping	VENT	0.50	70
Storm Drainage System				
P-STRM-PIPE	Storm drain piping	STRAF	0.50	70
P-STRM-DRNS	Roof drains	Continuous	0.50	70
P-STRM-RISR	Storm drain risers	DASHED	0.50	70
Diagram Information				

Level/Layer Naming		Graphic Defaults			
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**		**RGB Value**
P-DIAG-GRPH	Graphics, gridlines, non-text items	Continuous	0.35		7
Detail Information					
P-DETL-GRPH	Graphics, gridlines, non-text items	Continuous	0.35		7
Mechanical					
Industrial Waste Piping					
M-ACID-EQPM	Acid, alkaline, and oil waste equipment	Continuous	0.35		1
M-ACID-PIPE	Acid, alkaline, and oil waste piping	ACIDWS	0.50		1
M-ACID-VENT	Acid, alkaline, and oil waste vent piping	DASHED	0.50		1
Anti-Freeze					
M-AFRZ-EQPM	Anti-freeze equipment	Continuous	0.35		1
M-AFRZ-SPLY-PIPE	Anti-freeze supply piping	Continuous	0.50		1
M-AFRZ-WAST-PIPE	Anti-freeze waste piping	Continuous	0.50		1
Brine System					
M-BRIN-EQPM	Brine system equipment	Continuous	0.35		70
M-BRIN-RETN-PIPE	Brine system return piping	BRINER	0.50		70
M-BRIN-SPLY-PIPE	Brine system supply piping	BRINES	0.50		70
Chemical Treatment System					
M-CHEM-EQPM	Chemical treatment system equipment	Continuous	0.35		1
M-CHEM-RETN-PIPE	Chemical treatment system return piping	Continuous	0.50		1
M-CHEM-SPLY-PIPE	Chemical treatment system supply piping	Continuous	0.50		1
Compressed Air					
M-CMPA-EQPM	Equipment	Continuous	0.70		7
M-CMPA-PIPE	Piping	CMPAIR	0.50		7
Condenser Water System					
M-CNDW-EQPM	Condenser water system equipment	Continuous	0.35		70
M-CNDW-RETN-PIPE	Condenser water system return piping	CONDWR	0.50		70
M-CNDW-SPLY-PIPE	Condenser water system supply piping	CONDWS	0.50		70
Controls					
M-CONT-THER	Thermostats	Continuous	0.25		7
M-CONT-WIRE	Low voltage wiring	DASHED	0.25		7
Chilled Water System					
M-CWTR-CNDS	Condensate piping	CDRNAF	0.50		144
M-CWTR-EQPM	Chilled water equipment	Continuous	0.35		7
M-CWTR-RETN-PIPE	Chilled water return piping	CWR	0.50		7

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
M-CWTR-SPLY-PIPE	Chilled water supply piping	CWS	0.50	7
Culvert Valves				
M-CVAL-BASE	Culvert valve machinery base	Continuous	0.35	1
M-CVAL-BEAM	Culvert valve beams	Continuous	0.35	1
M-CVAL-CYLD	Culvert valve machinery cylinder (outline not for details)	Continuous	0.35	1
M-CVAL-SEAL	Culvert valve seals	Continuous	0.35	70
M-CVAL-SKIN	Culvert valve skin plate	Continuous	0.35	7
M-CVAL-STIF	Stiffener plates, angles, etc.	Continuous	0.35	77
M-CVAL-TRUN	Culvert valve trunnion beam	Continuous	0.35	1
Dual Temperature System				
M-DUAL-EQPM	Dual temperature system equipment	Continuous	0.35	1
M-DUAL-RETN-PIPE	Dual temperature system return piping	DTR	0.50	1
M-DUAL-SPLY-PIPE	Dual temperature system supply piping	DTS	0.50	1
Dust and Fume Collection Systems				
M-DUST-DUCT	Dust and fume ductwork	Continuous	0.50	205
M-DUST-DUCT-CNTR	Dust and fume ductwork centerlines	CENTER	0.25	7
M-DUST-EQPM	Dust and fume equipment	Continuous	0.35	205
M-DUST-GRIL	Dust and fume grilles	Continuous	0.35	205
Exhaust Air System				
M-EXHS-DUCT	Exhaust ductwork	Continuous	0.50	85
M-EXHS-DUCT-CNTR	Exhaust ductwork centerlines	CENTER	0.25	7
M-EXHS-EQPM	Exhaust equipment	Continuous	0.35	85
M-EXHS-GRIL	Grilles	Continuous	0.35	85
Floor Information				
M-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)	Continuous	0.25	70
M-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	Continuous	0.25	70
Fuel Systems				
M-FUEL-DIES-RETN	Diesel fuel return piping	Continuous	0.50	1
M-FUEL-DIES-SPLY	Diesel fuel supply piping	Continuous	0.50	1
M-FUEL-DIES-VENT	Diesel fuel vent piping	Continuous	0.50	1
M-FUEL-EQPM	Equipment	Continuous	0.70	1
M-FUEL-GGEP-LQPG	Liquid petroleum gas	LIQPET	0.50	1
M-FUEL-OGEP-RETN	Return oil piping	FUELOR	0.50	1
M-FUEL-OGEP-SPLY	Supply oil piping	FUELOS	0.50	1
M-FUEL-OGEP-VENT	Oil piping vent	FUELOV	0.50	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
Glycol System				
M-GLYC-EQPM	Glycol system equipment	Continuous	0.35	500
M-GLYC-RETN-PIPE	Glycol system return piping	GHR	0.50	500
M-GLYC-SPLY-PIPE	Glycol system supply piping	GHS	0.50	500
Geothermal Heat Pump System				
M-GTHP-EQPM	Geothermal heat pump system equipment	Continuous	0.35	104
M-GTHP-RETN-PIPE	Geothermal heat pump system return piping	Continuous	0.50	104
M-GTHP-SPLY-PIPE	Geothermal heat pump system supply piping	Continuous	0.50	104
Hydraulic Control Systems (Hydraulic Fluid)				
M-HCSF-CYLD	Hydraulic cylinders	Continuous	0.35	1
M-HCSF-CYLD-PSTN	Hydraulic cylinder pistons	Continuous	0.35	1
M-HCSF-CYLD-WEAR	Wear rings	Continuous	0.35	1
M-HCSF-EQPM	Hydraulic system equipment	Continuous	0.35	1
M-HCSF-FTTG	Hose and pipe fittings	Continuous	0.35	1
M-HCSF-HOSE	Hydraulic hoses	Continuous	0.35	1
M-HCSF-MOTR	Hydraulic motors and actuators	Continuous	0.35	1
M-HCSF-OTLN	Outlines of machinery, etc. in the vicinity of the hydraulic components	Continuous	0.35	1
M-HCSF-PUMP	Hydraulic pumps and pump motors	Continuous	0.35	1
M-HCSF-RETN-PIPE	Hydraulic system return piping	Continuous	0.50	1
M-HCSF-ROOM	Floor, walls, etc. that hydraulic system attaches to	Continuous	0.35	1
M-HCSF-SCHM-MISC	Miscellaneous schematic figures (i.e., common location lines)	Continuous	0.35	1
M-HCSF-SUPT	Pipe supports, hangers, etc.	Continuous	0.35	1
M-HCSF-SPLY-PIPE	Hydraulic system supply piping	Continuous	0.50	1
M-HCSF-VALV	Hydraulic valves	Continuous	0.35	1
M-HCSF-VALV-CONT	Hydraulic directional control valves	Continuous	0.35	1
M-HCSF-VALV-FLOW	Flow control valves, check valves, etc.	Continuous	0.35	1
M-HCSF-VALV-PRES	Pressure control valves: relief valves, counterbalance valves, etc.	Continuous	0.35	1
M-HCSF-VALV-SOFF	Hydraulic shutoff type valves (ball, gate, etc.)	Continuous	0.35	1
Hydraulic Control Systems (Water)				
M-HCSW-DEVC	Stilling wells, rigid anchors, anchor guides, rectifiers, reducers, markers, meters, regulators, and tank	Continuous	0.35	7
M-HCSW-EQPM-ACCS	Equipment access doors	Continuous	0.25	7
M-HCSW-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.25	1
M-HCSW-PUMP	Pump station equipment	Continuous	0.35	7
M-HCSW-PUMP-PIPE	Pump piping (includes fittings and valves)	Continuous	0.50	7
High Temperature/Chilled Water System				

AIA Format	Level/Layer Description	Line Style	Line Width (mm)	RGB Value
Level/Layer Naming		**Graphic Defaults**		
M-HTCW-CWTR-MAIN	Main chilled water piping	Continuous	0.35	7
M-HTCW-CWTR-PLNT	Chilled water plant	Continuous	0.35	7
M-HTCW-CWTR-SERV	Chilled water service piping	Continuous	0.25	7
M-HTCW-DEVC	Rigid anchors, anchor guides, rectifiers, reducers, markers, pumps, regulators, tanks, and valves	Continuous	0.35	1
M-HTCW-HWTR-MAIN	Main high temperature piping	Continuous	0.35	7
M-HTCW-HWTR-PLNT	High temperature water plant	Continuous	0.35	7
M-HTCW-HWTR-SERV	High temperature service piping	Continuous	0.25	7
M-HTCW-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
M-HTCW-JBOX	Junction boxes, manholes, handholes, test boxes	Continuous	0.25	1
M-HTCW-LWTR-MAIN	Main low temperature piping	Continuous	0.35	1
M-HTCW-LWTR-SERV	Low temperature service piping	Continuous	0.25	1
M-HTCW-METR	Meters	Continuous	0.35	1
M-HTCW-RETN-PIPE	Return for all HTCW lines	Continuous	0.18	1
M-HTCW-STEM-MAIN	Main steam piping	Continuous	0.35	144
M-HTCW-STEM-SERV	Steam service piping	Continuous	0.25	144
M-HTCW-STNS-PUMP	Pump stations	Continuous	0.35	1
M-HTCW-VALT	Valve pits/vaults, steam pits	Continuous	0.25	1
HVAC System				
M-HVAC-ACCS	Equipment access doors	Continuous	0.25	70
M-HVAC-CDFF	Ceiling diffusers, registers, and grilles	Continuous	0.35	1
M-HVAC-DMPR	Fire, smoke, volume dampers	Continuous	0.25	7
M-HVAC-EQPM	Equipment (non-powered)	Continuous	0.35	1
M-HVAC-EQPM-EFAN	Equipment with electric fans or motors	Continuous	0.35	1
M-HVAC-EQPM-EPIP	Equipment with piping and electricity	Continuous	0.35	1
M-HVAC-EQPM-FLOR	Equipment - floor mounted	Continuous	0.35	1
M-HVAC-EQPM-SUSP	Equipment - suspended	Continuous	0.35	1
M-HVAC-FDFF	Floor diffusers, registers, and grilles	Continuous	0.35	193
M-HVAC-IDEN	Duct sizes and pressure classes	Continuous	0.35	1
M-HVAC-RDFF	Return air diffusers	Continuous	0.35	25
M-HVAC-RETN	Return ductwork	Continuous	0.50	25
M-HVAC-RETN-CNTR	Return ductwork centerlines	CENTER	0.25	7

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	RGB Value
M-HVAC-ROOF	Roof mounted HVAC equipment	Continuous	0.35	1
M-HVAC-SPLY	Supply ductwork	Continuous	0.50	77
M-HVAC-SPLY-CNTR	Supply ductwork centerlines	CENTER	0.25	7
M-HVAC-SPLY-HDUC	Supply ductwork - high pressure	Continuous	0.50	77
M-HVAC-SPLY-LDUC	Supply ductwork - low pressure	Continuous	0.50	77
M-HVAC-TAGS	Diffuser/register/grille tags and air flow arrows	Continuous	0.35	1
M-HVAC-WDFF	Wall diffusers, registers, and grilles	Continuous	0.35	1
Hot Water Heating System				
M-HWTR-EQPM	Hot water heating system equipment	Continuous	0.35	1
M-HWTR-RETN-PIPE	Hot water heating system return piping	MTHWR	0.50	1
M-HWTR-SPLY-PIPE	Hot water heating system supply piping	MTHWS	0.50	1
Insulating (Transformer) Oil System				
M-INSL-EQPM	Insulating oil equipment	Continuous	0.35	1
M-INSL-RETN-PIPE	Insulating oil return piping	Continuous	0.50	1
M-INSL-SPLY-PIPE	Insulating oil supply piping	Continuous	0.50	1
Lubrication Oil				
M-LUBE-EQPM	Lubrication oil equipment	Continuous	0.35	1
M-LUBE-RETN-PIPE	Lubrication oil return piping	Continuous	0.50	1
M-LUBE-SPLY-PIPE	Lubrication oil supply piping	Continuous	0.50	1
Machine Design				
M-MACH-AXLE	Shafts and axles	Continuous	0.35	1
M-MACH-BASE	Machinery bases	Continuous	0.35	1
M-MACH-BEAR	Bearings and couplings	Continuous	0.35	1
M-MACH-BELT	Wire rope, chains, and belts	Continuous	0.35	14
M-MACH-BSHG	Bushings, wear plates, shims, and spacers	Continuous	0.35	1
M-MACH-CLEV	Clevises	Continuous	0.35	14
M-MACH-COMP	Miscellaneous machinery parts and components	Continuous	0.35	1
M-MACH-COVR	Machinery covers, cover plates, and guarding	Continuous	0.35	77
M-MACH-FSTN	Fastenters, nuts, and bolts	Continuous	0.35	1
M-MACH-GEAR	Gears	Continuous	0.35	1
M-MACH-KEYS	Keys and keeper plates	Continuous	0.35	14
M-MACH-LROT	Large rotating machinery (turbine and pump outlines)	Continuous	0.35	1
M-MACH-MOTR	Machinery motors	Continuous	0.35	1
M-MACH-PINS	Pins	Continuous	0.35	14
M-MACH-PULL	Pulleys, drums, and sheaves	Continuous	0.35	14
M-MACH-RAIL	Rails (e.g., crane rails, rail hoots, splice plates, etc.)	Continuous	0.35	14

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
M-MACH-ROLL	Rollers and wheels	Continuous	0.35	14
M-MACH-ROLL-TRAK	Roller tracks	Continuous	0.35	14
M-MACH-SEAL	Seals	Continuous	0.35	14
M-MACH-SHOE	Sliding shoes, skids, etc.	Continuous	0.35	14
M-MACH-SUPT	Support brackets	Continuous	0.35	1
M-MACH-SPRG	Springs	Continuous	0.35	14
Mixed Air System				
M-MAIR-DUCT	Mixed air ductwork	Continuous	0.50	7
M-MAIR-DUCT-CNTR	Mixed air ductwork centerlines	CENTER	0.25	7
M-MAIR-EQPM	Mixed air equipment	Continuous	0.35	7
Material Handling Equipment				
M-MATL-CRAN	Cranes	Continuous	0.35	1
M-MATL-CRAN-BOOM	Crane boom	Continuous	0.35	1
M-MATL-HOIS	Hoists	Continuous	0.35	1
M-MATL-HOOK	Hooks, eyes, and other end attachments	Continuous	0.35	1
M-MATL-LIFT	Miscellaneous lifting equipment	Continuous	0.35	1
M-MATL-WIRE	Wire rope, chains, and other hoisting medium	Continuous	0.35	1
Miter Gates				
M-MITR-BASE	Miter gate machinery base	Continuous	0.35	1
M-MITR-CLEV	Clevises	Continuous	0.35	14
M-MITR-CRNG	Cardanic ring	Continuous	0.35	70
M-MITR-CYLD	Miter gate machinery cylinder (outline not for details)	Continuous	0.35	1
M-MITR-TRUN	Miter gate machinery trunnion	Continuous	0.35	7
Makeup Air System				
M-MKUP-DUCT	Makeup air ductwork	Continuous	0.50	1
M-MKUP-DUCT-CNTR	Makeup air ductwork centerlines	CENTER	0.25	7
M-MKUP-EQPM	Makeup air equipment	Continuous	0.35	1
M-MKUP-GRIL	Makeup air grilles	Continuous	0.35	1
Natural Gas System				
M-NGAS-EQPM	Natural gas equipment	Continuous	0.35	1
M-NGAS-PIPE	Natural gas piping	GAS_LINE	0.35	1
Penetrations				
M-FLOR-PENE	Floor penetrations	DASHED	0.25	70
M-ROOF-PENE	Roof penetrations	DASHED	0.25	7
M-WALL-PENE	Wall penetrations	DASHED	0.25	1

Level/Layer Naming		Graphic Defaults			
AIA Format	**Level/Layer Description**		Line Style	Line Width (mm)	**RGB Value**
Process Piping					
M-PROC-EQPM	Process equipment		Continuous	0.35	1
M-PROC-RETN-PIPE	Process return piping		Continuous	0.50	1
M-PROC-SPLY-PIPE	Process supply piping		Continuous	0.50	1
Relief Air System					
M-RAIR-DUCT	Relief air ductwork		Continuous	0.50	7
M-RAIR-DUCT-CNTR	Relief air ductwork centerlines		CENTER	0.25	7
M-RAIR-EQPM	Relief air equipment		Continuous	0.35	7
M-RAIR-GRIL	Relief air grilles		Continuous	0.35	7
Energy Recovery System					
M-RCOV-EQPM	Energy recovery system equipment		Continuous	0.35	205
M-RCOV-RETN-PIPE	Energy recovery system return piping		Continuous	0.50	205
M-RCOV-SPLY-PIPE	Energy recovery system supply piping		Continuous	0.50	205
Refrigeration System					
M-REFG-DISC	Refrigeration system discharge		REFRD	0.50	1
M-REFG-EQPM	Refrigeration system equipment		Continuous	0.35	1
M-REFG-RETN-PIPE	Refrigeration system return piping		REFRS	0.50	1
M-REFG-SPLY-PIPE	Refrigeration system supply piping		REFRL	0.50	1
Raw Water Piping					
M-RWTR-EQPM	Raw water equipment		Continuous	0.35	1
M-RWTR-RETN-PIPE	Raw water return piping		Continuous	0.50	1
M-RWTR-SPLY-PIPE	Raw water supply piping		Continuous	0.50	1
Steam System					
M-STEM-BLBD	Boiler blow down piping		BOILBD	0.50	144
M-STEM-CNDS	Condensate piping		CDRNAF	0.50	144
M-STEM-EQPM	Steam system equipment		Continuous	0.35	144
M-STEM-HPIP	High pressure steam piping		STEAMH	0.50	144
M-STEM-LPIP	Low pressure steam piping		STEAML	0.50	144
M-STEM-MPIP	Medium pressure steam piping		STEAMM	0.50	144
Transfer Air System					
M-TAIR-DUCT	Transfer air ductwork		Continuous	0.50	96
M-TAIR-DUCT-CNTR	Transfer air ductwork centerlines		CENTER	0.25	7
M-TAIR-EQPM	Transfer air equipment		Continuous	0.35	96
Diagram Information					
M-DIAG-GRPH	Graphics, gridlines, non-text items		Continuous	0.35	7

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
Elevations				
M-ELEV-IDEN	Component identification numbers	Continuous	0.35	1
M-ELEV-OTLN	Outlines	Continuous	0.35	1
M-ELEV-PATT	Textures and hatch patterns	Continuous	0.18	252
Sections				
M-SECT-IDEN	Component identification numbers	Continuous	0.35	1
M-SECT-MBND	Material beyond section cut	Continuous	0.18	7
M-SECT-MCUT	Material cut by section	Continuous	0.50	77
M-SECT-PATT	Textures and hatch patterns	Continuous	0.18	252
Detail Information				
M-DETL-GRPH	Graphics, gridlines, non-text items	Continuous	0.35	7
Electrical				
Airfields				
E-AFLD-CIRC-CTRL	Control and monitoring circuits	Continuous	0.50	205
E-AFLD-CIRC-IDEN	Circuit identifier tags, symbol modifier, and text	Continuous	0.35	1
E-AFLD-CIRC-MULT	Multiple circuits	Continuous	0.50	205
E-AFLD-CIRC-SERS	Series circuits	Continuous	0.50	205
E-AFLD-DBNK	Ductbanks	EUDUCN	0.50	205
E-AFLD-DEVC	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	Continuous	0.50	205
E-AFLD-FAA-MHLE	FAA Airfield Manhole	Continuous	0.25	4
E-AFLD-FAA-MHLE-TEXT	FAA Airfield Manhole identifier tags, symbol modifier, and text	Continuous	0.25	4
E-AFLD-JBOX	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	Continuous	0.50	205
E-AFLD-LITE-APPR	Approach lights	Continuous	0.50	205
E-AFLD-LITE-DIST	Distance and arresting gear markers	Continuous	0.50	205
E-AFLD-LITE-LANE	Hoverlane, taxilane, and helipad lights	Continuous	0.50	205
E-AFLD-LITE-OBST	Obstruction lights	Continuous	0.50	205
E-AFLD-LITE-RUNW	Runway lights	Continuous	0.50	205
E-AFLD-LITE-SIGN	Taxiway guidance signs	Continuous	0.50	205
E-AFLD-LITE-TAXI	Taxiway lights	Continuous	0.50	205
E-AFLD-LITE-THRS	Threshold lights	Continuous	0.50	205
E-AFLD-VALT	Airfield lighting vaults	Continuous	0.50	205
E-ELEC-DBNK	Electrical ductbank	EUDUCN	0.25	1
E-ELEC-DEVC	Electrical Device	Electric_Line	0.25	1
E-ELEC-**FAA~**-CABL	Electrical FAA cable	FAA_LINE	0.25	1
E-ELEC-FAA~-DBNK	FAA Airfield Ductbank	Electric_Line	0.25	1

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
E-ELEC-**FAA~**-JBOX	FAA electrical junction boxes, pull boxes, manholes, handholes, pedestals, splices	Continuous	0.25	1
E-ELEC-JBOX	Electrical junction boxes, pull boxes, manholes, handholes, pedestals, splices	Continuous	0.25	1
E-ELEC-POLE	ElectricalLight poles	Continuous	0.25	1
E-ELEC-PRIM-OVHD	Overhead_electrical utility lines	Continuous	0.25	1
Alarm System				
E-ALRM-EQPM	Alarm system equipment	Continuous	0.50	1
E-ALRM-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
Beacons				
E-BCNS-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
E-BCNS-MISC	Miscellaneous navaids - windcones and beacons	Continuous	0.50	205
E-BCNS-STRB	Strobe beacons	Continuous	0.50	205
Bell System				
E-BELL-EQPM	Bell system equipment	Continuous	0.50	1
E-BELL-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
Cable System				
E-CABL-COAX	Coax cable	DASHED	0.50	1
E-CABL-FIBR	Fiber optics cable	FIBER OPTIC	0.50	1
E-CABL-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
E-CABL-MULT	Multi-conductor cable	Continuous	0.50	1
E-CABL-TRAY	Cable trays and wireways	WIREWY	0.50	1
Cathodic Protection System				
E-CATH-ANOD	Sacrificial anode system	Continuous	0.50	252
E-CATH-CURR	Impress current system	Continuous	0.50	252
E-CATH-IDEN	Identifier tags, symbol modifier, and text	Continuous	0.35	1
E-CATH-TEST	Test stations	Continuous	0.50	252
Cable TV System				
E-CATV-EQPM	Cable TV system equipment	CABLTV	0.50	1
E-CATV-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
Closed-Circuit Television System				
E-CCTV-EQPM	Closed-circuit television system equipment	CCTV	0.50	1
E-CCTV-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
Clock System				
E-CLOK-EQPM	Clock system equipment	Continuous	0.50	1
E-CLOK-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
Communications				

Level/Layer Naming		Graphic Defaults			
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**		**RGB Value**
E-COMM-ANTN	Antennae	Continuous	0.50		1
E-COMM-CIRC	Circuits	Continuous	0.50		1
E-COMM-CNMB	Communication circuit numbers (e.g., panel/circuit number, wire/conduit size)	Continuous	0.35		1
E-COMM-EQPM	Other communications distribution equipment	Continuous	0.50		1
E-COMM-JBOX	Communication junction boxes, pull boxes, handholes, pedestals, and splices	Continuous	0.50		1
E-COMM-MHOL	Manholes	Continuous	0.50		1
E-COMM-OVHD	Overhead communications/telephone lines	COMARN	0.50		1
E-COMM-OVHD-IDEN	Identifier tags, symbol modifier and text	Continuous	0.35		1
E-COMM-POLE	Poles	Continuous	0.50		1
E-COMM-POLE-GUYS	Guying equipment	Continuous	0.50		1
E-COMM-POLE-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35		1
E-COMM-UGND	Underground communications/telephone lines	COMUGN	0.50		1
E-COMM-UGND-IDEN	Identifier tags, symbol modifier and text	Continuous	0.35		1
Central Dictation System					
E-DICT-EQPM	Central dictation system equipment	Continuous	0.50		1
E-DICT-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35		1
Underground Ductbanks (to be used when multiple systems are in one ductbank system)					
E-DBNK-MULT	Ductbank	EUDUCN	0.50		252
E-DBNK-MULT-IDEN	Identifier tags, symbol modifier and text	Continuous	0.35		1
Energy Monitoring Control Systems					
E-EMCS-EQPM	Energy monitoring control system equipment	Continuous	0.50		252
E-EMCS-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35		1
Floor Information					
E-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)	Continuous	0.25		70
E-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	Continuous	0.25		70
Ground System					
E-GRND-CIRC	Circuits	Continuous	0.50		252
E-GRND-DIAG	Ground system diagram	Continuous	0.50		252
E-GRND-EQUI	Equipotential ground system	Continuous	0.50		252
E-GRND-REFR	Reference ground system	Continuous	0.50		252
Intercom/PA System					
E-INTC-EQPM	Intercom system equipment	Continuous	0.50		1
E-INTC-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35		1
Lighting					

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
E-LITE-CIRC	Lighting circuits (including crosslines and homeruns)	Continuous	0.50	7
E-LITE-CLNG	Ceiling mounted (surface/pendant) fixtures	Continuous	0.50	7
E-LITE-CNMB	Lighting circuit numbers (e.g., panel/circuit number, wire/conduit size)	Continuous	0.35	1
E-LITE-EMER	Emergency fixtures (outline of light (if ceiling mounted) should go on E-LITE-CLNG)	Continuous	0.50	7
E-LITE-EXIT	Exit fixtures (outline of light (if ceiling mounted) should go on E-LITE-CLNG)	Continuous	0.50	7
E-LITE-EXTR	Exterior lights	Continuous	0.50	7
E-LITE-FLOR	Floor mounted fixtures (e.g., stage)	Continuous	0.50	7
E-LITE-IDEN	Light fixture identifier tags	Continuous	0.35	1
E-LITE-JBOX	Junction boxes	Continuous	0.50	7
E-LITE-PANL	Main distribution panels, switchboards, lighting panels	Continuous	0.50	7
E-LITE-ROOF	Roof lighting	Continuous	0.50	7
E-LITE-SPCL	Special fixtures	Continuous	0.50	7
E-LITE-SWCH	Lighting contactors, photoelectric controls, low-voltage lighting controls, etc.	Continuous	0.50	7
E-LITE-WALL	Wall mounted fixtures	Continuous	0.50	7
Lightning Protection System				
E-LTNG-COND	Lightning protection conductors	Continuous	0.50	252
E-LTNG-TERM	Lightning protection terminals	Continuous	0.35	1
Nurse Call/Paging System				
E-NURS-EQPM	Nurse call/paging system equipment	Continuous	0.50	1
E-NURS-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
Power				
E-POWR-BUSW	Busways	BUSWAY	0.50	252
E-POWR-CIRC	Power circuits (including crosslines and homeruns)	Continuous	0.50	252
E-POWR-CLNG	Ceiling outlets (receptacles and switches)	Continuous	0.50	252
E-POWR-CNDT	Conduit	Continuous	0.50	252
E-POWR-CNMB	Power circuit numbers (e.g., panel/circuit number, wire/conduit size)	Continuous	0.35	1
E-POWR-DEVC	Capacitors, voltage regulators, motors, buses, grounds, and markers	Continuous	0.50	252
E-POWR-DSCO	Disconnect switches	Continuous	0.50	252
E-POWR-FEED	Feeders	Continuous	0.50	252
E-POWR-GENR	Generators and auxiliary equipment	Continuous	0.50	252
E-POWR-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
E-POWR-JBOX	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	Continuous	0.50	252
E-POWR-METR	Meters	Continuous	0.50	252
E-POWR-MOTR	Motors and utilization equipment	Continuous	0.50	252
E-POWR-PANL	Panelboards, MCC, backing boards, patch panel racks	Continuous	0.50	252
E-POWR-POLE	Power poles	Continuous	0.50	252

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	Line Style	Line Width (mm)	**RGB Value**
E-POWR-POLE-GUYS	Guying equipment	Continuous	0.50	252
E-POWR-SBST	Substation equipment	Continuous	0.50	252
E-POWR-SWBD	Switchboards	Continuous	0.50	252
E-POWR-SWCH	Fuse cutouts, motor starters, contactors, pole mounted switches, circuit breakers, reclosers, cubicle switches	Continuous	0.50	252
E-POWR-URAC	Underfloor raceways	DASHEDX2	0.50	252
E-POWR-WALL	Wall/floor outlets (receptacles and switches)	Continuous	0.50	252
E-POWR-XFMR-PADM	Pad mounted transformers	Continuous	0.50	252
E-POWR-XFMR-POLM	Pole mounted transformers	Continuous	0.50	252
Primary Electrical Cables				
E-PRIM-OVHD	Overhead electrical utility lines	EPARN	0.50	252
E-PRIM-OVHD-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
E-PRIM-UGND	Underground electrical utility lines	EPUGN	0.50	252
E-PRIM-UGND-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	77
Secondary Electrical Cables				
E-SECD-OVHD	Overhead electrical utility lines	ESARN	0.50	252
E-SECD-OVHD-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
E-SECD-UGND	Underground electrical utility lines	ESUGN	0.50	252
E-SECD-UGND-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
Security System				
E-SERT-ACCS	Access control system	Continuous	0.50	1
E-SERT-CLNG	Ceiling mounted sensors	Continuous	0.50	1
E-SERT-FLOR	Floor mounted sensors	Continuous	0.50	1
E-SERT-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
E-SERT-UNDR	Buried sensors	Continuous	0.50	1
E-SERT-WALL	Wall mounted sensors	Continuous	0.50	1
Sound System				
E-SOUN-EQPM	Sound system equipment	Continuous	0.50	1
E-SOUN-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
Special Systems				
E-SPCL-SYST	Special systems (UMCS, EMCS, etc.)	Continuous	0.50	252
E-SPCL-SYST-IDEN	Special systems (UMCS, EMCS, etc.) identifier tags, symbol modifier, and text	Continuous	0.35	1
E-SPCL-TRAF	Traffic signal system	Continuous	0.50	252
E-SPCL-TRAF-IDEN	Traffic signal identifier tags, symbol modifier, and text	Continuous	0.35	1
Other Discipline Information				

Level/Layer Naming		Graphic Defaults		
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**	**RGB Value**
E-DISC-INFO	Clearances and working space information (NEC code, etc.)	Continuous	0.25	70
Detail Information				
E-DETL-GRPH	Graphics, gridlines, non-text items	Continuous	0.35	7
Diagram Information				
E-DIAG-GRPH	Graphics, gridlines, non-text items	Continuous	0.35	7
E-DIAG-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35	1
Telecommunications				
Cable System				
T-CABL-COAX	Coax cable	DASHED	0.50	1
T-CABL-FIBR	Fiber optics cable	FIBER OPTIC	0.50	1
T-CABL-IDEN	Cable identifiers	Continuous	0.35	1
T-CABL-MULT	Multi-conductor cable	Continuous	0.50	1
T-CABL-TRAY	Cable trays and wireways	Continuous	0.50	1
Communications				
T-COMM-CIRC	Circuits	Continuous	0.50	1
T-COMM-CNMB	Circuit numbers	Continuous	0.50	1
T-COMM-EQPM	Equipment	Continuous	0.50	1
T-COMM-JBOX	Junction boxes	Continuous	0.50	1
Equipment				
T-EQPM-COMB	Distribution equipment for both copper and fiber optics	Continuous	0.50	1
T-EQPM-COPP	Distribution equipment for copper	Continuous	0.50	1
T-EQPM-FIBR	Distribution equipment for fiber optic	Continuous	0.50	1
T-EQPM-OTHR	Other telecommunications equipment	Continuous	0.50	1
T-EQPM-RELA	Relays, resistors, capacitors, and inducers	Continuous	0.50	1
Floor Information				
T-FLOR-IDEN	Room name, space identification text (copied from Archictural - Floor Plan model file)	Continuous	0.25	70
T-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	Continuous	0.25	70
Jacks				
T-COMB-JACK	Combination telephone and data/LAN jacks	Continuous	0.50	1
T-DATA-JACK	Data/LAN jacks	Continuous	0.50	1
T-PHON-JACK	Telephone jacks	Continuous	0.50	1
Other Discipline Information				
T-DISC-INFO	Information and notes for other disciplines	Continuous	0.35	7
Diagram Information				

Level/Layer Naming		Graphic Defaults			
AIA Format	**Level/Layer Description**	**Line Style**	**Line Width (mm)**		**RGB Value**
T-DIAG-GRPH	Graphics, gridlines, non-text items	Continuous	0.35		7
T-DIAG-IDEN	Identifier tags, symbol modifiers, and text	Continuous	0.35		1
Detail Information					
T-DETL-GRPH	Graphics, gridlines, non-text items	Continuous	0.35		7