MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

MEMORANDUM

TO: Distribution

FROM: Ali Logmanni, Manager
Division of Engineering
Office of Design and Construction

DATE: August 29, 2013

SUBJECT: Design Standard (DST) 2013-08, MAA CADD Standards Manual Version 4.0

Effective immediately, the following modifications shall be made to the MAA Design Standards Manual, dated January 2013:

- Remove Appendix H, CADD Standards Manual, Version 3, in its entirety and replace with the attached Appendix H, CADD Standards Manual, Version 4.

The "pdf" and "dwg" versions of standard documents referenced in the subject manual (i.e. Borders, Title Blocks, Index Sheet Examples, etc.) are available on AIRPortal Designer Tools for download.

Consultants listed herein are required to distribute this design standard to their respective subconsultants.

If you believe the attached drawings conflict with any other codes or regulations, or if you should have any questions regarding this matter, please contact the Manager, Division of Engineering at 410-859-7768.

Attachment

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Maryland Aviation Administration

Office of Design & Construction

CADD STANDARDS MANUAL

Version 4.0

August 2013

PREFACE

This standard is updated and maintained by the Maryland Aviation Administration (MAA), Office of Design and Construction, Division of Engineering. It is based on the U. S. National CAD Standard with adjustments necessary to meet MAA needs. These standards are intended to assist in the production of uniform engineering documents, and provide efficient and effective means for management and technical data control.

This standard provides:

a) Drawing practices for the preparation of architectural, engineering and space allocation drawings.

b) Definitions and examples of the types of facility drawings to be prepared by and for the MAA.

c) Guidelines for the creation of title and index sheets for drawings.

d) Numbering, coding and identification procedures for drawings, associated lists and documents referenced.

e) Practices applicable to Computer Aided Design and Drafting (CADD).

Changes from the previous version of this standard focus on:

a) Additional layer definitions required to support the needs of MAA's Runway Safety Area Program.

b) Synchronization with updates to MAA's GIS Data Standard.

c) Adherence with FAA Airports GIS Program requirements.

d) Reference to MAA's policy with regard to the handling of Sensitive Security Information (SSI).

e) Updated file and drawing naming conventions.

f) Adding attribute information to features.

g) Topological considerations for CADD data development.

This manual is a living document and MAA will update it to incorporate future engineering drawing practices. The users of this manual are encouraged to suggest revisions or additions to the manual.

CADD Standards Manual
for the Maryland Aviation Administration
Version 4.0, August 2013

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1.0 SCOPE

This manual outlines the requirements for the delivery of Computer Aided Design and Drafting (CADD) data files and associated drawings files to the Maryland Aviation Administration (MAA) by its consultants. This manual establishes standard layers, title blocks, file names, line types and other conventions to be applied to all CADD files delivered to, used by, or developed by MAA. This manual does not define design and drafting procedures for consultants to follow when developing files that are complaint with this standard, but does provide requirements that must be met in the resulting product. This manual also covers standard naming, object properties, delivery format and plotting. Standard naming and delivery format will allow for efficient storage and retrieval of files. Standard layer naming facilitates sharing of information between drawings and better control of drawing objects. Standard object properties will help provide uniform appearance to CADD drawings. Standard plot settings will help overcome problems associated with producing similar looking plots from different plotters.

This document is made up of multiple parts, the first part up to and including Section 4.0 Drawing Requirements, addresses MAA's requirements for construction drawings, installation permits, building permits, and space allocation drawings. The second part, Section 5.0 addresses MAA's requirements specific to space allocation data.

Section 6.0 presents the requirements for Electronic Deliverables.

1.1 Standard Definition

This standard prescribes general requirements for the preparation and revision of architectural, engineering and space allocation drawings that are prepared by and for the MAA.

MAA has implemented a series of standards, a spatial data repository, applications, policies, and procedures. This serves as a central catalog and repository for engineering information used by MAA. This data is used within applications as well as other MAA systems that require this type of data. It also provides a structured workflow and a means of cataloging, archiving and retrieving project documents and information.

1.2 Document Classification

This standard shall apply, but not be limited, to the following drawing types regardless of source:

a) Construction drawings for new and existing facilities
b) Installation permit drawings
c) Building permit drawings
d) Space Allocation drawings
e) Design, planning and record drawings

1.3 Manual Revisions

Where MAA CADD Standards do not contain the required detail for the work to be performed by the consultant or sub-consultant, additions or revisions to the standards shall be transmitted by the consultant or sub-consultant to the MAA Project Engineer for approval. All issued addenda will become part of the project-specific CADD standards. This manual will be subject to revision in response to changes in technology and by the incorporation of changes to support consultant requirements at MAA's discretion.

1.4 Software Requirements

The MAA requires that all CADD files be in AutoCAD DWG format, the version number to be specified by the MAA Project Engineer and selected from the Approved Software Lists provided in this section. The standards defined in this manual are specifically for AutoCAD environments. Consultants and sub-consultants that do not use AutoCAD are responsible for translating drawings into an AutoCAD DWG format prior to submittal. It is the consultant or sub-consultant's responsibility to ensure that there is no degradation of the accuracy or content of the data in this translation process.

1.4.1 Approved Software, CADD

CADD data must be delivered in an AutoCAD DWG format that is compatible with AutoCAD Version 2010 or later versions as approved by MAA. MAA's preferred format is 2012.

1.4.2 Approved Software, CADD Vertical Products

Consultants and sub-consultants may choose to use one or more of the following products that provide additional functionality for specific vertical markets, so long as the DWG drawings delivered comply with the AutoDesk version referenced in Section 1.4.1.

Autodesk Architectural Desktop	Autodesk Land Desktop	Autodesk QuickCAD
Autodesk Civil Design	Autodesk Location Services	Autodesk Raster Design
Autodesk Civil Series	Products	
Autodesk Field Survey	Autodesk Map 3D	

2.0 APPLICABLE STANDARDS AND PUBLICATIONS

When generating CADD documents the following standards and publications should be referenced for guidance.

2.1 MAA Standards & Manuals

This manual is to be used in conjunction with:

- MAA's Design Standards Manual
- MAA's GIS Data Standard, which includes a crosswalk between approved CADD and GIS layers
- MAA GIS Data Standard – Utilities Supplement
- MAA Data Quality Standard
- MAA Data Security Standard
- MAA Naming, Identification & Addressing Standard
- MAA Data Security Standard
- MAA ***AIRPortal***
    - AIRPortal provides access and reference to the most current MAA documentation.
    - The Designer's Tools Document Library provide access to the most current Standard Borders, Title Blocks and Index Sheets
    - From within the MAA internal network (intranet) the URL for AIRPortal is http://airportal
    - From the internet, the URL for AIRPortal is https://www.airportal.maa.maryland.gov

2.2 Government Documents

- NAS-SS-1000 Vol. 6 Facility Requirements for the National Airspace System
- FAA 7350.6 Location Identifiers
- FAA FSEP Facilities, Services and Equipment Profile Orders
- DOT Order 1360.6 Graphic Standards
- FAA Order 1000.15 Glossary
- FAA Order 7340.1 Contractions
- FAA AC 150/5300-16A "General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to the National Geodetic Survey", Sept. 15, 2007
- FAA AC 150/5300-17C "Standards for Using Remote Sensing Technologies in Airport Surveys", Sept. 30, 2011
- FAA AC 150/5300-18B "General Guidance and Specifications for Aeronautical Surveys: Airport Survey Data Collection and Geographic Information System Standards", May 21, 2009

2.3 Commercial Documents

- ANSI/AWS A2.4 Symbols for Welding & Nondestructive Testing
- ANSI/AWS A3.0 Welding Terms and Definitions
- ANSI B1.1 Unified Screw Threads
- ANSI/1EEE 2.16 Reference Designations for Electrical and Electronics Parts and Equipment
- ANSI/1EEE 91 Graphic Symbols for Logic Functions
- ANSI Y1.1 Abbreviations for use on Drawings and Text
- ANSI Y14.1 Drawing Sheet Size and Format
- ANSI Y14.2 Line Conventions and Lettering
  - ANSI Y14.5 Dimensioning and Tolerance
  - ANSI Y14.6 Screw Thread Representation
  - ANSI Y14.7.1 Gear Drawing Standards - Part 1 for Spur, Helical, Double Helical and Rack
  - ANSI Y14.7.2 Gear and Spline Drawing Standards Part 2 - Bevel and Hypoid Gears
  - ANSI Y14.13 Mechanical Spring Representation
- ANSI Y14.15 Electrical and Electronics Diagrams
- ANSI Y14.15 Interconnection Diagrams
- ANSI Y14.17 Fluid Power Diagrams
- ANSI Y14.26.3 Dictionary of Terms for Computer-Aided Preparation of Product Definition Data
- ANSI Y32.2 Graphic Symbols for Electrical and Electronic Diagrams
- ANSI Y32.4 Graphic Symbols for Plumbing Fixture for Diagram used in Architecture & Building Construction
- ANSI Y 32.9 Graphic Symbols for Electrical Wiring and Layout Diagrams Used in Architecture and Building Construction United States National CAD Standard, Version 5
- ASME-Y14.38M ASME Drawing & Terminology Standards

2.4 Order of Precedence

In the event of conflict between the documents referenced in sections 2.2 and 2.3 and the contents of this manual, the contents of this manual shall be considered the superseding requirement.

3.0 GENERAL

3.1 Drawing Definitions

The following sections define general A/E/C drawing types.

3.1.1 Engineering Drawings

Engineering drawings are formal representations used to convey the physical and functional end product design and/or installation requirements of an item. They may include pictorial, graphical, schematic or textual presentations.

3.1.2 Construction Drawings

Construction drawings are engineering drawings, which show the design of buildings, structures, or the related construction, and are normally associated with the architectural, construction and civil engineering operations. Construction drawings establish all the interrelated elements of the pertinent services, equipment, utilities, and other engineering skills.

3.1.3 Installation Drawings

Installation drawings are engineering drawings, which show the installation requirements of equipment in facilities.

3.1.4 Space Allocation Drawings

Space allocation drawings are used to provide an accurate record of existing space, identify tenants, square footages of occupancy.

3.2 MAA AIRPortal Designer's Tools

As a consultant performing services for MAA, it is assumed that individuals providing engineering services for MAA have an account to AIRPortal, MAA's system of record. There are multiple applications and resources available through AIRPortal. One such resource is the Designer's Tools document library. In the Designer Tools library, consultants and sub-consultants have access to the most current resources to perform their services in order to prepare MAA-compliant products. Examples are:

- A/E/C CAD Standard Linetypes
- A/E/C CAD Standard Symbols
- Logos
- MAA Additional Topographic Symbols
- MAA CADD Manual
- MAA Signage Symbols
- Plot Styles (ctb)
- Standard Borders
- Standard Title Sheets
- Layer Template – X000-Geom.dwg

3.3 Glossary

The following are definitions of terms used in this standard:

AutoCAD AutoCAD is a full-featured CADD tool produced by Autodesk Inc. that handles both 2D and 3D (with additional add on) design. The native file format is DWG and it reads and writes DXF files.

CADD Computer Aided Design & Drafting. Graphic software used by engineers and drafters to create and modify drawings in 2D and 3D.

Drawing Sheet Format The sheet boundary lines, and title block geometry used to record administrative

	information about a CADD file.
Drawing Sheet Sizes	Standard sheet sizes are determined by the American National Standards Institute. Alphabetic characters name sheet sizes such as D, E, and F.
DWG	AutoCAD's native CADD file format.
DXF	AutoCAD drawing exchange format for CADD files.
Model File	Model files are to be used to describe the facility's physical layout and components. This includes the building's walls, doors, windows, structural system, mechanical system, etc. All model files are drawn at full size (1-to-1). Model files can be 2D or 3D.
Model Space	AutoCAD Model Space is where the user creates a 2D or 3D full size (1-to-1) drawing. Model file types are created in Model Space.
Paper Space	AutoCAD Paper Space is where the user organizes different layouts for the purpose of plotting to an appropriate drawing scale through the use of viewports.
Plot Stamp	Plots of CADD drawing files should include a plot stamp, which should include the file name and path, date, time and the user name.
Project Copy	A project copy drawing is part of the project copy process, which manages concurrent design updates to a single released drawing.
Raster	Digital image process producing lines made of rectangular dots. Examples of raster formats are TIFF, JPG, BMP, GIF, etc.
Reference File	A CADD software capability that allows vector or raster files to be attached to sheet files and displayed, plotted, and (in the case of reference design files) used for construction purposes. This capability is generally used as a project organization tool to segregate the sources of project drawing files. Additionally, it allows designers to share drawing information electronically.
Revised Drawing	A drawing that has been revised or modified after submission.
Sheet File	Sheet files are to be used to assemble model files, text, title block and other information for plotting purposes. Each sheet file represents one plotted drawing. Generally, sheet files are plotted at 1-to-1 scale.
SSI	Sensitive Security Information, as defined by the Code of Federal Regulations (49 CFR 1520)
TIFF	Tagged Image File Format, a raster graphics format.
Vector	Computer graphics comprised of mathematical representation of points, lines and other geometric entities.
Workflow	Automatic routing of documents to the users responsible for working on them.
2D	Two Dimensional

3D	Three Dimensional
A/E/C	Architectural, Engineering and Construction
AIA	American Institute of Architects
ANSI	American National Standards Institute
GIS	Geographical Information System
CD-R	Recordable Compact disk

3.4 Glossary of Acronyms for Use in Airport Documents

See Appendix 3 for additional aviation industry acronyms that should be used in drawings and documents submitted to MAA.

4.0 DRAWING REQUIREMENTS

4.1 Drawing Production

MAA requires that all CADD files be in AutoCAD DWG format in compliant with Section ***1.4.1 Approved Software, CADD***. The standards defined in this manual are specifically for AutoCAD environments, for those consultants and sub-consultants who do not use AutoCAD, it is their responsibility to ensure that files translated to AutoCAD adhere to these standards and that the quality of the data is not degraded in the translation process before delivery.

4.1.1 Drawing File Format

Electronic drawings shall be created and maintained in native AutoCAD vector file format (DWG). The following should be avoided:

a) Translations between vector file formats (DWG and DGN).
b) Delivery of Drawing Exchange Format (DXF) files, unless mandated by special requirement in this manual.
c) Use of the following CADD entities: doughnuts, segments, solids and traces, point entities, custom fonts, patterns or line types or styles, special characters such as nested blocks, nested or circular Xrefs (reference files), infinite lines, and zero length lines.

All drawings shall be void of duplicate entities.

4.1.2 Creation of CADD Files

All CADD drawing files should be created at full-scale (1-to-1). Drawing borders are referenced into paper space with insertion point 0, 0 and a scale of 1. Refer to Table 4-1, Scale Factor and Text Height Conversion Chart for standard engineering, architectural and mapping scale factors and text heights to be used in model space for full size drawings.

Plotted Scale	Scale Factor	Plotted Text Height			
1/8”=1’-0”	96	9.6”	12”	18”	24”
3/16”= 1’-0”	64	6.4”	8”	12”	16”
1/4”=1’-0”	48	4.8”	6”	9”	12”
3/8”= 1’-0”	32	3.2”	4”	6”	8”
1/2”=1’-0”	24	2.4”	3”	4.5”	6”
3/4”=1’-0”	16	1.6”	2”	3”	4”
1”= 1’-0”	12	1.2”	1.5”	2.25”	3”
1 1/2”=1’-0”	8	.8”	1”	1.5”	2”
3”= 1’-0”	4	.4”	.5”	.75”	1”
6”= 1’-0”	2	.2”	.25”	.375”	.5”
12”= 1’-0”	1	.1”	.125”	.1875”	.25”
1”= 10’	120	1’	1.25’	1.875’	2.5625’
1”=20’-0”	240	2’	2.5’	3.75’	5’
1”=25’-0”	300	2.5’	3.125’	4.6875’	6.26’
1”=30’-0”	360	3’	3.75’	5.625’	7.5’
1”=50’-0”	600	5’	6.25’	9.375’	12.5’
1”=100’-0”	1200	10’	12.5’	18.75’	25.0’
1=10	10	1	1.25	1.875	2.5
1=20	20	2	2.5	3.75	5
1=30	30	3	3.75	5.625	7.5

Table 4-1, Scale Factor and Text Height Conversion Chart

4.1.2.1 Drawing Sheet Format

MAA-approved drawing formats include common drawing features such as boundary geometry, title block data, filename, pathname, and title block geometry.

The most current MAA-approved drawing formats, templates and seed files are stored in AIRPortal → Designer Tools. Consultants and sub-consultants have access to the most current resources to perform their services compliant with MAA's current standards. Consultants are responsible to review what is on Designer Tools to ensure they are using the most current versions.

4.1.2.2 Drawing Size

The MAA standard drawing size is ANSI D (22" X 34") full size and ANSI B (11" X 17") half size. Other sizes are allowed only as needed. Drawing sheet size and margins must follow the specifications shown in Table 4-2, Standard Drawing Sizes. These margins are configured in the Standard Borders. Apply ANSI Y14.1 for any information not provided in this standard, but required on drawing sheet size.

Size Designation	Vertical	Horizontal	Margin		
			Horizontal	Vertical	
				Left	Right
B	11"	17"	0.25"	0.75"	0.25"
D	22"	34"	0.50"	1.50"	0.50"

Table 4-2, Standard Drawing Sizes

4.1.2.3 Sizing Drawing Formats for Scaled Drawings

Each feature shall be drawn in the CADD model file at full size (1 to 1). The data should be scaled to fit the desired paper size at the correct scale through a view port in paper space. This can be done in AutoCAD using the zoom command and entering *nXP* where *n* is the scale factor required and *XP* remains constant. Table 4-3 provides the necessary scale factors needed to calculate each reduced plot size.

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
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

Architectural Units

Decimal Units

1”=25’-0”	237.5’ x 331’	475’ x 662.5’	25XP
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

* NOTE: The area for the title block, notes, legend and key plan have been deducted from the sheet total area.

Table 4-3, Sheet Sizes, Drawing Field, and Scale Factors Examples

4.1.3 Borders

Figure 4-1 shows the standard MAA border at the time of this publication. Figure 4-1 shows the title block portion of the MAA border. The bubble call-outs in Figure 4-2 refer to Table 4-4, where each item is described. Consultants should use the standard border sheet that is available AIRPortal → Designer’s Tools.

The most current MAA-approved drawing formats, templates and seed files are stored in AIRPortal → Designer Tools. Consultants and sub-consultants have access to the most current resources to perform their services compliant with MAA’s current standards. Consultants are responsible to review what is on Designer Tools to ensure they are using the most current versions.

The standard border includes the following features:

- Border
- Title Block
- Consultant ID Block
- Drawing Field
- P.E. Stamp Box
- Notes
- Legend
- Key Plan
- Graphic Scales
- North Arrow
- Plot Stamp (Full path name, User name, Date, Time)

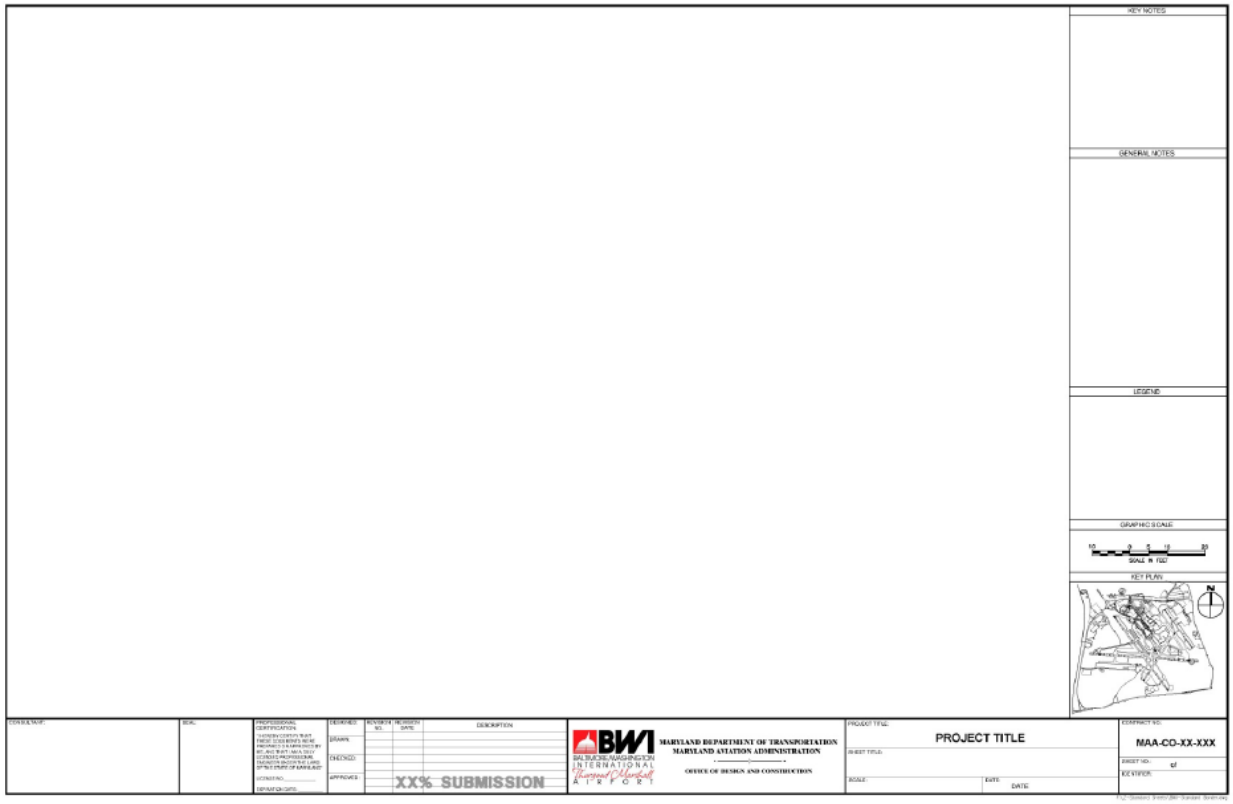


Figure 4-1, Standard Border

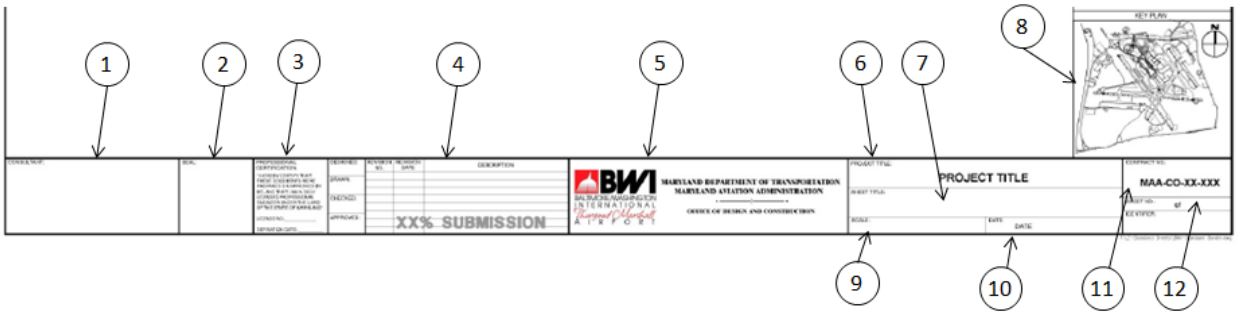


Figure 4-2, Title Block

The following statement must be placed on all sheets that contain SSI as defined in the Code of Federal Regulations (49 CFR 1520). This statement should be placed in the area above the drawing title shown as item 6 in Figure 4-2 above. Individuals preparing or handling SSI, are required to read and abide by the terms and conditions in Section 2.2 of MAA's Design Standards, which define who can handle and how they should handle SSI.

> *Warning: This document contains Sensitive Security Information that is controlled under 49 CFR parts 15 and 1520. No part of this record may be disclosed to persons without a "need to know", as defined in 49 CFR parts 15 and 1520, except with the written permission of the Administrator of the Transportation Security Administration or the Secretary of Transportation. Unauthorized release may result in civil penalty or other action. For U.S. government agencies, public disclosure is governed by 5 U.S.C. 552 and 49 CFR parts 15 and 1520.*

All borders shall include the following information with the exception of the key plan, which applies to plan sheets only:

Item	Block Description
1	Consultant Name and Address
2	Initial Block
3	Engineers Stamp Block
4	Revision Date and Description Block
5	Airport Logo and Name Block
6	Project Title
7	Sheet Title
8	Key Plan
9	Scale
10	Date
11	Contract Number
12	Sheet Number

Table 4-4, Drawing Title Block Descriptions

4.1.4 Title Sheets

Figure 4-3 shows the standard title sheets for projects at both BWI and Martin State Airport (MTN). Consultants should use the standard title sheet that is available in AIRPortal → Designer's Tools.

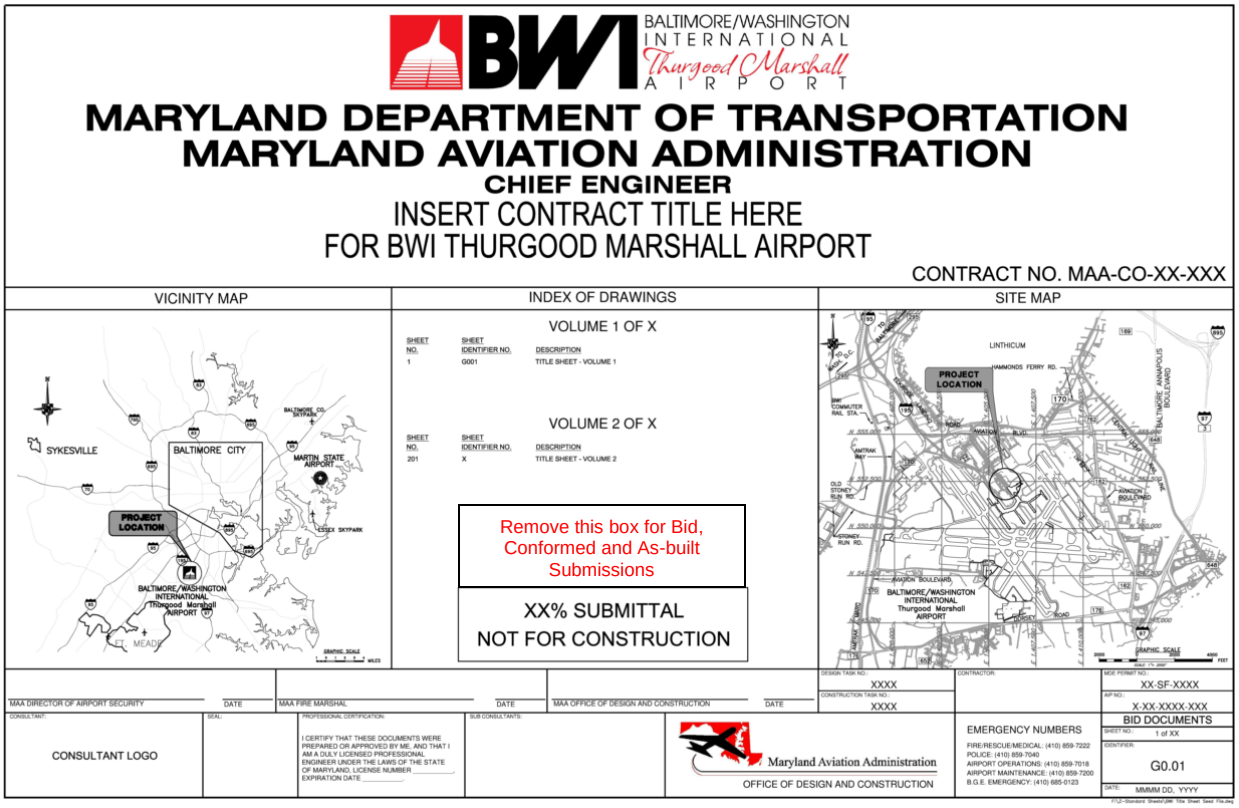
The most current MAA-approved drawing formats, templates and seed files are stored in AIRPortal → Designer Tools. Consultants and sub-consultants have access to the most current resources to perform their services compliant with MAA's current standards. Consultants are responsible to review what is on Designer Tools to ensure they are using the most current versions.

The following information will be included on all title/cover sheets:

- Airport Logo and Name
- Maryland Department of Transportation
- Maryland Aviation Administration, Office of Design and Construction
- ***MAA CONTRACT TITLE*** (assigned by MAA)
- Contract No, MAA-CO-00-000 (assigned by MAA Office of Procurement)
- Submission Name (e.g. 30% Design, Bid Documents, Conformed, Record, etc.) and date
- Sensitive Security Information (SSI, as defined by 49 CFR 1520) statement as it appears below (if the document set contains SSI).
- Vicinity Map and Site Map. The site map should include gridlines that conform to the grid layout defined in the MAA Naming and Addressing Standard. The combined extent of the area covered by all sheets provided should be clearly indicated on the site map.
- Consultant Name Block and Stamp Block
- Signature Blocks Including Signature Line and Date Line for: Airport Security, Fire Marshall and MAA Division of Facilities Design
- Drawing Index
- Should additional space be required provide separate index sheet immediately behind cover sheet. The comment '(contains SSI)' should be added after the title of any documents that contain SSI.

The following statement must be placed on the title sheet of drawing sets that contain SSI as defined in the Code of Federal Regulations (49 CFR 1520).

Warning: This document contains Sensitive Security Information that is controlled under 49 CFR parts 15 and 1520. No part of this record may be disclosed to persons without a "need to know", as defined in 49 CFR parts 15 and 1520, except with the written permission of the Administrator of the Transportation Security Administration or the Secretary of Transportation. Unauthorized release may result in civil penalty or other action. For U.S. government agencies, public disclosure is governed by 5 U.S.C. 552 and 49 CFR parts 15 and 1520.



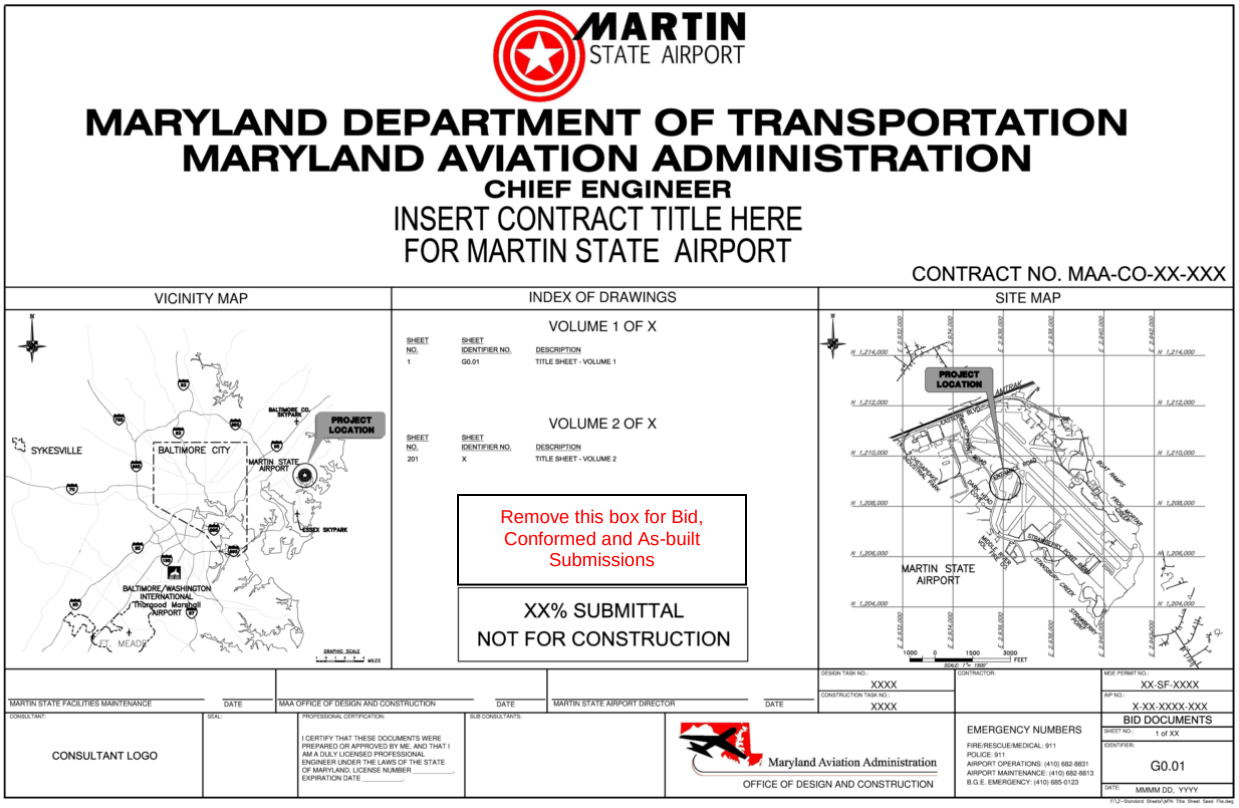


Figure 4-3, Title/Cover Sheet Layout Samples

Modifications to the standard cover sheet and border require prior approval of the Office of Design and Construction.

4.1.5 Drawing Numbering

The drawing sequence number for CADD drawing starts with an upper case letter specifying the discipline followed by a three digit sequential number, starting with 001 within each discipline code (i.e. C001, C002 …, C00n; A001, A002 … A00n). The discipline codes are listed below:

Discipline Code	Discipline	Discipline Code	Discipline	Discipline Code	Discipline
A	Architectural	G	General	Q	Equipment-Baggage
C	Civil	H	Hazardous materials	R	Real estate/lease
D	Demolition	I	Interiors	S	Structural
E	Electrical	L	Landscaping	T	Telecommunication
F	Fire protection	M	Mechanical	V	Surveying/mapping
		P	Plumbing	Z	Contractor/shop drawing

Table 4-5, Drawing Number Discipline Codes

4.1.6 Arrangement of Drawings

The drawings in a construction drawing set are listed by discipline in Table 4-6, Construction Drawing Set.

4.1.6.1 Construction Drawing Sets

The drawings in Table 4-6 are commonly used in identifying a complete set of drawings for the construction of a new facility. Drawing sets for the construction of facility modifications must consist of a subset of the drawings listed in this table. Demolition drawings may be submitted under the Demolition discipline or under another discipline. Construction drawing sets shall be arranged by discipline in the following order, although the exact placement of demolition drawings can vary by project.

DISCIPLINE	DRAWING CODE	DESCRIPTION
General	G	Cover, Index, Abbreviations, Symbols, Staging & Safety Plans
General	G	Security Plan
Real Estate/Lease	R	Property Boundaries And Legal Descriptions
Civil	C	Demolition
Civil	C	Legend
Civil	C	Site
Civil	C	Boring Log
Civil	C	Under Slab Drainage
Civil	C	Building Site Plan
Civil	C	Grading Plan
Civil	C	Utility Plan
Civil	C	Details, Elevations And Sections
Civil	C	Site Improvements
Civil	C	Layout, Grading, Draining and Landscaping
Civil	C	Structural Details
Demolition	D	Removal of Existing Construction
Hazardous Materials	H	Hazardous Materials
Landscaping	L	Legend, Symbols and Abbreviations
Landscaping	L	Irrigation Plan

DISCIPLINE	DRAWING CODE	DESCRIPTION
Landscaping	L	Planting
Landscaping	L	Irrigation and Planting Details
Architectural	A	Legend, Symbols and Abbreviations
Architectural	A	Floor Plan
Architectural	A	Reflected Ceiling Plan
Architectural	A	Roof Plan
Architectural	A	Elevations
Architectural	A	Sections
Architectural	A	Details
Architectural	A	Millwork
Architectural	A	Equipment
Architectural	A	Furniture
Interiors	I	Interior Building Elements
Structural	S	Legend, Symbols And Abbreviations
Structural	S	Structural Foundation Plan
Structural	S	Framing and Decking Plan
Structural	S	Roof Framing Plan
Structural	S	Structural Details
Structural	S	Structural Steel Grounding
Structural	S	Erection Drawings
Mechanical	M	Legend, Symbols And Abbreviations
Mechanical	M	Equipment Schedule
Mechanical	M	Elevations
Mechanical	M	Generator and Fan Room Plan
Mechanical	M	Chiller Room Plan
Mechanical	M	Mechanical Room Plan
Mechanical	M	Roof Plan
Mechanical	M	Sections and Details
Mechanical	M	Details
Mechanical	M	Hot and Cold Piping Diagrams
Mechanical	M	Miscellaneous
Mechanical	M	Steam Piping Systems
Mechanical - HVAC	M	Under Floor Plan
Mechanical - HVAC	M	Floor Plan (Room Area)
Mechanical - HVAC	M	Ceiling Plan
Baggage Handling System	Q	General Notes, Legend and Abbreviations
Baggage Handling System	Q	Floor Plans
Baggage Handling System	Q	Enlarged Floor Plans
Baggage Handling System	Q	Sections
Baggage Handling System	Q	Details
Baggage Handling System	Q	Controls
Plumbing	P	Legend, Symbols and Abbreviations

DISCIPLINE	DRAWING CODE	DESCRIPTION
Plumbing	P	Foundation Plan
Plumbing	P	Piping Plan
Plumbing	P	Riser Diagram
Plumbing	P	Sanitary Riser Diagram
Plumbing	P	Storm Riser Diagram
Plumbing	P	Roof Drain System
Plumbing	P	Details
Electrical	E	Electrical Demolition
Electrical	E	Legend, Symbols and Abbreviations
Electrical	E	Single Line Diagrams
Electrical	E	First Floor Lighting Plan
Electrical	E	Power and Communications Plan
Electrical	E	Grounding Plan
Electrical	E	Security Plan
Electrical	E	Equipment
Electrical	E	Motor Control Schematics
Electrical	E	Miscellaneous
Electrical	E	Details
Electrical	E	Panel Schedules
Electrical	E	Airfield Electrical Duct Bank Plan and Profile
Telecommunications	T	Legend, Symbols And Abbreviations
Telecommunications	T	1st Floor Communications Plan
Telecommunications	T	Details
Telecommunications	T	Manhole and Cable Diagrams
Fire Protection	F	Legend, Symbols And Abbreviations
Fire Protection	F	Sprinkler System
Fire Protection	F	Fire Pump Location Plan
Fire Protection	F	Alarm Systems
Fire Protection	F	Fire Fighting Equipment
Fire Protection	F	Stand Pipe System
Z-Contractor	Z	Shop Drawings

Table 4-6, Construction Drawing Set

4.1.7 Typical Sheets and Layouts for Construction Drawing Sets

The following sections provide examples of drawing sheets that shall always be included in a drawing set.

4.1.7.1 Cover Sheet

See Figure 4-3, Title/Cover Sheet Layout Samples.

4.1.7.2 Index Sheet

The index sheet shows a continuation of the drawing list from the title sheet, if required, all abbreviations used in the document set and a legend depicting all existing and proposed symbols. Reference contracts pertaining to the active task document are to be included in the provided attributed block. The consultant or sub-consultant should contact MAA's Office of Design and Construction to assist in identifying this list of reference contracts and to obtain copies of the documents from the reference contracts. A sample of each standard Index Sheet is available in AIRPortal → Designer's Tools.

The most current MAA-approved drawing formats, templates and seed files are stored in AIRPortal → Designer Tools. Consultants and sub-consultants have access to the most current

resources to perform their services compliant with MAA's current standards. Consultants are responsible to review what is on Designer Tools to ensure they are using the most current versions.

An example index sheets is shown in Figure 4-4, Index Sheet. The columns shown are for illustration only and may be adjusted to accommodate more or less of one type of information.

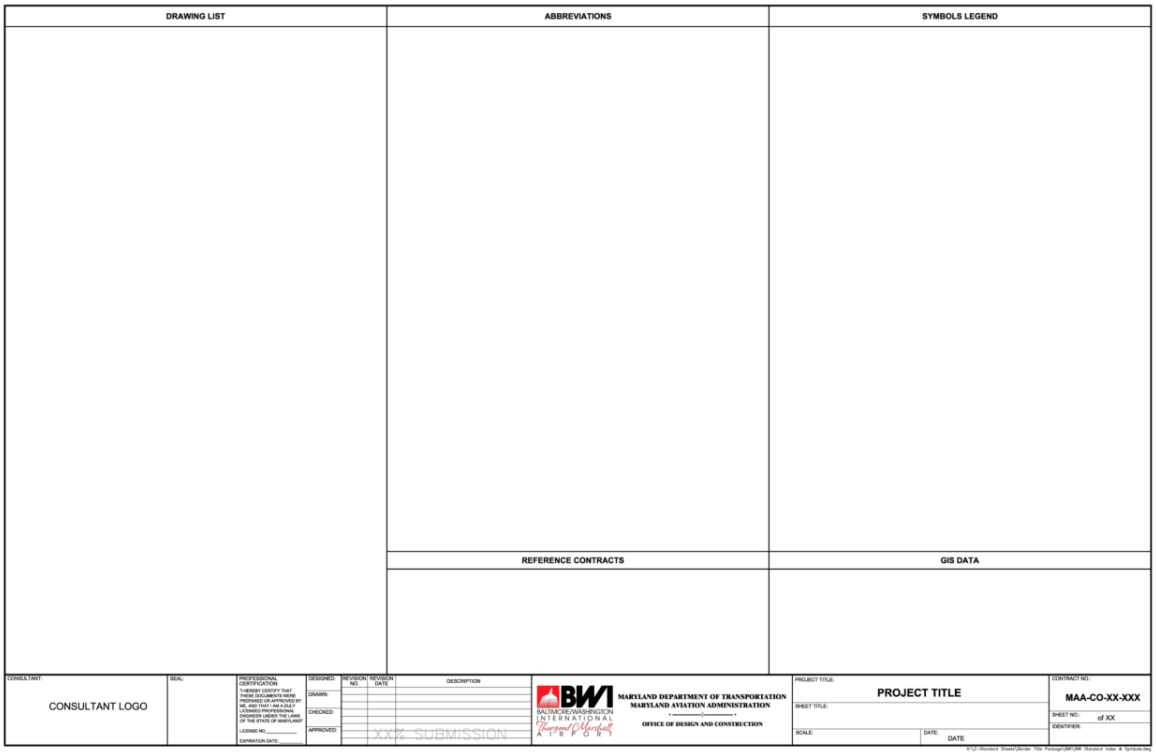


Figure 4-4, Index Sheet Example

4.1.7.3 Other Sheets

MAA has developed standard General Notes sheets for airside and landside construction projects. These are available through the MAA Design Standards publication. The remainder of the drawing sheets are discipline specific. To provide an example of all such sheets is beyond the intent of this standard.

4.1.8 MDOT/MAA Logo Art

MAA provides the following logos in electronic format for use in CADD documents. These are accessible through ***MAA AIRPortal → Designer's Tools***:

- MDOT/MAA Logo
- MAA Logo
- BWI Logo
- Martin State Airport Logo

4.1.9 Layers

For layer naming conventions, MAA has adopted the *CADD LAYER GUIDELINES* of the National CAD Standard (NCS), Version 5. Layer names as defined by the NCS shall be used, in a manner that is consistent with their definitions. Additional layers required by MAA are listed in Appendix 1. No other layers shall be used without prior written permission from MAA.

4.1.9.1 Sheet File Layer Assignment

A sheet file is synonymous with a single sheet or page of a plotted CADD drawing file. A sheet file is a selected view or portion of referenced model files within a border sheet. The addition of sheet-specific information (e.g., text, dimensions, and symbols) completes the construction of the document. Table 4-7, Common Sheet File Layers, outlines layers that will be common in all sheet files in a set of construction drawings:

General Layer Names	General Layer Descriptions	Color #
G-ANNO-DIMS	Dimensions and Leaders	5
G-ANNO-IDEN	Identification Tags: Floor Id. #s; Room #s; Door #s; hardware group; Window #s; Equipment Id. #s; Furniture #s; Tenant Identification; Area calculations; Occupant or employee names; Elevation Id. #s; Component Id. #s	7
G-ANNO-KEYN	Key Notes	7
G-ANNO-LEGN	Legends	4
G-ANNO-NOTE	Notes	7
G-ANNO-NPLT	Construction Lines, non-plotting information	8
G-ANNO-PATT	Cross-hatching, patterns, poche	5
G-ANNO-REDL	Redline Annotations	10
G-ANNO-REFR	Reference Files	7
G-ANNO-REVS	Revisions	4
G-ANNO-SCHD	Schedules	7
G-ANNO-SYMB	Miscellaneous Symbols	4
G-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	7
G-ANNO-TITL	Drawing Component Titles, Detail Titles, Section Titles, Elevations	3
G-ANNO-TTLB	Border and title block information	2

Table 4-7, Common Sheet File Layers

4.1.9.2 Model File Layer Assignment

A model file contains the physical components or features that make up a building, facility, or site (e.g., columns, walls, windows, ductwork, piping, etc.). To facilitate the setup of layers in model files in conformance with NCS guidelines, AutoCAD has included this layering standard in its software.

Once the discipline designator, major and minor categories have been chosen, the final portion of the layer name is the status. This describes to the user what the disposition is of the entities on that layer, and helps to determine if that layer should or should not be shown on a particular drawing sheet. MAA prefers to use a four-letter abbreviation to stay consistent with the Major and Minor group names, and provide a more intuitive description for the status. Below is a list of common status categories:

PHS#	Phase of project (#=1-9)
DEMO	Existing item to be demolished
EXST	Existing item to remain
FUTR	Future work
MOVE	Existing item to be moved
NEWW	New work
TEMP	Temporary work
NICN	Not in contract (not included in AutoCAD layer naming routine)
RELO	Existing item to be relocated (not included in AutoCAD layer naming routine)
ABND	Abandoned item (not included in AutoCAD layer naming routine)

4.1.10 Text Styles/Fonts

The MAA standard fonts include "out of the box" fonts that ship with every installment of *AutoCAD* as well as Windows true type fonts. Any font not meeting this criterion must be submitted to the MAA Project Engineer for approval and inclusion in the project specific standard *Font Library* (.shx or .ttf) file.

All ***Text Styles*** shall use the naming convention, (font name) (-) (text height in decimal equivalent of inches) e.g. *ROMANS_120*

4.1.11 Text Justification

All annotation text shall be left justified.

4.1.12 Text Heights and Colors

The following text heights and colors must be used on all drawings to ensure uniformity in the contract documents.

ENTITY	PLOTTED TEXT HEIGHT (IN INCHES)	COLOR
Titles	0.25	3 (Green)
Subtitles	0.175	3 (Green)
Normal Text	0.125 or 0.1	2 (Yellow)
Notes, callouts etc.	0.125 or 0.1	2 (Yellow)

Table 4-8, Text Heights and Colors

4.1.13 Line Widths and Colors

In AutoCAD, each color represents a different line width when plotted. It is preferable to control the line widths in a drawing by assigning a specific color to the layer, instead of assigning a specific color to a single element/entity (line, polyline, arc, etc.). The color of a single element/entity should be set to "BYLAYER", so the layer's color setting can be used to globally change all elements/entities on that layer, both in the model files and sheet files.

Each "sheet file" submitted to the MAA, must be able to be plotted in monochrome and still be legible with distinctions between lines types and other symbology readily apparent. To achieve this, the MAA Standard Pen Settings in Table 4-9, MAA Standard Pen Settings, should be used. Pen widths are specified for only the AutoCAD index colors. Colors 1-9 plot as solid lines, and colors 250-254 plot as screened lines. There is a pen table for both full size drawings (B) and half-size drawings (D):

MAA Full Size.ctb

AutoCAD Color No.	Plotted Pen Width in Inches	Plotted Color	Plotted Line Width
1	0.010	Black	
2	0.012	Black	
3	0.014	Black	
4	0.020	Black	
5	0.024	Black	
6	0.031	Black	
7	0.007	Black	
8	0.005	Black	
9	0.047	Black	
250	0.010	Dark Grey	
251	0.010	Dark Grey	
252	0.010	Medium Grey	
253	0.010	Light Grey	
254	0.010	Light Grey	

Solid Lineweights

Screened Lineweights

MAA Half Size.ctb

AutoCAD Color No.	Plotted Pen Width in Inches	Plotted Color	Plotted Line Width
1	0.005	Black	
2	0.006	Black	
3	0.007	Black	
4	0.010	Black	
5	0.012	Black	
6	0.015	Black	
7	0.004	Black	
8	0.003	Black	
9	0.024	Black	
250	0.010	Dark Grey	
251	0.010	Dark Grey	
252	0.010	Medium Grey	
253	0.010	Light Grey	
254	0.010	Light Grey	

Solid Lineweights

Screened Lineweights

Table 4-9, MAA Standard Pen Settings

As an alternative to using the MAA Standard Pen Settings, the consultant may include one color-dependent plot style table (*CTB) File* called *PLOT.CTB*. This *CTB File* must define the pen number and pen width for all color numbers and be capable of producing monochrome plots for all submitted *Sheet Files*.

If the consultant does not submit a file named PLOT.CTB, along with the *Sheet Files*, it will be assumed that the files use the MAA standard plot settings listed above.

4.1.14 Line Types

The MAA standard linetypes include "out of the box" linetypes (these are linetypes that ship with every installment of AutoCAD) and linetypes defined in the NCS. Linetypes from the NCS are available on AIRPortal → Designer's Tools.

> ***The most current MAA-approved drawing formats, templates and seed files are stored in AIRPortal → Designer Tools. Consultants and sub-consultants have access to the most current resources to perform their services compliant with MAA's current standards. Consultants are responsible to review what is on Designer Tools to ensure they are using the most current versions.***

Follow the instructions carefully in the README file to install the files and load the linetypes correctly. Any new linetypes created by a consultant must be submitted to the MAA Project Engineer for approval and inclusion in the project specific standard linetype (.lin) file.

It is preferable to control the linetypes in a drawing by assigning a specific linetype to the layer, instead of assigning a specific linetype to a single element/entity (line, polyline, arc, etc.). The linetype of a single element/entity should be set to "BYLAYER", so the layer's linetype settings can be used to globally change all elements/entities on that layer, both in the model files and sheet files.

4.1.15 Units

The units for all A/E/C drawings shall be U.S. Survey Foot (1200/3937 meters), inches and fractions of an inch, with the smallest fraction normally being 1/8" or as decimals. Dimensions of less than a foot must be shown in inches or fractions of inches, or as decimals.

4.1.16 Working Units, Coordinate Systems and Drawing Origins

Units should be selected according to the discipline of the drawing, architectural (feet and inches), engineering (feet and tenths), or decimal. References to feet in this document are specifically to the U.S. Survey Foot (1200/3937 meters).

All topography and topography related design including structural and architectural building footprints shall be submitted to, maintained by, and provided by MAA in the Maryland Coordinate System of 1987, also referred to as Maryland State Plane. Following are the parameters of the Maryland Coordinate System of 1987:

Map Projection:	Lambert conic conformal projection of the geodetic reference system of 1980
Horizontal Datum:	NAD83 (2001)
Latitude of Origin*:	37°40 North latitude
Central Meridian:	77°00' West longitude
Standard Parallel 1:	38°18' North latitude
Standard Parallel 2:	39°27' North latitude
False Easting*:	400,000 meters
False Northing*:	0 meters
Latitude**:	37°34' 38.14264" N
Longitude**:	81°31' 45.07877" W

* at the 77th meridian
** at artificial origin (0,0)

Vertical spatial data shall be submitted to, maintained by, and provided by MAA based on the National Geodetic Vertical Datum of 1988 (NGVD88).

The lower left corner of all other drawings should be positioned at the Cartesian coordinate point of 0, 0, 0.

4.1.17 Externally Referenced Files

Externally referenced files are related DWGs that are referenced to the current (aka host) DWG to provide additional content. Referenced files can include title/borders, base map information, or other details not included but related to the primary drawing. Figure 4-5, Externally Referenced Files Example, illustrates the concept of how a sheet file drawing is composed using model/design and informational xref files.

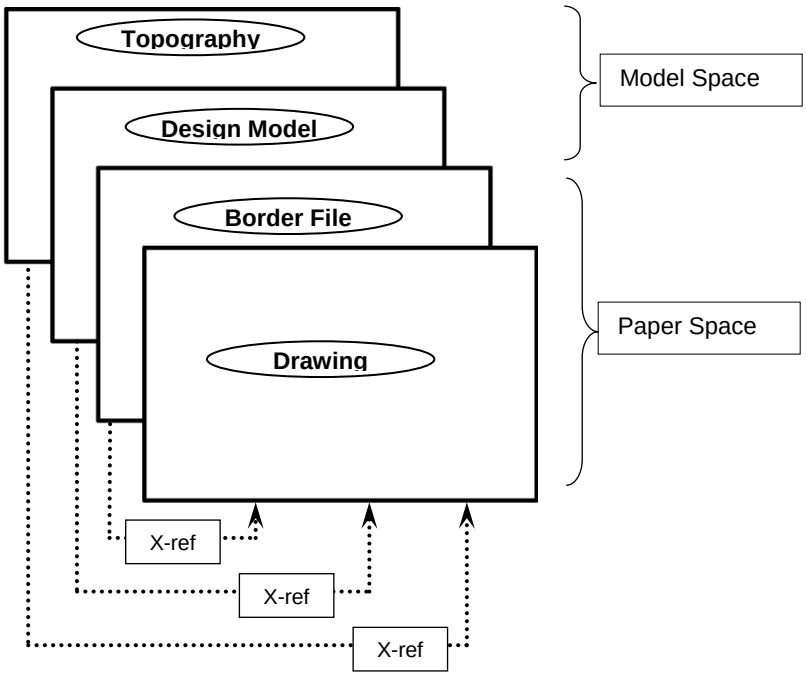


Figure 4-5, Externally Referenced Files Example

4.1.17.1 Specific Use of AutoCAD Reference Files

All files referenced in the host file shall be included in the final drawing package. AutoCAD users shall use the "Bind" option to make xrefs and their dependent objects a part of the current drawing. Nested or circular xref files are not allowed.

Reference files shall be added to all drawings using no saved paths. These paths do not include the drive letter and reflect the location of the reference file as it relates to the active file (the reference file should be in the same folder/directory as the active file).

Reference files shall be added on a specific layer and the prefix for that layer shall be "G-ANNO-REFR-" followed by the reference file name.

4.1.18 Patterning

The patterns (hatching) to be used on MAA drawings include only "out of the box" hatch patterns*;* customized patterns must not be used.

4.1.19 Dimensioning

Refer to the ANSI Y14.5M for additional dimensioning information not provided in this standard.

The distance from the object for the first dimension is 1/2" and each additional dimension is 3/8" further apart. See Figure 4-6, Dimension Directions and Spacing Example, and Figure 4-7, Dimension and Extension Line Spacing Example for dimension examples.

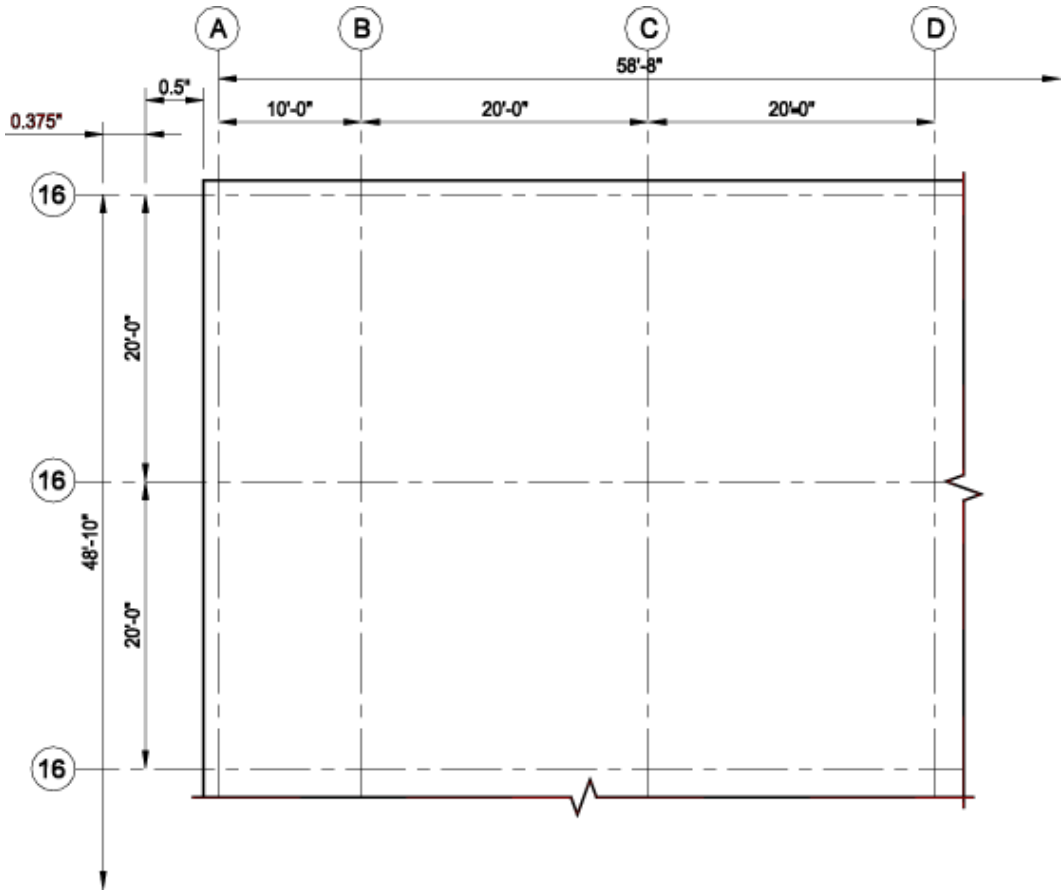


Figure 4-6, Dimension Directions and Spacing Example

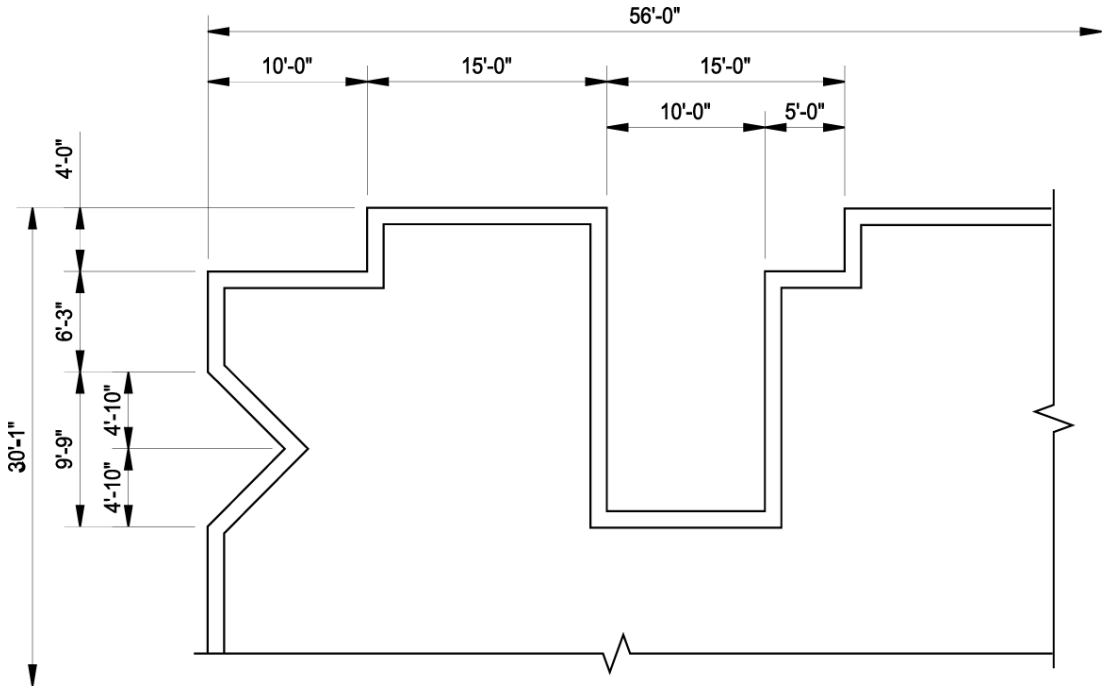


Figure 4-7, Dimension and Extension Line Spacing Example

4.1.19.1 Dimension Text Size

All dimensioning text must be placed into the dimension layer. The size of dimension text is the same as the drawing field text (no smaller than 1/10" height, with 1/8" being preferable).

Refer to Table 4-1, Scale Factor and Text Height Conversion Chart for scaling factors and text height.

4.1.19.2 Positioning Dimensions

Figure 4-6, Dimension Directions and Spacing Example and Figure 4-7, Dimension and Extension Line Spacing Example. Refer to these figures for examples.

The following guidelines shall apply:

- Avoid crossing dimension lines.
- Centerlines may be extended and used as extension lines.
- Place longer dimensions outside of shorter ones.
- Do not cover dimensions with patterns in sectioned areas.
- Whenever possible, arrange dimensions so they can be read easily on one continuous line.
- Dimensions are always placed on the drawing so that the text may be read from the bottom or the right.
- Locate dimension lines so that they do not cross extension lines. If it is necessary to dimension at an angle, that angle should be in quadrant between the horizontal and vertical so text may be read between 0 and 90 degrees.
- All text must be located above or centered on the dimension lines.
- The location of text on the dimension line shall be consistent throughout the drawing set.
- Fractions must be located on one line with a space between the whole inch and fraction.
- Make fractions with a slant bar with numbers the same height as text, for example, 1/4".
- All dimension and extension lines shall be created using the “Color 1” line weight.
- Arrowheads and dimension text shall be created using the “Color 1” line weight.
- All text shall be left justified per standard drafting standards.

4.1.19.3 Leaders

When a note or dimension cannot be placed close to an object, a leader may be used. A leader consists of a short horizontal line, an angled line and a terminator. When placing a leader to the left side of a note the horizontal line must be place in line with the top of the note. If the leader is on the right side, the horizontal line is placed at the bottom of the note, see Figure 4-8, Placement of Leaders Example. When a leader points to an object, the angled line must terminate with an arrowhead at its first object line. When the information refers to (applies to, or points to) a surface of an object, use a small filled dot or tilde. When the information refers to a bundle or grouping of wires or cables, use a lasso. An example is shown in Figure 4-9, Typical Leaders Example.

All leader lines and arrowheads shall be created using the “Color 1” line weight.

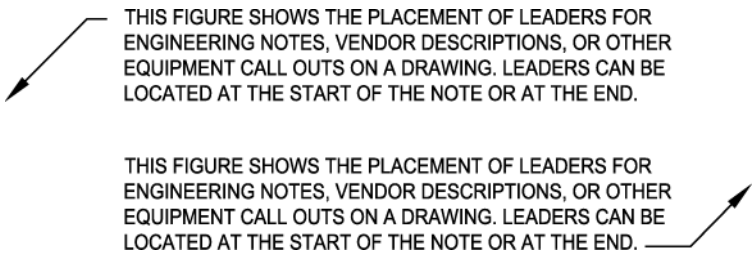


Figure 4-8, Placement of Leaders Example

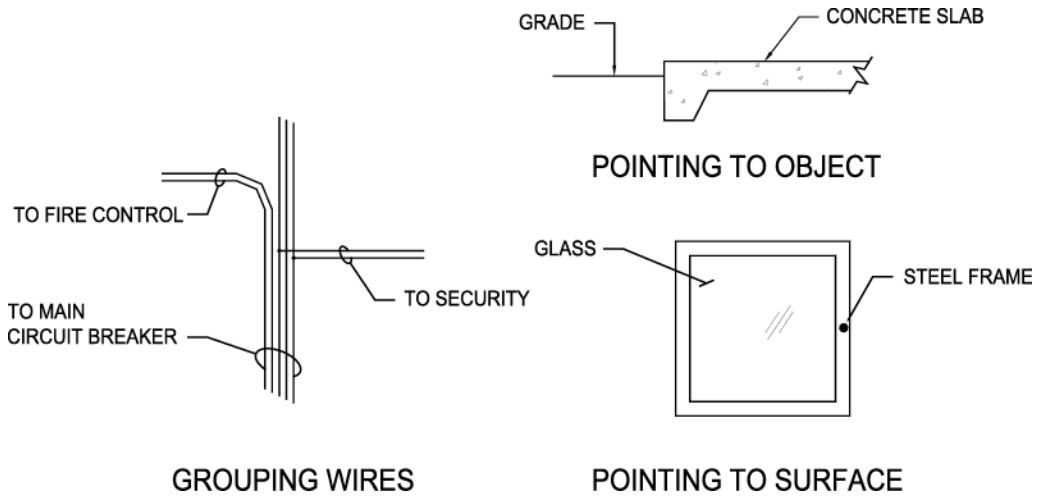


Figure 4-9, Typical Leaders Example

4.1.19.4 Arrowheads

Arrowheads denote termination of dimensions and leader lines and show direction. They must be filled, and must be the same size and style as the arrowheads used in other dimensions. Arrowhead size should be a 3:1 ratio for length to width, and in proportion to any associated text.

4.1.20 Symbols

Symbols used in drawings should comply with the NCS or ANSI and all symbols used in a drawing must be indicated in a legend. Miscellaneous signage symbols and topographic symbols that are commonly used in preparing construction drawings for MAA projects are available in AIRPortal → Designer's Tools.

The most current MAA-approved drawing formats, templates and seed files are stored in AIRPortal → Designer Tools. Consultants and sub-consultants have access to the most current resources to perform their services compliant with MAA's current standards. Consultants are responsible to review what is on Designer Tools to ensure they are using the most current versions.

4.1.21 Drawing Subtitles

Subtitles must be used on drawings with more than one view or when sections or details are required for clarity and must also be used on drawings with a single view when title block information is inadequate and additional identification is required. Subtitles are always located below and centered on the view to which they apply, except for detail drawings where the title shall be located to the lower left.

Subtitles for plans, standard details, typical details, etc., which are not referenced in other views, consist of two lines. The first line shows the exact title of the view or detail and the second line indicates the scale of the view or detail, along with bar scale, see Figure 4-10, Standard Subtitle Annotation Example.

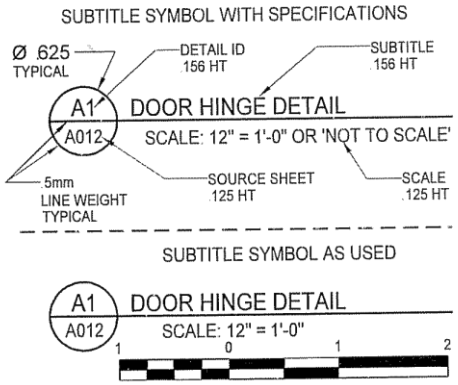


Figure 4-10, Standard Subtitle Annotation Example

4.1.22 Sections and Details

Sections must be drawn when additional clarification is warranted and details must be created whenever additional clarification is required and a section cannot readily be cut.

4.1.22.1 Sections

Sections must be drawn using the drafting standards shown in Figure 4-11, Standard Section Annotation Example. The three types of section indicators to be used are short sections, extended sections, and offset sections as shown in Figure 4-12, Section Types Example. All sections must be cut toward the top or left side of the drawing, except in unusual situations. In some cases, it may be necessary to cut a short section reading from the left, but this should be avoided if possible.

Sections must appear on the same drawing on which they are cut, if possible. If the section cannot be drawn on the same drawing, it must appear on a separate drawing reserved for sections. Under no circumstances are sections to be scattered indiscriminately throughout the set of drawings.

Section cuts shall be lettered in alphabetical order on each drawing. The letter in the top half of the circle marker must indicate the section letter. The alphanumeric number in the lower half of the circle marker must indicate the drawing on which the section is shown. Heavy dark lines located in the position where the section is cut must indicate the location of the cutting plane.

Offset sections may be used only when section clarity requires adjustment of a portion of the cutting plane. On all section cuts, the circle markers must be placed so they can be read from the direction of cut.

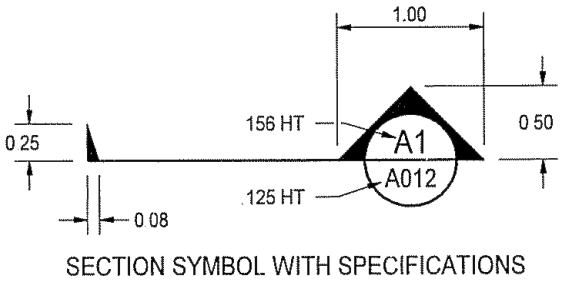
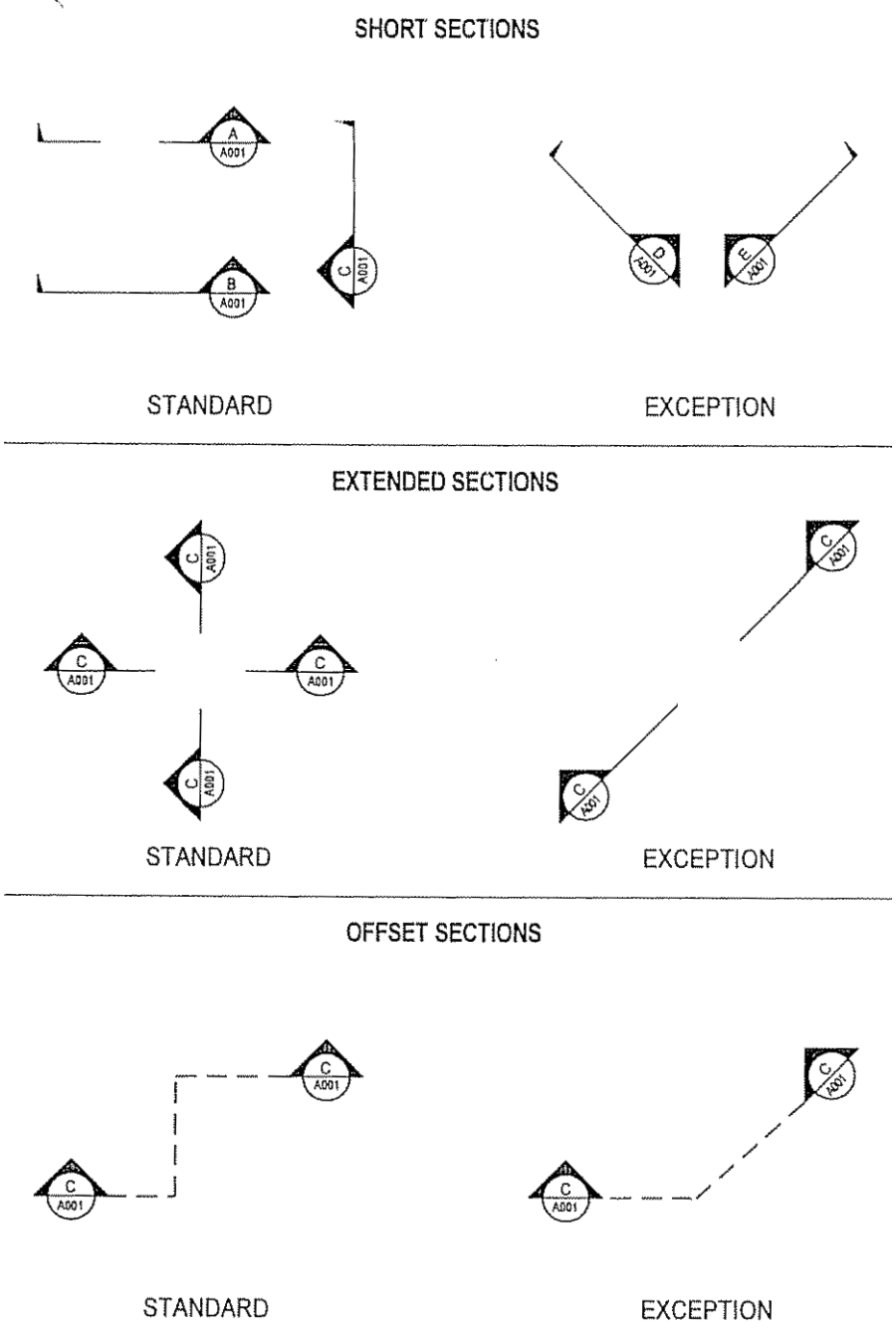


Figure 4-11, Standard Section Annotation Example

Figure 4-12, Section Types Example



4.1.22.2 Detail Drawings

The detail must be a section, a plan view, an elevation, or an enlargement. Details must have an alphanumeric (e.g. A1) designation in the upper half of the circle marker. When details are intermixed with sections and it would be difficult to locate a lettered detail on a drawing, the details must be numbered consecutively with the sections. The alphanumeric number in the lower half of the circle marker must indicate the sheet number on which the details reside (see Figure 4-13, Standard Detail Symbol Example).

When a detail appears more than once on the same drawing, extend a line off the detail, abbreviate the word typical (TYP), and indicate the quantity in parentheses.

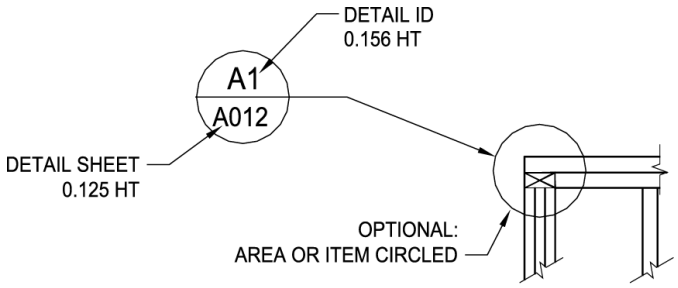


Figure 4-13, Standard Detail Symbol Example

4.1.23 Revision of Drawings

Changes to contract drawings must be clearly identified and tracked. The following sections outline the required methodologies for incorporating changes to the drawing set.

4.1.23.1 Required Revisions

Once a drawing has been approved and submitted as final, all subsequent changes shall be recorded as a revision.

4.1.23.2 Revision Methods

Revisions shall be made by the addition or deletion of information and the changes annotated on drawings.

4.1.23.3 Drawing Practices

When revising an existing drawing the most recently approved graphic symbols, abbreviations, layer naming requirements, and drawing practices, as documented in this standard, shall be used to incorporate changes or revisions.

4.1.23.4 Identifying Revisions on Drawings

All revisions shall be identified with a revision cloud and revision number within a triangle for addenda and a square for redline revisions. The revision number in the title block must correspond to the revision number in the drawing area where the change was made.

4.1.23.5 Revision Locations

The revision location is identified by the revision cloud and only additions or modifications are to be included within the revision cloud.

4.1.23.6 Revision Numbers

Revisions are to be identified by a sequential number starting at 1. Letters are not to be used for revision identification.

4.1.23.7 Multiple Changes

The same revision number shall identify all changes made to a drawing regardless of number of locations modified that are incorporated at the same time.

4.1.23.8 Revision Block

The revision block size and format shall conform to that in the standard border sheet provided. Only the five most current revisions shall be shown in the revision block and each revision shall be recorded in accordance with the following:

a) The identifying number pertaining to the revision shall be entered in the "REV" column.
b) The date the CADD file changes revision shall be entered in the "DATE" column.
c) A brief description of the change shall be entered in the "DESCRIPTION" column.

4.1.23.9 Redrawn or Replaced Drawings

Drawings are redrawn when manual drawings are converted to CADD, when there are extensive changes to a CADD file. The new drawing shall contain a note referencing the superseded drawing. The note shall be located above the revision block on the new drawing stating: "THIS DRAWING SUPERSEDES DRAWING _____, REVISION___, DATED_____." Subsequent revisions to the new drawing shall start with the number 1, regardless of the revision number of the drawing being superseded. A note shall also be located above the revision block on the superseded drawing stating: "THIS DRAWING SUPERSEDED BY DRAWING _____, DATED _____." The statements shall be in letters not less than .125 inches high.

4.1.24 Feature Drawing Rules

Geometric features are objects in drawings that represent specific objects in the real world such as an airfield light, utility conduit, building outline, or property boundary.

4.1.24.1 Allowable Geometry Types

There are three basic types of geometry (i.e., points, lines, and polygons) that are permissible in CADD drawings provided to MAA. Only one geometry type is allowed on layers that contain geometric features, as opposed to annotation or dimension layers. Only one type of geometry should be present on a single layer. The following geometry type definitions are used in accordance with ISO 19107 and in compliance with the Open GIS Consortium Level 0 Profile of GML Version 3.

Point: a single location represented by X and Y (and in some cases Z) coordinates on a reference coordinate system, as shown below in Figure 4-14. Blocks can be used to symbolize point features so long as the block is placed on the appropriate layer for that type of feature. The insertion point of the block should be placed at the correct geographic location of the feature. If block are used an additional point drawing object should not also be placed at the feature's location.

Figure 4-14, Example of a Point Feature

Line: straight line connections between two or more discrete locations represented by X and Y (and in some cases Z) coordinates on a reference coordinate system, as shown below in Figure 4-15. Note that line segments (i.e., a straight line connecting two points) and polylines (i.e., one or more connected line segments) are both included in this definition but that arcs (i.e., a curve joining two points) are not.

Figure 4-15, Example of Line Features

Polygons: A closed connection between three or more discrete locations represented by X and Y (and in some cases Z) coordinates on a reference coordinate system, as shown below in Figure 4-16. A closed polyline can also be used to represent a polygon.

Figure 4-16, Example of Polygon Features

Complex Geometry Types: Arcs, circles, and ellipses should not be used to represent geographic features. These complex geometry types can be used in details, building faces, and other drawing components that are not intended to be represented in geographic space. This is intended to facilitate data exchange between software that processes these complex data types differently. These shapes may however be represented by polylines or polygons as appropriate. For example, if arcs are used in a CADD drawing, they must first be broken into a line with vertices placed at intervals that are sufficient to maintain the feature's accuracy requirements.

4.1.24.2 Topology Rules

The placement of geometric features in juxtaposition to one another (i.e., next to, connected to, or on top of) is referred to as a topology. Topology rules establish requirements for the placement of features in relation to one another and in relation to features in other Feature Types. Unless stated otherwise, this standard requires the following topological rules:

Line Feature Types: Lines should contain one or more line segments with vertices placed at required intervals so the line feature does not stray from the actual feature by more than half the accuracy limit for that feature type, as shown below in Figure 4-17.

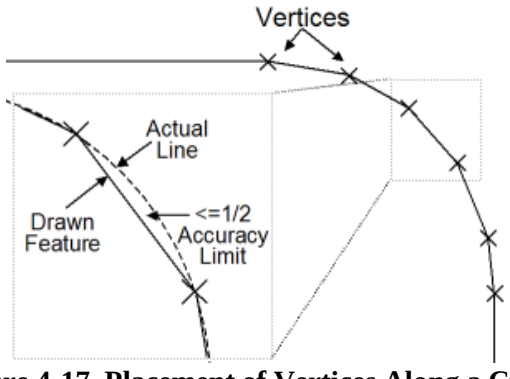


Figure 4-17, Placement of Vertices Along a Curve

Lines should begin and end at vertices collocated (i.e., exactly at the same coordinate) with features (often point Feature Types) designed to join two or more linear features, as shown in Figure 4-18. An example is electrical conduit lines that are joined only at junction boxes and other similar point features. For lines not naturally joined by physical features (e.g., marking lines), beginning and ending nodes should be placed where an attribute or other property change occurs.

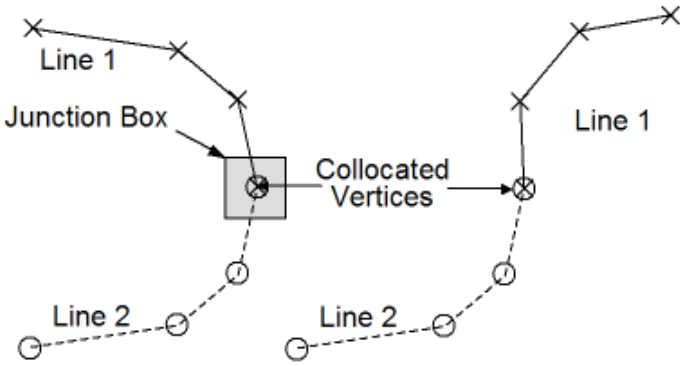


Figure 4-18, Collocation of Line End Points

Lines should not fall short (i.e. have gaps) or extend beyond (i.e. have dangles) features they are intended to connect to. When lines are connected to features represented by blocks, the line should connect to the insertion point of the block and not to the outer edge of the block.

Polygon Feature Types: Polygons must always be closed, meaning all vertices must be shared by two adjacent line segments forming the edges of the polygon, as shown in Figure 4-19.

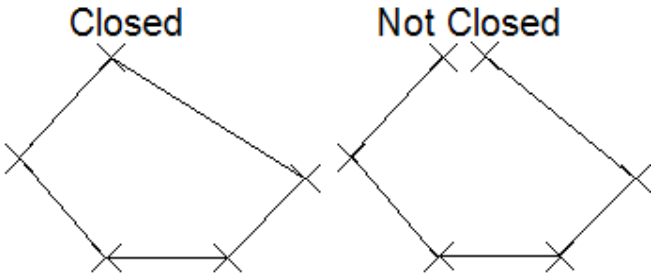


Figure 4-19, Example of Closed and Unclosed Polygons

Unless otherwise stated, polygons must not overlap other polygons on the same layer, as shown in Figure 4-20. This includes polygons placed on top of other polygons, as well as small overlapping splices because one or more vertices of adjacent sides are not matched. Polygons placed within (e.g., a 'doughnut hole') a larger polygon (e.g., the 'doughnut') which do not overlap are acceptable, because they describe a physically different space from the surrounding polygon.

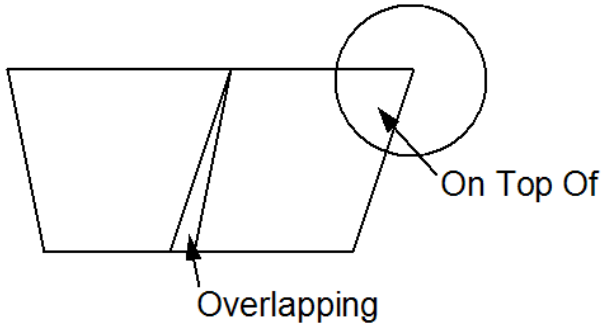


Figure 4-20, Examples of Overlapping Polygons

Polygons must share vertices with adjacent polygons where the real-world features they represent are adjacent, as shown below in Figure 4-21. This rule applies to polygons in the same Feature Type as well as polygons of different but related Feature Types.

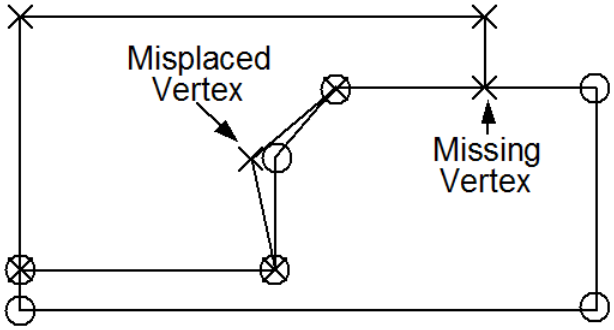


Figure 4-21, Placement of Vertices of Adjacent Polygons

4.1.24.3 Layering of Features

Features of the same type and geometry should be the only elements on any specific layer. Text and leaders relevant to feature on a layer should appear on a corresponding but different layer that complies with the layer naming conventions in this standard.

4.1.24.6 Relationship Between GIS & CADD Layers

MAA requires that CADD data be easily convertible into a GIS format to the extent feasible. To accommodate this exchange of data, a cross walk between CADD and GIS layers has been developed and can be found in Appendix 4.

4.1.25 Feature Attribution

In some cases, MAA requires that geometric features in CADD drawings include attributes such as size, material, and condition. These requirements will be defined in individual project statements of work. When MAA requires attributes, they should be attached to geometric objects in drawings via an object data table. If the same set of attributes are required for all features, a single object data table is preferred. Where possible, the attributes found in the object data table should align with attributes in MAA's GIS Data Standard for the corresponding GIS layer. For example, points or block symbols on the C-RUNW-ENDP layer, which corresponds to the RunwayEnd GIS layer per the CADD-GIS crosswalk, should include attributes for the runwayEndDesignator, thresholdType, and others. In some cases, the values that can be entered into these attributes will be bound to a domain list. For example, the attribute

thresholdType is bound to domain called CodeThresholdType, which allows the values of Normal or Displaced.

Note that the ability to define, enter and edit object data is limited to AutoCAD Map 3D or AutoCAD Civil 3D products. This software will be required to enter such values into DWGs where required by MAA.

4.2 File Naming

CADD file names should start with the volume identifier (i.e. V1, V2, etc.). Volumes come into play when a drawing set is divided in multiple packets or volumes. Omit field and underscore if all drawings are included in a single volume. Since submissions will be digital submissions effective with these standards, the use of the volume identifier will generally not be used.

Effective with this standard, the drawing sequence number will generally be the first field of the file name. The Sequence Number is a four-digit sheet sequence number designating the sequence order of the drawing in the drawing set. The number reflects the sheet sequence as shown in the index of sheets. Leading zeros are required (i.e. 0001, 0002, etc.). Immediately following the sheet sequence is the insert identifier. This is a single letter used for inserting additional drawings in an existing sequence. The insert identifier is followed by an underscore and then the sheet identifier. The sheet identifier is the sheet number as shown in the drawing title block (i.e. G0.0, E1.1, C1.0, etc). After the sheet identifier is another underscore and then the sheet title. The sheet title should be exactly as shown in the drawing title block. Special characters such as back and forward slashes, ampersands, and asterisks are not permitted. After the sheet title is the SSI identifier. Insert the letters SSI to identify drawings that contain security sensitive information and require special handling. Omit the SSI and preceding underscore if no SSI is present in the contract drawing. The last part of the file name is the format extension. This is the three letter application file type (i.e. dwg, dwf, pdf, etc.)

Figure 4-22, File Naming Convention

5.0 SPACE ALLOCATION DATA

5.1 Introduction

Space allocation data describes how interior and exterior space is used and by whom. This information is important for property management, emergency response, planning and many other critical airport functions. Space allocation data is often created and maintained using CADD software. Due to its unique nature and purpose, there are specific CADD requirements that pertain to this important type of data. These requirements are defined in this section.

5.2 Layer Naming

Space allocation data should be drawn on specific layers in CADD drawings. Specifically, the polygons which form space allocation boundaries should be drawn on the C-PROP-LEAS layer for exterior data and the A-PROP-LEAS layer for interior data. Following this standard sequence of discipline, major and minor codes, should be a dash (i.e. "-") followed by TOOOUU where:

- T represents a one-letter code indicating whether the space is leasable or not. It has one of two values:

  L = Leasable Space N = Non-leasable Space

- OOO represents a three-character code identifying the occupant of the space. For airline tenants, the code is based on the International Air Transport Association (IATA) listing of airline codes. For non-airline tenants, an attempt has been made to create three letter codes that are an intuitive extrapolation of the tenants' names. A complete list of occupant codes for tenants can be found in Appendix 2 (Occupant Codes for Airline Tenants) and Occupant Codes for Other Tenants. These codes represent tenant, vacant space, or common (public) space. The $ sign should be used as a placeholder when airline identifier codes consist of only two characters. Following are some examples:

  $US = US Airways (tenant) VAC = vacant
  COM = common

- UU represent a two-letter code that describes the specific use of the space by the indicated occupant. A complete list of designation codes can be found in Appendix 2.

To illustrate the use of this convention, the layer name for a US Airways hold room would be A-PROP-LEAS-L$USHR, where the L designates leasable space, the $US indicates US Airways as the occupant, and the HR indicates the use as a hold room. Similarly, the layer name for an electrical room would be A-PROP-LEAS-NCOMUE.

5.3 Identification via Hatch Patterns

Space allocation CADD drawings shall utilize two hatch layers per tenant to segregate occupants according to space designation and specific use. The first hatch layer contains a solid hatch distinguishing the major types of space designations. The color of the solid hatch is controlled by-layer using the color number identified in Table 5-10. The second hatch layer contains the patterned hatch overlay subdividing the tenant's space according to the various uses. The patterned hatch is always color 251 and is on a separate layer from the solid hatch. The layer naming convention for the patterned hatches is to create a new layer for each tenant by appending '–H' to the end of the layer name containing the solid hatch.

For example, layer A-PROP-LEAS-L$UATC contains United Airlines solid hatching for ticket counters. Layer A-PROP-LEAS-L$UATC-H contains the patterned hatch for the same space.

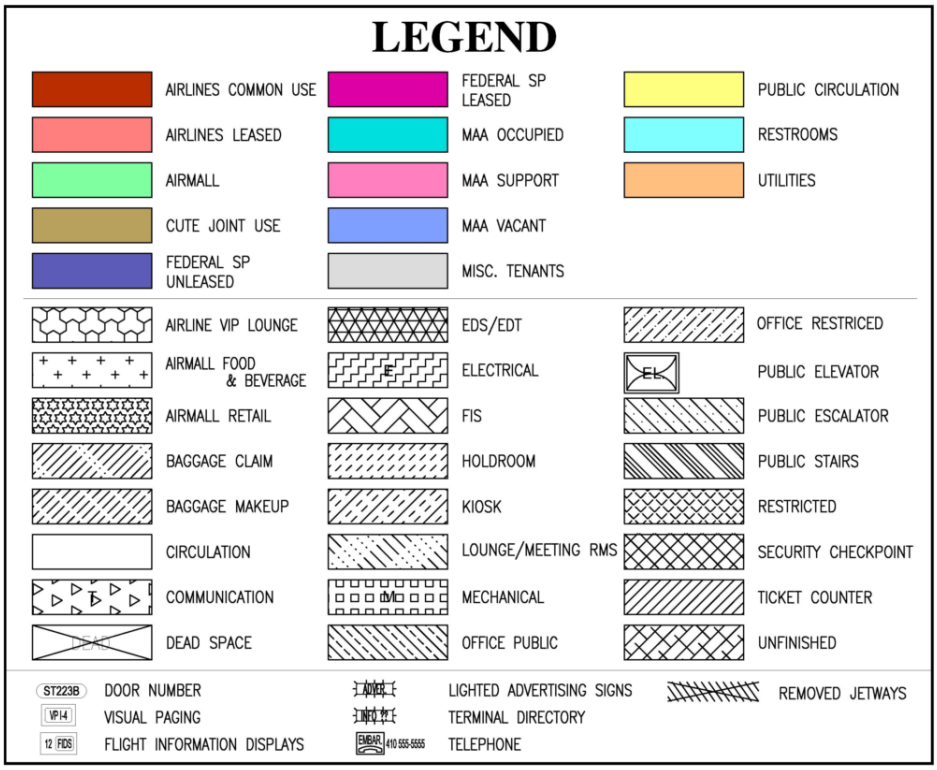


Table 5-10, Space Allocation Hatching Guidelines

5.4 Viewing Hatched Lease Areas

In some instances, the patterned hatch may be hidden beneath the solid hatch. In order to view the patterned hatches in both the AutoCAD drawings and in subsequent plots, use the *Bring to Front* or *Send to Back* commands found under *Tools* → *Display Order* in AutoCAD's pull-down menu on the patterned hatch or solid hatch, respectively. If you still cannot view the patterned hatch on top of the solid hatch, invoking the *Regen* command should solve the problem. If these steps do not give the correct view, use the *Send under Object* command found under the *Tools* → *Display Order* pull down menu command, and send the solid hatching under the layer A-wall-full.

5.5 Occupant Identification via Polygons

Every occupant area, public area, and all other miscellaneous spaces in the Terminal Building are enclosed by an AutoCAD polygon. This *Occupant Polygon* is used for multiple purposes:

1) To facilitate the hatching of the area.
2) To permit listing the square footage via the AutoCAD *Area* → *Entity* command.

These *Occupant Polygons* do not surround individual rooms within the leased space, but rather they surround the entire tenant space as long as that tenant space is for the same use and at the same lease rate. For example, an airline's office space behind ticketing counters will be enclosed by one *Occupant Polygon* but will be separate from the *Occupant Polygon* surrounding the same airline's ticketing counters. The *Occupant Polygon* is generally not intended to be visible, but at times is turned on to enable visual differentiation between adjacent occupants. When plotting in color, the polygon appears as a thick, fuchsia border. When plotting in black and white, the polygon appears as a thick, phantom linestyle, gray line.

The lines that form occupant polygons should be placed on the inside face of exterior walls. For interior walls, the lines should be placed in the center of each interior wall where tenants occupy the space on either side. If MAA is using the adjacent space or it is unoccupied, the lines should be placed on the edge of the wall that is closest to the side occupied by the tenant. These guidelines establish the square footage quantities that will be calculated based on space allocation drawings (square footages in the lease agreement may vary).

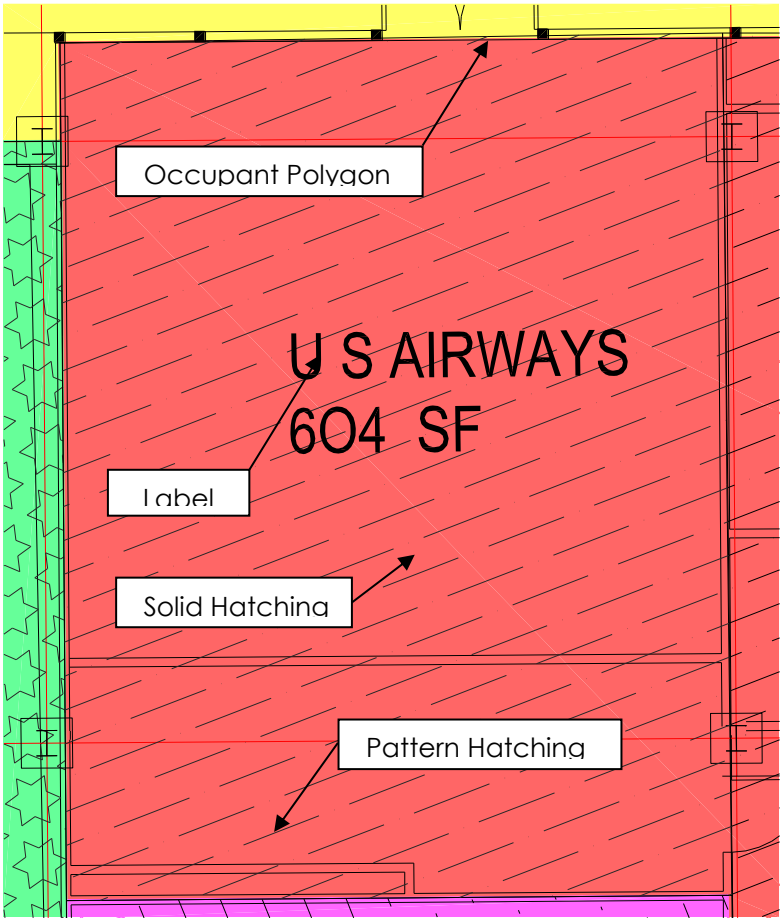


Figure 5-23, Example of Hatching, Polygons and Labels

5.6 Labeling Terminal Spaces

Within each *Occupant Polygon* mentioned in the previous section, an identifying label is provided. That label is defined as an AutoCAD attributed block. The information contained within this attribute block is the tenant name or type of space and the area in square feet, which that polygon encloses. Each label may be edited using the AutoCAD *DDATTE or ATE* command. A dialog box will appear with the various items of information, which can be edited for that label. Figure 5-23 illustrates the use of polylines, solid hatching, and pattern hatching to identify a lease space.

5.7 Attribute Blocks

The architectural model also contains lease information that is not contained within the *Occupant Polygon.* This includes public telephones and lighted advertising signs. For these leaseholds, the layer naming convention defined in Section 4.1 holds, however, their representation in the AutoCAD drawing model is done through the use of editable attribute blocks. Editable attribute blocks are also used for a variety of non-leasable spaces and objects such as flight information displays, terminal directories, visual paging monitors, as well as for the representation of door identification numbers.

5.9 Externally Referenced Files

Space Allocation Drawings require that xref's be handled in a slightly different manner than normal engineering drawings by nature of their content, content manipulation and intended use. The following section outlines the requirements.

Each of the drawings in the space allocation drawing set, covers a portion of the Terminal Building floor space with some overlap between adjacent sheets. Every square foot of space has been documented. Each drawing contains an easy to follow key plan, which identifies the extent of coverage within the Terminal Building for that particular drawing. Each individual space allocation drawing sheet consists of a common border sheet (border-U.dwg or borderL.dwg) with specific title block information. The architectural information shown in each individual drawing is merely a graphical representation of the floor plan and is not editable within that drawing file. The architectural model is contained in a separate drawing file (bldg-up.dwg or bldg-lo.dwg) which is brought into each individual space allocation drawing as an *Xref* (external reference). Each individual drawing incorporates a group of Xrefs including the border file, a legend appropriate to that drawings orientation, and an architectural model (see Section 4.1.17). Therefore, all updates, corrections, or additions to the architectural features must be made in the appropriate Xref model.

5.10 Plotting

5.10.1 Layer Manager (Express Tools)

To simplify the process of plotting drawings, it is time-efficient to use the layer manager option under *Express* → *Layers* → *Layer Manager…* pull-down menu to create a *snapshot* of the information contained in the *Layer Properties Manager* dialog box. This resulting *Layer State* is to be restored in the architectural models bldg-up.dwg or bldg-lo.dwg, and not in the individual space allocation drawing sheet to be plotted. When plotting is desired, the appropriate *Layer State* is restored prior to saving and exiting the architectural model. No particular convention is used in naming *Layer States*. However, the names are intended to be intuitive. NOTE: Be sure to re-save all *Layer States* if any layers are added or changes are made to existing layers to ensure that plots set up through the Layer Manager reflect the correct information.

5.10.2 Default Layer Settings

Certain information within the space allocation drawings is typically not intended to be visible. Additional information may be added to the architectural model that, except in certain instances, is not displayed on the space allocation drawings. Table 5-11 lists the 13 layers that contain default settings. All layers are assumed to be on.

Layer	Default Setting
A-COLS-DIM	Frozen
A-COLS-OLD	Frozen
A-FURN-OBSV	Frozen
A-FURN-PLNT	Frozen
A-ROOM-DIMS	Frozen
A-ROOM-DIMS-MISC	Frozen
A-WALL-OBSV	Frozen
L-COM-PT-N	Frozen
N-COM-RR-H	Frozen
N-MAA-FD	Thawed
N-MAA-VP	Thawed
N-MAA-DR	Thawed
N-MAA-CP	Thawed

Table 5-11, Layers with Default Setting

These 13 individual layer settings are considered constant in any layer state defined via the Layer Manager, including those listed in Section 5.14.3.

5.10.3 Existing Layer States

Existing *Layer States* include the following:

NO_HATCH: Used for editing *Occupant Polygons* and floor plans, this configuration does not contain hatching.
PRINTABLE-COLOR: Used for plotting full color copies.
PRINTABLE-B/W: Used for plotting black-and-white copies.
SQUARE_FOOTAGE: Used for determining and verifying square footage of lease space.

There has been no attempt to create *Layer States* that allow a multitude of management options.

It would be very cumbersome to attempt to cover all potential options a user may utilize.

A standard *Layer State* naming convention makes it easy to globally set the desired view. One example would be to save a *Layer State* configured to isolate an individual occupant. The layer naming convention is intended to allow the use of wildcards (* and ?) to easily isolate tenants in the AutoCAD *Layer* command. The user is encouraged to create or delete *Layer States* deemed necessary to facilitate the viewing and editing of occupant information.

5.10.4 Plotting Individual Space Allocation Drawings

Each individual space allocation drawing can be plotted in a variety of ways, depending on the intended use.

There are four primary uses anticipated:

1) Full Color, hatch patterns displayed, excluding *Occupant Polygons*.
2) Full Color, hatch patterns displayed, including *Occupant Polygons*.

3) Black-and-white, hatch patterns displayed, excluding *Occupant Polygons*.
4) Black-and-white, hatch patterns displayed, including *Occupant Polygons*.

The color plots will offer the clearest presentation in regards to differentiating tenant occupancy and are best plotted on bond paper. However, color plots can be expensive in large quantity. Therefore, black-and-white plots shall be plotted on reproducible paper when large quantities of prints are required for distribution.

Prior to opening and printing an individual space allocation drawing sheet, the user must restore the appropriate Layer and linetype property settings in the architectural model either manually or via the layer states defined in the 5.10.1 Layer Manager (Express Tools).

As previously mentioned, prior to opening and printing an individual sheet of a space allocation drawing, the user must restore the appropriate Layer and Line type property settings in the *Architectural Model Xref*, either manually or via the *Layer States* defined in 5.2.1 Layer Manager (Express Tools).

This is necessary because the AutoCAD variable *VisRetain* (see note below) for the space allocation drawings is set to 0. Therefore, the *Xref* files' *Layer States* will control the appearance of the final plots and not the individual sheets. Once settings are completed in the Architectural Model, save the drawing and:

1) Open the appropriate space allocation drawing.
2) Invoke the PLOT command.
3) Load the bwi-cl.ctb file (for color plots) or bwi.ctb (for black and white plots).
4) Choose the plot window using the circles in the bottom left and top right hand corner of the border sheet. Create a user-defined sheet size of 24" x 36" if necessary.
5) Choose OK.

Note:
The System Variable *VisRetain*: Controls the visibility, color, linetype, lineweight, and plot styles (if PSTYLEPOLICY is set to 0) of *Xref*-dependent layers; specifies whether nested xref path changes are saved.

When set to 0, the layer table as stored in the reference drawing (*Xref*) takes precedence. Changes made to *Xref*-dependent layers in the current drawing are valid in the current session only and are not saved with the drawing. When the current drawing is reopened, the layer table is reloaded from the reference drawing and the current drawing reflects those settings. The layer settings affected are On, Off, Freeze, Thaw, Color, Ltype, LWeight, and PStyle (if PSTYLEPOLICY is set to 0). This setting also specifies that changes made to the paths of nested *Xrefs* are for the current session only and are not saved with the drawing.

When set to 1 *Xref*-dependent layer changes made in the current drawing take precedence. Layer settings are saved with the current drawing's layer table and persist from session to session. Nested *Xref* path changes are saved with the current drawing and persist from session to session.

6.0 ELECTRONIC DELIVERABLES

6.1 General

MAA requires all submittals to be made electronically / digitally.

All CADD drawing files MUST be delivered in AutoCAD DWG and PDF. The DWG files MUST be created with the approved software from the list provided in Section 1.4 of this manual. Additionally, all DWG submittals must be made utilizing the ***eTransmit*** function within Autodesk products. Instructions appear later in this section.

All PDF files shall be created to allow printing but restrict editing by a third party. Each PDF should contain a single sheet drawing. Consultants will use the Contract Drawing File Name Format.

When submitting electronic contract documents to MAA, one sheet file representing each contract drawing shall be submitted in accordance with the MAA Design Standards. Each *sheet file* shall be ready to plot at full-size (1:1) in paper space. Layers must be controlled properly to reflect document's intended appearance. Use of drawing files with multiple layouts is permitted only in the case of cross sections.

6.1.1 Delivery Media

Currently, DWGs and any related documents or files should be submitted on CD or DVD with the session closed to ensure maximum cross platform readability. Electronic delivery via a secure FTP site, on-line document repository, or other system must be approved by the MAA Project Engineer. All electronic deliverables must be virus free.

6.1.2 Media Labeling

The submitted CD/DVD will include a cover and label with the following information:

- Construction Contract Title: *Insert Complete Contract Title*
- Construction Contract No.: MAA-CO-*XX-XXX (Insert Complete Contract Number)*
- Construction Task No.: *Insert if Applicable*
- Construction Contract Task Title: *Insert Complete Task Title (If Applicable)*
- Design Task Number: *Insert A/E Task Number*
- Airport Logo: *Insert BWI Marshall or MTN AIRPORT as Applicable*
- Consultant Logo: *Insert Consultant Logo*
- SSI Notice: *Insert SSI Warning Notice on all disks containing SSI*
- Submission Status: *Insert "Advertisement", "Addendum Number XX","Conformed Documents", etc. as applicable*
- Date: *Insert MONTH, DAY, YEAR*
- CD/DVD Number *X* of *XX (Insert Data)*

For projects containing Sensitive Security Information (SSI), the A/E shall include SSI files on a separate CD. Media that contains SSI must include the following statement on the label:

Sensitive Security Information

Warning: This media contains Sensitive Security Information that is controlled under 49 CFR 1520. No part of this record may be disclosed to persons without a need to know, as defined in CFR 1520, except with the written permission of the TSA Administrator, Washington, D.C.. Unauthorized release may result in civil penalty or other action. For U.S. government agencies, public disclosure is governed by 5 U.S.C. 552.

For projects containing SSI, the following "Notice" shall be included in place of each drawing on the CD containing the non-SSI files. The intent of the notice is to direct the user to the disk containing SSI.

Revise Text as appropriate for content

Drawing No. XXXX or Specification Section No. XXXXXX

NOTICE: THIS DRAWING CONTAINS SENSITIVE SECURITY INFORMATION (SSI) THAT IS CONTROLLED UNDER 49 CFR 1520

Requirements for viewing and handling SSI are contained in the Notice to Contractors that is provided in Volume 1 of the Technical Specifications that are provided on this CD.

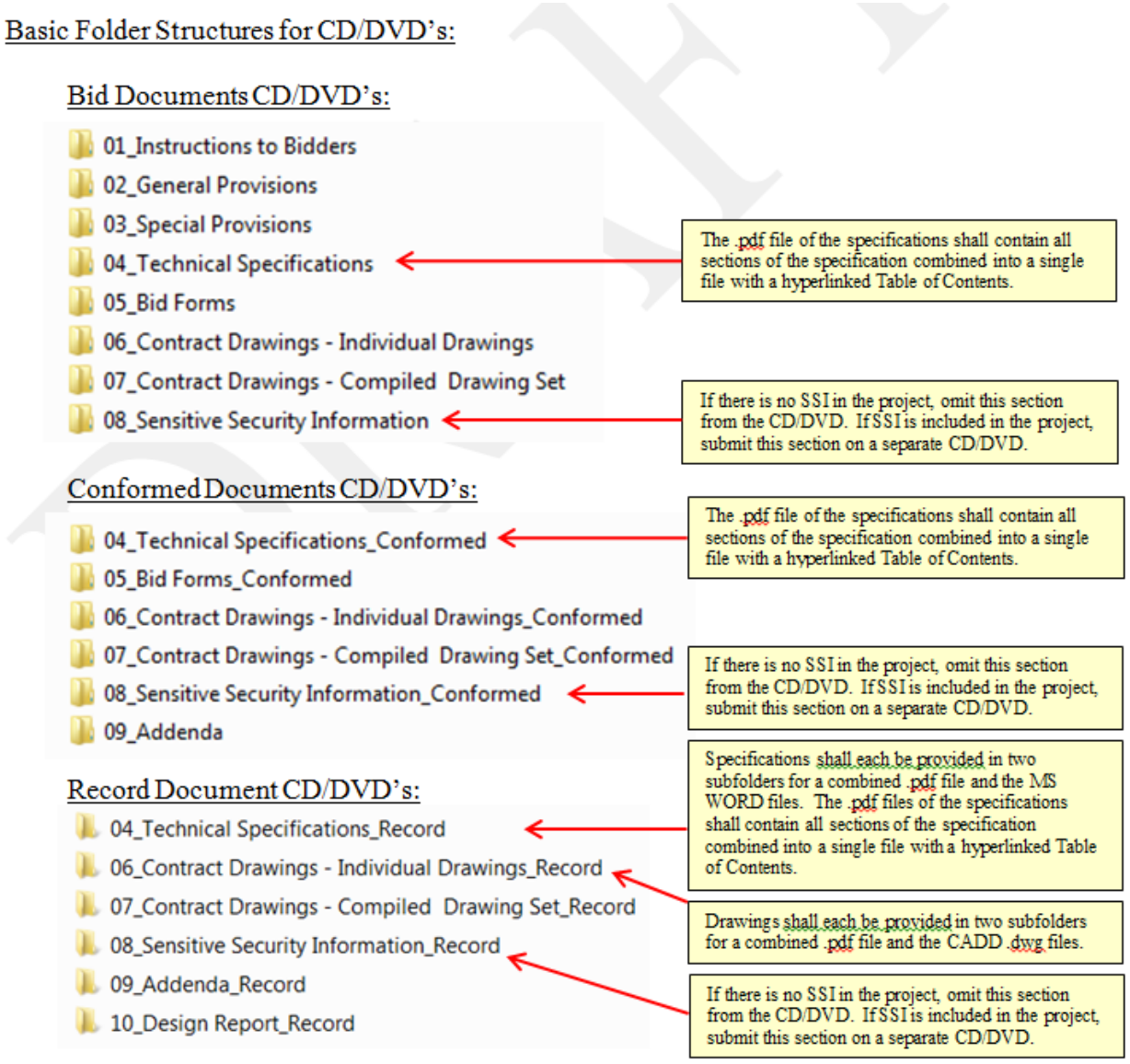
All SSI information associated with this project, **including this drawing**, is provided on a separate CD that is clearly marked "Sensitive Security Information". No part of this document may be released to persons without a need to know, as defined in CFR 1520, except with the written permission of the TSA Administrator, Washington, DC. Unauthorized release may result in civil penalty or other action. For U.S. Government agencies, public release is governed by 5 USC 522.

This requirement shall apply to CADD and non-CADD deliverables.

6.1.3 Directory Structure

Files shall be organized into the following folder and file structure for submittal to MAA. This folder and file structure shall be considered standard and the A/E shall not alter the folder names or add/delete folders without the written permission of the Engineering Document Manager. (Contact information for the Engineering Document Manager may be obtained upon request from the MAA Project Manager.) Document file names within the folder structure shall also be considered a standard with the exception of

the individual drawing names, which shall be developed in accordance with the drawing file naming convention contained in Section 4.2.



6.1.4 Electronic File Preparation

In addition to submitting a bound DWG for each sheet that is included in the contract documents submittal, consultants shall deliver zip files containing the unbound DWGs and their related files. The eTransmit utility will be used to combine each AutoCAD file and its related support files such as raster images, external references, and fonts into a single zip file.

For the PDF version of contract drawings documentation submittals, each PDF file should contain only one contract drawing. The drawings should be organized and submitted in the proper sequence of the drawings set. Each file should follow the "Contract Drawing File Name Format" as defined in the DST and shown below.

Standard Drawing Naming Format

Volume Identifier: 2 character field should contain "V1", "V2", etc. Used when drawing set is divided in multiple packets or "volumes". Omit field and underscore if all drawings are included in one volume.

Sheet Sequence: 4-digit number starting with "0001." Leading zeros are required. The number reflects the sheet sequence as shown in the Index of Sheets. Title Sheet is always "0001". *(Note: When generating sequence number, title sheets are not always represented in the index of sheets.)*

Insert Identifier: Single letter characters used for inserting added drawings into an existing sequence. "A" is the first insertion. "B" is the second and so on, through "Z". Where there are no inserted sheets, this field is omitted.

Sheet Identifier: Sheet number as shown in drawing title block. Follows existing CAD standards (Example: G0.0, E1.1, C1.0, etc.).

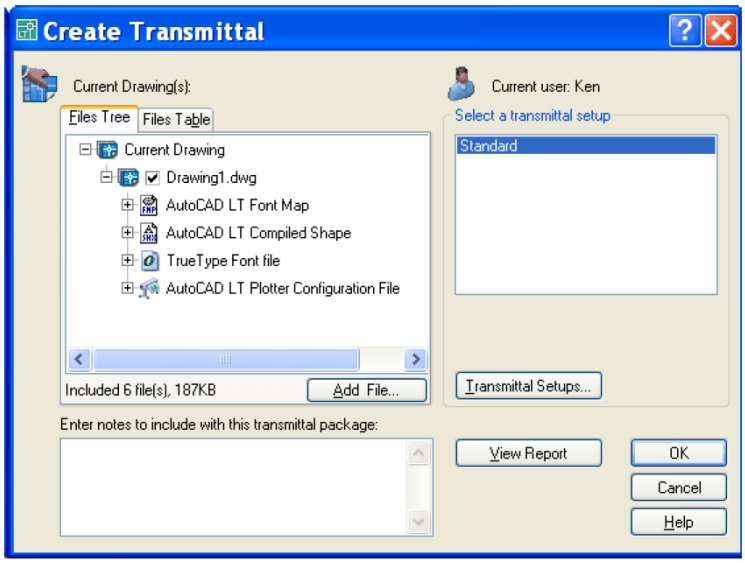
Sheet Title: Sheet title as shown as shown in drawing title block. Special characters such as "/", "\", "&", "*" etc. are not permitted.

SSI Identifier: Insert the letters "SSI" to identify drawings that contain Security Sensitive Information for special handling. Omit field and preceding underscore if no SSI data present.

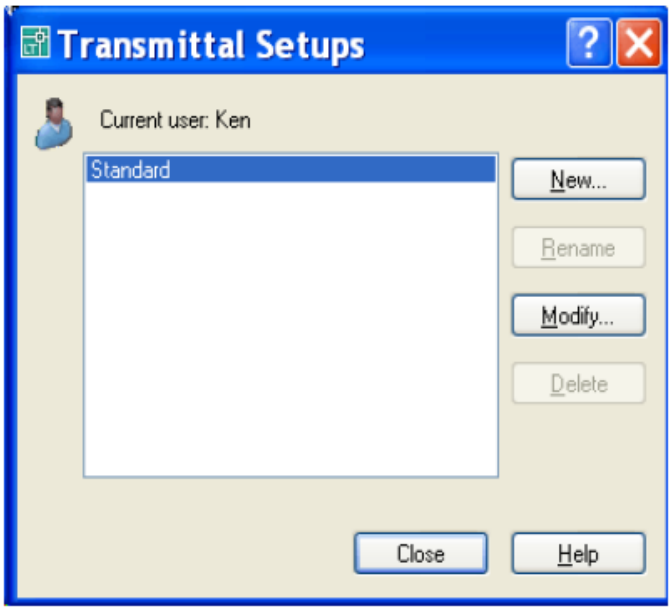
Format Extension: Application defined code (Example: dwg, dwf, pdf, etc.).

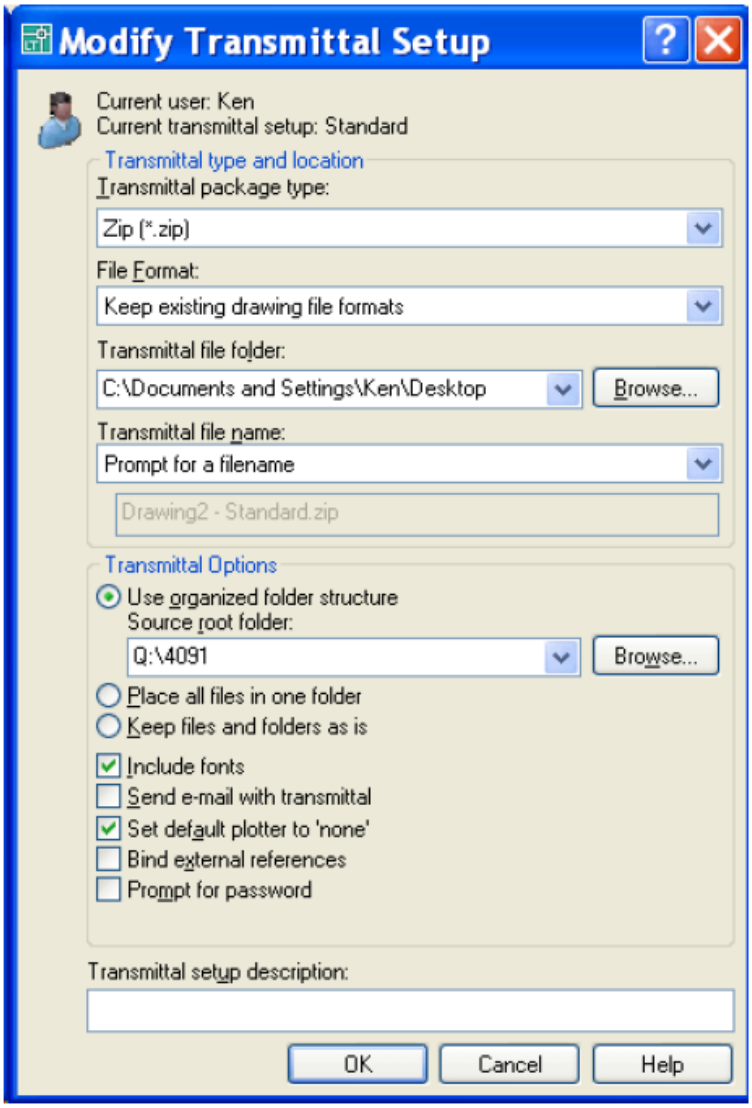
6.1.4.1 eTransmit Procedures

a. With a drawing open, choose File > eTransmit
b. In the Create Transmittal dialog box, click Transmittal Setups…



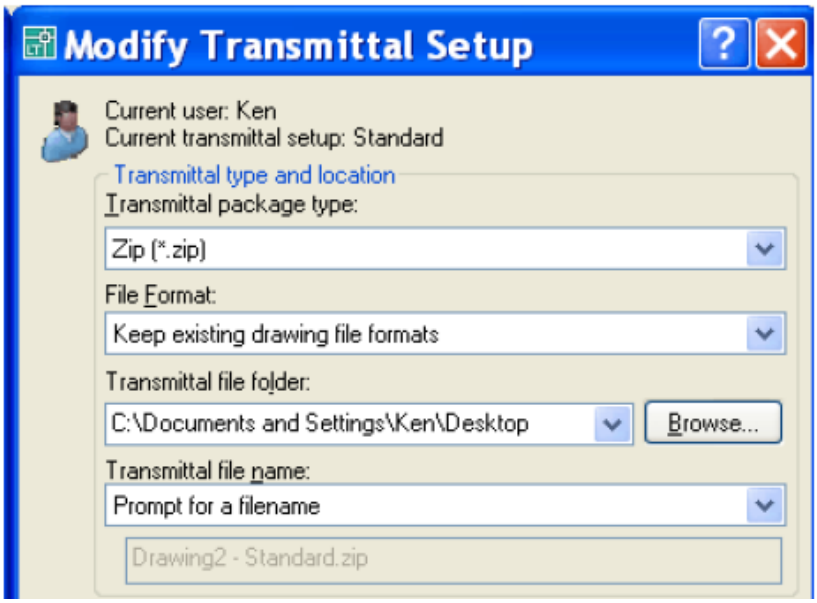
c. In the Transmittal Setups dialog box, click Modify… to modify the Standard setup




Modify Transmittal Setup
Current user: Ken
Current transmittal setup: Standard
Transmittal type and location
Transmittal package type:
Zip (*.zip)
File Format:
Keep existing drawing file formats
Transmittal file folder:
C:\Documents and Settings\Ken\Desktop
Browse...
Transmittal file name:
Prompt for a filename
Drawing2 - Standard.zip
Transmittal Options
Use organized folder structure
Source root folder:
Q:\4091
Browse...
Place all files in one folder
Keep files and folders as is
Include fonts
Send e-mail with transmittal
Set default plotter to 'none'
Bind external references
Prompt for password
Transmittal setup description:
OK
Cancel
Help

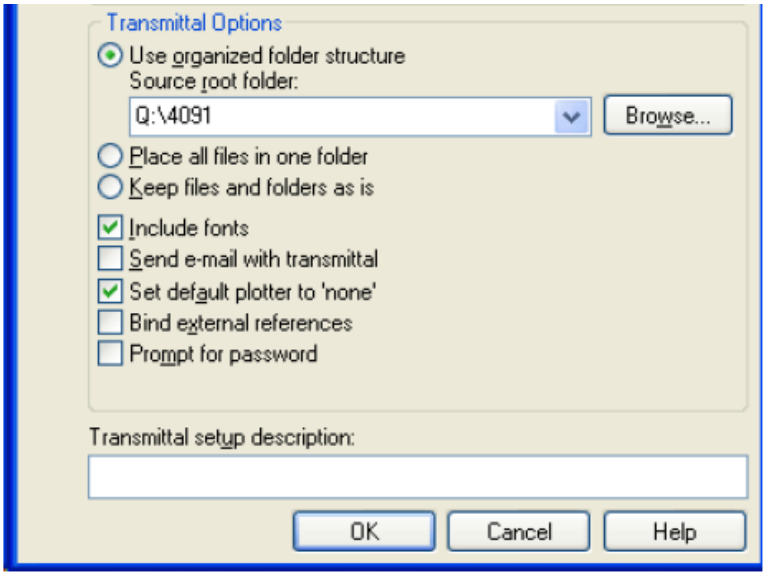
d. In the top section of the Modify Transmittal Setup dialog box, set the Transmittal Type and Location information

i. In the Modify Transmittal Setup dialog box, choose a transmittal package type of .zip.
ii. Under File Format, choose 'Keep existing drawing file formats'. If the MAA Project Manager requires the file in an older version of AutoCAD, you can change this setting.
iii. Under Transmittal file folder, choose the file folder where the transmittal file will be generated.
iv. Set the Transmittal file name text box to 'Prompt for a filename'

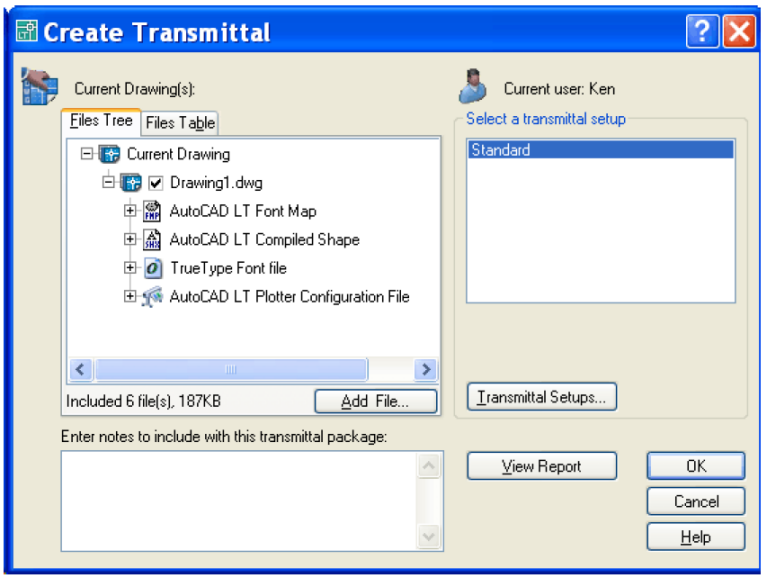


e. In the bottom section of the Modify Transmittal Setup dialog box, set the Transmittal Options

i. Under Transmittal Options, choose the 'Use organized folder structure' radio button and supply you Source root folder—wherever the project root tree structure resides on your server.
ii. Click the radio button next to 'Place all files in one folder'
iii. Check the box next to 'Include fonts'
iv. Check the box next to 'Set default plotter to 'none''
v. Name your transmittal setup for future use
vi. Click OK



f. In the Create Transmittal dialog box, ensure all necessary files are included. This includes fonts, xref files, ASCII files, etc. Click Add File… to add additional files.



g. Click OK

h. When prompted for a file name, enter a file name that conforms to the naming convention defined in Section 4.2

6.1.5 Documentation

All drawing packages submitted to the MAA shall include, but not limited to, a transmittal letter containing the same information as on the external media label, and any special instructions for the restoring/transferring of files from the media.

6.1.6 Ownership

A statement similar to the following should be included in each contract under which electronic drawings will be delivered:

> *MAA shall have unlimited rights under this contract to all information and materials developed under this contract and furnished to the MAA and documentation thereof, reports and listings, and all other items pertaining to the work and services pursuant to this agreement including any copyright. Unlimited rights under this contract are rights to use, duplicate, or disclose data and information, in whole or part in any manner and for any purpose whatsoever without compensation to or approval from Contractor. The MAA will at all reasonable times have the right to inspect the work and will have access to and the rights to make copies of the above-mentioned items. All digital files and data, and other products generated under this contract shall become the property of the MAA.*

6.2 Quality Assurance

This section lists the requirements for the inspection of drawings before they are submitted to MAA, and the engineering data quality assurance process that consultants and contractors must have in place

6.2.1 Responsibility for Quality

The consultant is responsible for seeing that the electronic files are in compliance with MAA standards.

6.2.2 Quality Assurance Testing

Quality assurance testing carried out by consultants and contractors should include examining files for entities placed in the proper layer or level, proper drawing and plot parameters, title block is filled out and set correctly, and the drawing is free of unwanted entities. Where specific spatial accuracy is required, additional checking to ensure the accuracy of the data being submitted is required. Where attribution is required, attributes will be complete and will contain appropriate values. Procedures that MAA will use for acceptance testing and a recommended for consultant and contractor quality assurance are detailed in the MAA Data Quality Standard.

6.2.3 Engineering Data Quality Assurance Process

Unless otherwise specified in the contract or order, the contractor/supplier must have an effective quality assurance process for the detailed quality assurance and technical accuracy of all engineering drawings and associated lists to be supplied under the terms of the contract. The procedures of the quality assurance system shall assure the conformance of the engineering drawings and associated lists to the applicable contract provisions. The quality assurance system shall be documented, and subject to the approval of MAA's Contracting Officer.

APPENDIX 1

Discipline Layer Naming

The layer name format is organized as a hierarchy. This arrangement allows users to select from a number of options for naming layers according to the level of detailed information desired. Layer names consist of distinct data fields separated from one another by dashes. A detailed list of abbreviations, or field codes, is prescribed to define the content of layers. Most field codes are mnemonic English abbreviations of construction terminology that are easy to remember.

Layer naming generally follows the *CADD LAYER GUIDELINES*, NCS Edition, published by the American Institute of Architects (AIA). There are five defined layer name data fields: Discipline Designator, Major Group, two Minor Groups, and Status. Each data field is separated from adjacent fields by a dash ("-") for clarity. Below are guidelines for compiling a layer name, followed by a table of common layer names.

Free software is available from *The CAD BIM Technology Center* website that works with AutoCAD, which allows users to choose the proper standard layer names from a list. The layer names are easily found by defining the discipline, the type of drawing you are creating, and the types of entities that will be placed on the layer. Software can be downloaded from https://cadbim.usace.army.mil/CAD. Note that the colors that are automatically assigned to the layers may not meet the MAA standard pen table, and may have to be adjusted.

Common Discipline Designators

Discipline Designator	Discipline	Discipline Designator	Discipline
A	Architectural	M	Mechanical
C	Civil	P	Plumbing
D	Demolition	Q	Equipment – Baggage
E	Electrical	R	Real Estate/Lease
F	Fire Protection	S	Structural
G	General	T	Telecommunications
H	Hazardous Materials	V	Surveying/Mapping
I	Interiors	Z	Contractor/Shop Drawing
L	Landscaping		

Common Major and Minor Groups

A four-letter major group and either one or two four-letter minor groups follow the discipline designator in a layer name. Common major and minor groups are listed below:

A	
ACID	Industrial waste piping
AERI	Aerial
AFFF	Aqueous film forming foam
AFRZ	Anti-freeze
AIRF	Airfield
AIRS	Airspace, approach surface
ALGN	Alignment
ALRM	Alarm
ANNO	Annotation
APRN	Apron
AREA	Area
B	
BAGS	Baggage system information
BCNS	Beacons
BEAM	Beam
BELL	Bell systems
BLDG	Building
BORE	Bore
BORW	Borrow
BRAC	Brace
BRIN	Brine
C	
CABL	Cable
CATH	Cathode
CATV	Cable TV
CCTV	Closed Circuit TV
CHAN	Channel
CHEM	Chemical
CIRC	Circuit
CLNG	Ceiling
CLOK	Clock systems
CMPA	Compressed air
CNDW	Condenser water
CO2S	Carbon Dioxide system
COLS	Columns
COMM	Communications
COND	Condensate piping
CONT	Controls
CTRL	Control panels
CWTR	Chilled water
D	
DECK	Deck
DECN	Decontamination
DETL	Details
DIAG	Diagram
DICT	Central dictation
DISC	Discipline
DISP	Displaced

DOOR	Door
DOMW	Domestic Water
DRED	Dredge
DUAL	Dual
DUCT	Duct
DUST	Dust and fume collection
E	
ELEC	Electrical
ELEV	Elevation
EMER	Emergency Systems
EMCS	Emergency Monitoring Control System
EQPM	Equipment
EXHS	Exhaust
F	
FEAT	Feature
FIXT	Fixture
FLOR	Floor
FNDN	Foundation
FUEL	Fuel lines
FURN	Furnishing
G	
GLAZ	Glazed
GRAD	Grade
GRAT	Grating
GRDL	Ground/grade level
GRID	Grid
GRND	Ground
GTHP	Geothermal heat pump
H	
HALN	Halon
HELI	Heliport
HTCW	High temperature/chilled water
HVAC	Heating, ventilation and air conditioning
HWTR	Hot water
HYDR	Hydraulics
I	
IGAS	Inert gas
INDW	Industrial waste
INSL	Insulation
INTC	Intercom/PA systems
IRRG	Irrigation
J	
JOIN	Joints
JOIS	Joists
JACK	Jacks
K	
L	
LGAS	Liquid gas
LITE	Lighting
LSFT	Life safety / egress requirements
LTNG	Lightning protection

LUBE	Lubrication
M	
MACH	Machinery
MATL	Materials
METL	Metal
MDGS	Medical/Dental gas
MNST	Monitoring stations
N	
NGAS	Natural gas
NURS	Nurse call/paging systems
O	
OPEN	Opening
OVRN	Overrun
P	
PADS	Pads
PATT	Pattern (hatching)
PENE	Penetrations
PIPE	Piping
PKNG	Parking
PLAN	Plan, blueprint
PLNT	Plants/vegetation
POLE	Utility pole
POLL	Pollution
POWR	Power
PRIM	Primary electrical cable
PROC	Process piping
PROF	Profile
PROP	Property
PROT	Protection
PVMT	Pavement
Q	
R	
RAIL	Railroad
RATE	Rating
RCOV	Recovery
REFG	Refrigeration
REIN	Reinforcement
ROAD	Roadway
ROOF	Roof
RUNW	Runway
RWTR	Raw water
S	
SAFE	Safety
SAMP	Sample
SANR	Sanitary
SEAP	Seaplane
SECD	Secondary electrical cable
SECT	Section
SERT	Security systems
SITE	Sitework
SLAB	Slab
SOUN	Sound systems

SPCL	Special
SPPT	Support
S	
SPRN	Sprinkler
SSWR	Sanitary sewer
STAT	Status
STEM	Steam
STOR	Storage
STRC	Structures
STRM	Storm sewers/drain
STRS	Stairways
SURV	Survey
SYST	System
T	
TAXI	Taxiway
TOPO	Topography
TRAF	Traffic
TRUS	Trusses
TVAN	TV antenna systems
U	
UTIL	Utilities
V	
W	
WALL	Wall
WATR	Water
X	
Y	
Z	

Common Status Categories

Once the discipline designator, major and minor categories have been chosen, the final portion of the layer name is the status. This describes to the user what the disposition is of the entities on that layer, and helps to determine if that layer should or should not be shown on a particular drawing sheet. Note that AutoCAD uses a single letter abbreviation for its status categories. MAA prefers to use a four-letter abbreviation to stay consistent with the Major and Minor group names, and provide a more intuitive description for the status. Below is a list of common status categories:

PHS#	Phase of project (#=1-9)
DEMO	Existing item to be demolished
EXST	Existing item to remain
FUTR	Future work
MOVE	Existing item to be moved
NEWW	New work
TEMP	Temporary work
NICN	Not in contract (not included in AutoCAD layer naming routine)
RELO	Existing item to be relocated (not included in AutoCAD layer naming routine)
ABND	Abandoned item (not included in AutoCAD layer naming routine)

Common Layer Names – Architectural (A)

Discipline	Major	Minor1	Minor2	Status	Layer Description
GENERAL INFORMATION					
A	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text
A	ANNO	KEYN			Reference keynotes with associated leaders
A	ANNO	NOTE			General notes and general remarks
A	ANNO	NPLT			Non-plotting graphic information
A	ANNO	PATT			Miscellaneous patterning and hatching
A	ANNO	REFR			Reference files
A	ANNO	SYMB			Miscellaneous symbols
A	ANNO	TEXT			Miscellaneous text and callouts with associated leaders
AREA INFORMATION					
A	AREA	IDEN			Room numbers, tenant identifications, area calculations
A	AREA	LINE			Architectural area calculation boundary lines
A	AREA	OCCP			Occupant or employee names
A	AREA	PATT			Area cross hatching
BAGGAGE SYSTEM INFORMATION					
A	BAGS	CART			Cart/Tug
A	BAGS	CATW			Catwalk
A	BAGS	CLMD			Claim Device
A	BAGS	CONV			Baggage Conveyor
A	BAGS	CRBS			Curbside Baggage Conveyor
A	BAGS	CTRL			Control
A	BAGS	DIMM			Dimension
A	BAGS	DOOR			Doors
A	BAGS	ELEV			Elevation
A	BAGS	EQPM			Equipment
A	BAGS	ICNV			Inbound Baggage Conveyor
A	BAGS	IOSZ			Inbound Oversized Baggage Conveyor
A	BAGS	MKUP			Make-Up Device
A	BAGS	MTCH			Match Lines
A	BAGS	NOTE			Notes
A	BAGS	OCNV			Outbound Baggage Conveyor
A	BAGS	OOSZ			Outbound Oversized Baggage Conveyor
A	BAGS	RAIL			Guardrail
A	BAGS	ROWY			Right-of-Way
A	BAGS	SCDR			Security Door
A	BAGS	SCNU			Screening Unit
A	BAGS	TBLK			Title Block
A	BAGS	TCBC			Ticket Counter Baggage Conveyor
A	BAGS	TEMP			Temporary
A	BAGS	TTRY			Tilt-Tray Baggage System
A	BAGS	VPRT			View Port Layer for Paper Space
A	BAGS	XFER			Transfer Baggage Conveyor
A	BAGS	XRAY			X-Ray Unit

Discipline	Major	Minor1	Minor2	Status	Layer Description
CEILING INFORMATION					
A	CLNG	ACCS			Access panels
A	CLNG	CTLJ			Ceiling control joints
A	CLNG	GRID			Ceiling grid
A	CLNG	LEVL			Level Changes
A	CLNG	OPEN			Openings, ceiling/roof penetrations (see also A-FLOR-OVHD in Model File Type: Floor Plan)
A	CLNG	PATT			Ceiling patterns
A	CLNG	REFL			Reflective Ceiling
A	CLNG	SUSP			Suspended elements, ceiling mounted specialties (e.g., clocks, fans, etc.)
A	CLNG	TEES			Main tees
A	COLS	ENCL			Column enclosures/fire protection
DETAIL INFORMATION					
A	DETL	GRPH			Graphics, gridlines, non-text items
A	DETL	INPD			Inch-pound-specific dimensions and notes
A	DETL	METR			Metric-specific dimensions and notes
DOORS					
A	DOOR	FULL			Full height (to ceiling) door: swing and leaf
A	DOOR	IDEN			Door number and symbol, hardware group, etc.
A	DOOR	PRHT			Partial height door: swing and leaf
A	DOOR	SECR			Security Door
A	DOOR	SYMB			Miscellaneous door symbols (e.g., overhead, bifold, pocket, etc.)
ELEVATIONS					
A	ELEV	CASE			Wall-mounted casework
A	ELEV	FIXT			Miscellaneous fixtures
A	ELEV	FNSH			Finishes, woodwork, trim
A	ELEV	IDEN			Component identification numbers
A	ELEV	OTLN			Building outlines
A	ELEV	PATT			Textures and hatch patterns
A	ELEV	PFIX			Plumbing fixtures
A	ELEV	SIGN			Signage
EQUIPMENT					
A	EQPM	ACCS			Equipment access
A	EQPM	BELW			Equipment below Floor
A	EQPM	CLRN			Equipment clearance
A	EQPM	FIXD			Fixed equipment
A	EQPM	IDEN			Equipment identification numbers
A	EQPM	JETB			Aircraft Jet bridge
A	EQPM	MOVE			Moveable equipment
A	EQPM	NICN			Not in contract equipment
A	EQPM	OVHD			Overhead, ceiling mounted, or suspended equipment
FLOOR INFORMATION					
A	FLOR	CASE			Casework (manufactured cabinets)
A	FLOR	ESCL			Escalators
A	FLOR	EVTR			Elevator cars and equipment
A	FLOR	EXPJ			Expansion and Seismic Joints
A	FLOR	FIXT			Floor mounted/Free standing miscellaneous fixtures

Discipline	Major	Minor1	Minor2	Status	Layer Description
A	FLOR	FURN			Furniture Layers
A	FLOR	HRAL			Stair and balcony handrails, guard rails
A	FLOR	IDEN			Room name, space identification text
A	FLOR	LADR			Ladders
A	FLOR	LEVL			Level changes, shafts, ramps, pits, breaks in construction, and depressions
A	FLOR	MOVS			Moving sidewalks
A	FLOR	NUMB			Room/space identification number and symbol
A	FLOR	OTLN			Floor outline/perimeter/building footprint
A	FLOR	OTLN	RPRM		Room perimeter shape (Interior walls)
A	FLOR	OVHD			Overhead items (skylights, overhangs etc.)
A	FLOR	PATT			Paving, tile, carpet patterns
A	FLOR	RAIS			Access (raised) flooring
A	FLOR	SIGN			Signage
A	FLOR	SPCE			Interior space not delineated by walls
A	FLOR	SPCL			Architectural specialties (e.g., toilet room accessories, display cases)
A	FLOR	STRS			Stair risers/treads
A	FLOR	TPTN			Toilet partitions
A	FLOR	WDWK			Architectural woodwork (field built cabinets and counters)
WINDOWS					
A	GLAZ	FULL			Full height glazed walls and partitions (see A-WALL-CWMG for curtain walls)
A	GLAZ	IDEN			Window number and symbol
A	GLAZ	PRHT			Windows and partial height glazed partitions
A	GLAZ	SILL			Window sills
LIGHTING					
A	LITE	CLNG			Specialty ceiling lights not shown on Electrical Lighting Plan
PROPERTY INFORMATION					
A	PROP	LEAS			Lease line (interior)
ROOFING INFORMATION					
A	ROOF	CRTS			Crickets flow arrows flow info
A	ROOF	EXPJ			Expansion joints
A	ROOF	GUTR			Roof internal gutters
A	ROOF	HRAL			Stair handrails, nosings, guard rails
A	ROOF	LEVL			Level changes
A	ROOF	OPEN			Roof Open Below ('X' line symbol)
A	ROOF	OTLN			Roof perimeter/edge, roof geometry
A	ROOF	PATT			Roof surface patterns, hatching
A	ROOF	RFDR			Roof drains
A	ROOF	SPCL			Roof specialties, accessories, access hatches, dormers
A	ROOF	STRS			Stair risers/treads, ladders
A	ROOF	WALK			Roof walkways
A	ROOF	WALL			Parapet walls and wall caps
SECTIONS					
A	SECT	IDEN			Component identification numbers
A	SECT	MBND			Material beyond section cut
A	SECT	MCUT			Material cut by section
A	SECT	PATT			Textures and hatch patterns

Discipline	Major	Minor1	Minor2	Status	Layer Description
WALLS					
A	WALL	CAVI			Cavity wall lines
A	WALL	CNTR			Wall centerlines
A	WALL	CWMG			Curtain wall mullions and glass
A	WALL	FIRE			Fire wall designators (patterning)
A	WALL	FULL	EXTR		Exterior full height walls
A	WALL	FULL	INTR		Interior full height walls
A	WALL	HEAD			Door and window headers (appear on Reflected Ceiling Plan)
A	WALL	IDEN			Wall identification/type text or tags
A	WALL	JAMB			Door and window jambs (do not appear on Reflected Ceiling Plan)
A	WALL	MOVE			Moveable walls/partitions
A	WALL	PATT			Wall insulation, hatching, and fill
A	WALL	PRHT			Partial height walls (do not appear on Reflected Ceiling Plan)
A	WALL	SPCL			Wall-hung/attached specialties (e.g., fixtures, grab bars (incl. handicap), telephone booths)

Common Layer Names – Borings (B)

Discipline	Major	Minor1	Minor2	Status	Description
GENERAL INFORMATION					
B	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text
B	ANNO	KEYN			Reference keynotes with associated leaders
B	ANNO	NOTE			General notes and general remarks
B	ANNO	NPLT			Non-plotting graphic information
B	ANNO	PATT			Miscellaneous patterning and hatching
B	ANNO	REFR			Reference files (AutoCAD users only, see Chapter 4)
B	ANNO	SYMB			Miscellaneous symbols
B	ANNO	TEXT			Miscellaneous text and callouts with associated leaders
GEOPHYSICAL BORINGS					
B	BORE	ELEV			Boring elevations
B	BORE	FDTA			Field data
B	BORE	HOLE			Bore/perc hole number
B	BORE	IDEN			Component identification numbers
B	BORE	LDTA			Laboratory data
B	BORE	PATT			Soil/rock patterns

Common Layer Names – Civil (C)

Discipline	Major	Minor1	Minor2	Status	Description
GENERAL INFORMATION					
C	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text
C	ANNO	KEYN			Reference keynotes with associated leaders
C	ANNO	NOTE			General notes and general remarks
C	ANNO	NPLT			Non-plotting graphic information
C	ANNO	PATT			Miscellaneous patterning and hatching
C	ANNO	REFR			Reference files (AutoCAD users only, see Chapter 4)
C	ANNO	SYMB			Miscellaneous symbols
C	ANNO	TEXT			Miscellaneous text and callouts with associated leaders
AIRFIELD					
C	AIRF	AHOA			Air Operations Area
C	AIRF	AIDS	CRIT		Airfield Navigational Aid - Critical Area
C	AIRF	AIDS	OTHR		Other airfield navigational aides
C	AIRF	AIDS	SITE		Airfield Navigational Aid - Site
C	AIRF	AIDS	RADI		Radio airfield navigational aides
C	AIRF	AIDS	ILS_		Airfield Instrument Landing System
C	AIRF	AIDS	RADR		Radar airfield navigational aides
C	AIRF	AIDS	COMM		Communications airfield navigational aides
C	AIRF	AIDS	GPS_		GPS airfield navigational aides
C	AIRF	AIDS	MCWV		Microwave airfield navigational aides
C	AIRF	AIDS	WTHR		Weather airfield navigational aides
C	AIRF	AIDS	RMTE		Remote airfield navigational aides
C	AIRF	AIDS	SYST		NAVAID system
C	AIRF	ARWY			Airway
C	AIRF	DSRF	BLDR		Building Restriction Line
C	AIRF	DSRF	RSA_		Runway Safety Area
C	AIRF	DSRF	RPZ_		Runway Protection Zone
C	AIRF	DSRF	OFA_		Object Free Area
C	AIRF	DSRF	OFZ_		Object Free Zone
C	AIRF	DSRF	POFA		Precision Object Free Area
C	AIRF	DSRF	KEYH		Key holes
C	AIRF	DSRF	NMOV		Aircraft Non-Movement Area
C	AIRF	FAAR			FAA Region
C	AIRF	FREQ			Frequency Area
C	AIRF	GLCL	PIPE		Glycol pipes
C	AIRF	GLCL	MHOL		Glycol manholes
C	AIRF	GLCL	BUBL		Glycol bubble callout
C	AIRF	PAVE			Airfield pavement section
C	AIRF	PROP			Airport property
C	AIRF	SECR	SIDA		Security Identification Display Area
C	AIRF	SECR	SECA		Airfield security area
C	AIRF	SECR	STER		Airfield sterile area
C	AIRF	SECR	RSTR		Military restricted access boundary

Discipline	Major	Minor1	Minor2	Status	Description
C	AIRF	TRKL			Flight Track Line
C	AIRF	TRKP			Flight Track Point
AIRFIELD TRAFFIC AREAS					
C	TRAF	IDEN			Airfield traffic area annotation
C	TRAF	TYPA			Type A traffic area
C	TRAF	TYPB			Type B traffic area
C	TRAF	TYPC			Type C traffic area
AIRSPACE					
C	AIRS	ISOC			Approach surface isoclines
C	AIRS	LNDM			Landmark segment
C	AIRS	OBSC			Airfield obstruction
C	AIRS	OBST	LINE		Airspace obstructions - Line
C	AIRS	OBST	PPNT		Airspace obstructions - Point
C	AIRS	OBST	POLY		Airspace obstructions - Polygon
C	AIRS	OTHR			Other airspace surfaces
C	AIRS	PART	PRIM		FAR Part 77 Primary Surface
C	AIRS	PART	HORZ		FAR Part 77 Horizontal Surface
C	AIRS	PART	CONL		FAR Part 77 Conical Surface
C	AIRS	PART	TRNS		FAR Part 77 Transitional Surface
C	AIRS	PART	APRC		FAR Part 77 Approach Surface
C	AIRS	TERP			TERPS surfaces
ALIGNMENTS					
C	ALGN	DATA			Alignment coordinates and curve data
C	ALGN	LINE			Alignments
C	ALGN	STAT			Stationing and tick marks
APRONS					
C	APRN	ACPK			Aircraft gate/stand parking area
C	APRN	ANOM			Aircraft non-movement area
C	APRN	CNTR			Centerlines
C	APRN	CNTR	IDEN		Centerline annotation
C	APRN	DEIC			Aircraft Deicing Area
C	APRN	GRND			Grounding points
C	APRN	HOLD			Holding position markings
C	APRN	IDEN			Annotation
C	APRN	JOIN			Apron joints
C	APRN	MOOR			Mooring points
C	APRN	MRKG			Apron markings
C	APRN	OTLN			Airfield apron
C	APRN	SECU			Security zone markings
C	APRN	SHLD	MRKG		Shoulder markings
C	APRN	SIGN			Airfield signs on the apron
BUILDINGS AND PRIMARY STRUCTURES					
C	BLDG	IDEN			Building and other structure annotation
C	BLDG	OTLN			Buildings and other structures
C	BLDG	OVHD			Building overhang

Discipline	Major	Minor1	Minor2	Status	Description
C	BLDG	PATT			Building hatching and patterns
BORROW AREAS					
C	BORW	IDEN			Borrow/Spoil area annotation
C	BORW	LINE			Borrow/Spoil area
CHANNELS					
C	CHAN	AIDS			Navigation aids and text
C	CHAN	CNTR			Channel centerline and survey report lines
C	CHAN	CNTR	IDEN		Channel centerline and survey report lines - annotation
C	CHAN	DACL			De-authorized channel limits, anchorages, etc.
C	CHAN	DACL	IDEN		De-authorized channel limits, anchorages, etc. - annotation
C	CHAN	IDEN			Channel limits, anchorages, turning basins, disposal areas, etc. - annotation
C	CHAN	LIMT			Channel limits, anchorages, turning basins, disposal areas, etc.
C	CHAN	TURN			Turning points
DETAIL INFORMATION					
C	DETL	CONC			Concrete
C	DETL	COVR			Covers and fittings
C	DETL	ERTH			Earth
C	DETL	FAST			Fasteners
C	DETL	FENC			Fencing
C	DETL	FENC	SECU		Security Fencing
C	DETL	FILL			Fill
C	DETL	GENF			General features (miscellaneous items)
C	DETL	GRPH			Graphics, gridlines, non-text items
C	DETL	INPD			Inch-pound-specific dimensions and notes
C	DETL	METR			Metric-specific dimensions and notes
C	DETL	PAVE			Pavements
C	DETL	PIPE			Piping
C	DETL	SPCF			Special features
C	DETL	STRC			Structural metal
C	DETL	TANK			Tanks
C	DETL	VLVE			Valves and fittings
DITCHES					
C	DTCH	BOTD			Bottom of ditch
C	DTCH	CNTR			Centerline of ditch
C	DTCH	EWAT			Edge of water
C	DTCH	IDEN			Ditch annotatior
C	DTCH	TOPD			Top of ditch
DOMESTIC WATER					
C	DOMW	PIPE		ABND	Abandoned piping
C	DOMW	DEVC			Connectors, faucets, reducers, regulators, vents, intake points, tanks, taps, backflow presenters, and valves
C	DOMW	DEVC	ANOD		Anode
C	DOMW	DEVC	ANOT		Anode test station
C	DOMW	DEVC	FIRE		Fire connection pint other than hydrants
C	DOMW	DEVC	INTK		Intake point
C	DOMW	DEVC	INTK		The location where water is allowed into the water distribution system

Discipline	Major	Minor1	Minor2	Status	Description
C	DOMW	DEVC	PIGL		Pig launch point
C	DOMW	DEVC	PUMP		Pump
C	DOMW	DEVC	RECT		Rectifier
C	DOMW	DEVC	REGL		Regulator, reducer
C	DOMW	DEVC	SMPL		Sample location
C	DOMW	DEVC	TRET		Treatment unit
C	DOMW	FIRE			Fire lines
C	DOMW	FTTG			Caps, cleanouts, crosses, and tees
C	DOMW	HYDR			Hydrants
C	DOMW	IDEN			Identifier tags, symbol modifier, and text
C	DOMW	JBOX			A box or small vault (usually concrete, brick, or cast iron) in water systems located below grade with above grade access where pipes intersect. Manhole also houses associated fittings, valves, meters, etc.
C	DOMW	MAIN			Main domestic water piping
C	DOMW	METR			Meters
C	DOMW	NHYD			Non-potable hydrants/flushing hydrants
C	DOMW	NPOT			Non-potable water piping
C	DOMW	PITS	IDEN		Identifier tags, symbol modifier, and text
C	DOMW	PLNT			A water treatment plant and all appurtenant equipment, buildings, and facilities relating to water treatment
C	DOMW	PUMP			Booster pump stations
C	DOMW	REDC			Pressure reducing stations
C	DOMW	RSVR			Reservoirs
C	DOMW	RSVR	IDEN		Identifier tags, symbol modifier, and text
C	DOMW	SERV			Domestic water service piping
C	DOMW	SIGN			Surface markers/signs
C	DOMW	SITE			A water utility company or organization's certificated area of jurisdiction or responsibility as approved by a federal, state, or local utility regulatory authority
C	DOMW	SRCE			The point from which water is supplied for processing and distribution
C	DOMW	STNS	IDEN		Identifier tags, symbol modifier, and text
C	DOMW	TANK			Water storage tanks
C	DOMW	VENT			Vent pits
C	DOMW	VLVE			Valve pits/vaults
C	DOMW	WELL			Water well houses
DREDGING					
C	DRED	LIMT			Dredge limit lines
C	DRED	OHWM			Ordinary high water marks
ELEVATIONS					
C	ELEV	FIXT			Miscellaneous fixtures
C	ELEV	IDEN			Component identification numbers
C	ELEV	OTLN			Building outlines
C	ELEV	PATT			Textures and hatch patterns
C	ELEV	SIGN			Signage
EROSION AND SEDIMENTATION CONTROL					
C	EROS	CIPR			Culvert inlet protection
C	EROS	CNST	ENTR		Construction entrance
C	EROS	DDIV			Drainage divides
C	EROS	DVDK			Diversion dike

Discipline	Major	Minor1	Minor2	Status	Description
C	EROS	IDEN			Erosion and sediment control annotation
C	EROS	INLT	PROT		Inlet protection
C	EROS	LOD			Limit of Division
C	EROS	SILT	FENC		Silt fence
C	EROS	SILT	TRAP		Silt trap
C	EROS	SSLT	FENC		Super silt fence
LIQUID FUEL					
C	FUEL	PIPE		ABND	Abandoned piping
C	FUEL	DEFL			Defueling piping
C	FUEL	DEVC			Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves
C	FUEL	DEVC	AIRE		Air eliminator
C	FUEL	DEVC	ANOD		Anode
C	FUEL	DEVC	ANOT		Anode test station
C	FUEL	DEVC	FILT		Filter strainer point
C	FUEL	DEVC	OILW		Oil water separator
C	FUEL	DEVC	PUMP		Pump
C	FUEL	DEVC	RECT		Rectifier
C	FUEL	DEVC	REDC		Reducer
C	FUEL	DEVC	SRCE		Source point
C	FUEL	DEVC	VLVE		Valve
C	FUEL	FARM			Fuel farm site
C	FUEL	FLOW			Flow direction arrows
C	FUEL	FTTG			Caps, crosses, and tees
C	FUEL	HYDR			Hydrant control pits
C	FUEL	IDEN			Identifier tags, symbol modifier, and text
C	FUEL	JBOX			Junction boxes, manholes, handholes, test boxes
C	FUEL	MAIN			Main fuel piping
C	FUEL	METR			Meters
C	FUEL	REFN			Refinery site
C	FUEL	PIPL			Pipe line
C	FUEL	PIPS			Pipeline segment line
C	FUEL	PITS	IDEN		Identifier tags, symbol modifier, and text
C	FUEL	PUMP			Booster pump stations
C	FUEL	SERV			Service piping
C	FUEL	STNS	IDEN		Identifier tags, symbol modifier, and text
C	FUEL	TANK			Fuel tanks
C	FUEL	TRCH			Fuel line trench
C	FUEL	VENT			Vent pits
C	FUEL	VLVE			Valve pits
GRADE LINEWORK					
C	GRAD	EXST			Existing grade, ground line
C	GRAD	FNSH			Finished grade
GRID LINES					
C	GRID	FRAM			Frame (bounding frame of an area referenced by a grid)
C	GRID	MAJR			Major grid lines
C	GRID	MINR			Minor grid lines

Discipline	Major	Minor1	Minor2	Status	Description
C	GRID	TEXT			Border text, annotation
HELIPORTS					
C	HELI	BLST			Helipad blast pad and stopway markings
C	HELI	CNTR			Centerline
C	HELI	CNTR	MRKG		Centerline markings
C	HELI	DISP			Displaced threshold markings
C	HELI	DIST			Fixed distance markings
C	HELI	DSRF			Helipad design surface
C	HELI	FATO			Helipad FATO
C	HELI	IDEN			Heliport numbers and letters
C	HELI	SHLD			Shoulder
C	HELI	SIDE			Side stripes
C	HELI	TDZM			Touchdown zone markers
C	HELI	THRS			Threshold markers
C	HELI	TLOF			Helipad take off and landing area
INDUSTRIAL WASTE WATER					
C	INDW	PIPE		ABND	Abandoned piping
C	INDW	DEVC			Grit chambers, meters, flumes, neutralizers, oil/water separators, ejectors, tanks, and valves
C	INDW	DEVC	ANOD		Anode
C	INDW	DEVC	ANOT		Anode test station
C	INDW	DEVC	DISC		Discharge point
C	INDW	DEVC	GRIT		Grit chamber
C	INDW	DEVC	INLT		Inlet
C	INDW	DEVC	NEUT		Neutralizer
C	INDW	DEVC	PUMP		Pump
C	INDW	DEVC	RECT		Rectifier
C	INDW	DEVC	OILW		Oil water separator
C	INDW	DEVC	WFIT		Waste fitting
C	INDW	FLOW			Flow direction arrows
C	INDW	FTTG			Caps and cleanouts
C	INDW	HEAD	LINE		Headwall line
C	INDW	HEAD	PONT		Headwall point
C	INDW	IDEN			Identifier tags, symbol modifier, and text
C	INDW	JBOX			Junction boxes and manholes
C	INDW	LAGN			Lagoons
C	INDW	LIFT			Lift stations
C	INDW	MAIN			Main industrial waste water piping
C	INDW	METR			Meters
C	INDW	PLNT			Treatment plants
C	INDW	RSVR	IDEN		Identifier tags, symbol modifier, and text
C	INDW	SERV			Industrial waste water service piping
C	INDW	SIGN			Surface markers/signs
C	INDW	STNS	IDEN		Identifier tags, symbol modifier, and text
JOINTS					
C	JOIN	CNSL			Construction joints - longitudinal
C	JOIN	CNST			Construction joints - transverse

Discipline	Major	Minor1	Minor2	Status	Description
C	JOIN	CNTL			Contraction joints - longitudinal
C	JOIN	CNTT			Contraction joints - transverse
C	JOIN	EDGE			Thickened edges
C	JOIN	EXPN			Expansion joints
C	JOIN	IDEN			Joint annotation
NATURAL GAS					
C	NGAS	PIPE		ABND	Abandoned piping
C	NGAS	DEVC			Hydrant fill points, lights, vents, markers, rectifiers, reducers, regulators, sources, tanks, drip pots, taps, and valves
C	NGAS	DEVC	ANOD		Anode
C	NGAS	DEVC	ANOT		Anode test station
C	NGAS	DEVC	FILL		Fill point
C	NGAS	DEVC	IDEN		Identifier tags, symbol modifier, and text
C	NGAS	DEVC	LITE		Light
C	NGAS	DEVC	PUMP		Pump
C	NGAS	DEVC	RECT		Rectifier
C	NGAS	DEVC	SRCE		Source point
C	NGAS	FLOW			Flow direction arrows
C	NGAS	FTTG			Caps, crosses, and tees
C	NGAS	IDEN			Identifier tags, symbol modifier, and text
C	NGAS	MAIN			Main natural gas piping
C	NGAS	METR			Meters
C	NGAS	PITS	IDEN		Identifier tags, symbol modifier, and text
C	NGAS	PUMP			Compressor stations
C	NGAS	REDC			Reducing stations
C	NGAS	SERV			Service piping
C	NGAS	SIGN			Surface markers/signs
C	NGAS	STNS	IDEN		Identifier tags, symbol modifier, and text
C	NGAS	VENT			Vent pits
C	NGAS	VLVE			Valve pits/boxes
OVERRUN AREAS					
C	OVRN	CNTR			Centerlines
C	OVRN	CNTR	IDEN		Centerline annotation
C	OVRN	IDEN			Airfield overrun area - annotation
C	OVRN	JOIN			Airfield overrun joints
C	OVRN	OTLN			Airfield overrun area - outlines
C	OVRN	SHLD			Shoulder markings
PADS (arm / disarm / calibration, etc.)					
C	PADS	CNTR			Centerlines
C	PADS	CNTR	IDEN		Centerline annotation
C	PADS	IDEN			Pads - annotation
C	PADS	OTLN			Pad - outlines
C	PADS	SHLD			Shoulders with annotation
PARKING LOTS					
C	PKNG	CARS			Graphic illustration of cars
C	PKNG	CNTR			Centerlines

Discipline	Major	Minor1	Minor2	Status	Description
C	PKNG	CNTR	IDEN		Centerline annotation
C	PKNG	CURB			Curbs and gutters
C	PKNG	DRAN			Parking lot drainage slope indications
C	PKNG	EQPM			Parking Equipment (I.e. booths, gates, etc.)
C	PKNG	FIXT			Parking lot fixtures (e.g., wheel stops, parking meters)
C	PKNG	IDEN			Parking lot, minor road, and curb annotation
C	PKNG	ISLD			Parking islands
C	PKNG	MRKG			Parking lot striping, handicapped symbols, pavement markings
C	PKNG	OTLN			Parking lot outline
C	PKNG	SIGN			Parking lot signage
C	PKNG	SBMP			Speed bumps in parking areas
PROFILES					
C	PROF	CUID			Existing grade and grading cuts - annotation
C	PROF	FILL			New work, grading fills
C	PROF	INLT			Curb and surface inlets, catch basins
C	PROF	MHOL			Manholes
C	PROF	PIPE			Piping
C	PROF	ROAD			Roads
PROPERTY					
C	PROP	CONS			Construction limits/controls, staging area
C	PROP	ESMT			Easements
C	PROP	IDEN			Property annotation
C	PROP	LEAS			Lease line (exterior / ground lease)
C	PROP	RWAY			Right of ways
PAVEMENTS					
C	PVMT	ASPH			Pavement pattern - asphalt
C	PVMT	CONC			Pavement pattern - concrete
C	PVMT	GROV			Pavement Grooving
C	PVMT	GRVL			Pavement pattern - gravel
C	PVMT	IDEN			Road, parking lot, railroad, airfield pavement annotation
C	PVMT	MRKG			Pavement markings
C	PVMT	MRKG	WHIT		Roadway markings (white)
C	PVMT	MRKG	YELO		Roadway markings (yellow)
C	PVMT	PATT			Joint patterns, text and dimensions
C	PVMT	ROAD			Roads, parking lots, railroads, airfield pavements
C	PVMT	SBMP			Speed bumps on roadways
C	PVMT	SIGN			Other signs
RAILROADS					
C	RAIL	BRDG			Railroad bridge area
C	RAIL	BRDG	CNTR		Railroad bridge centerline
C	RAIL	CNTR			Centerlines
C	RAIL	CNTR	IDEN		Centerline annotation
C	RAIL	EQPM			Railroad equipment (e.g., gates, signals)
C	RAIL	IDEN			Railroad - annotation
C	RAIL	TRAK			Railroads
C	RAIL	YARD			Railroad Yard

Discipline	Major	Minor1	Minor2	Status	Description
ROADS, STREETS, HIGHWAYS					
C	ROAD	ASPH			Road outlines-asphalt surface
C	ROAD	CNTR			Centerlines
C	ROAD	CNTR	IDEN		Centerline annotation
C	ROAD	CONC			Road outlines-concrete surface
C	ROAD	CURB			Curbs
C	ROAD	DRIV			Driveway edge of pavement
C	ROAD	DRIV	CNTR		Driveway centerline
C	ROAD	GRAL			Guardrails
C	ROAD	GRVL			Road outlines-gravel surface
C	ROAD	IDEN			Road, curb, and guardrail annotation
C	ROAD	MRKG			Pavement markings
C	ROAD	SHLD			Roadway shoulder
C	ROAD	SIGN			Roadway signs
C	ROAD	UPVD			Road outlines-unpaved
RUNWAYS					
C	RUNW	ARST			Runway Arresting Gear Location
C	RUNW	ARST			Runway arresting area
C	RUNW	BLST			Runway blast pad
C	RUNW	CLRW			Runway clearway
C	RUNW	CNTR			Runway Centerline
C	RUNW	CNTR	MRKG		Centerline markings
C	RUNW	DISP			Displaced threshold
C	RUNW	DIST			Fixed distance markings
C	RUNW	EDGE			Airfield runway edges
C	RUNW	ENDP			Runway endpoint
C	RUNW	ENDP	MRKG		Runway label marking point
C	RUNW	IDEN			Runway numbers and letters
C	RUNW	INTS			Runway intersection
C	RUNW	LAHS			Runway land and hold short area
C	RUNW	SAFT			Runway Safety Area
C	RUNW	SEGM			Runway segment
C	RUNW	SHLD			Shoulder markings
C	RUNW	SHLD			Runway Shoulder
C	RUNW	SIDE			Side stripes
C	RUNW	SIGN			Airfield signs on the runway such as distance remaining signs
C	RUNW	STWY			Runway stopway markings
C	RUNW	TDZM			Touchdown zone markers
C	RUNW	THRS			Threshold markers
SEAPLANES					
C	SEAP	BUOY			Seaplane navigation buoy
C	SEAP	DOCK			Seaplane dock
C	SEAP	LNDA			Seaplane landing area
C	SEAP	RAMP	CNTR		Seaplane ramp centerline
C	SEAP	RAMP			Seaplane ramp site

Discipline	Major	Minor1	Minor2	Status	Description
SECTIONS					
C	SECT	IDEN			Component identification numbers
C	SECT	MBND			Material beyond section cut
C	SECT	MCUT			Material cut by section
C	SECT	PATT			Textures and hatch patterns
SITE FEATURES					
C	SITE	EROS			Riprap, revetments/stone protection, breakwaters, dikes, jetties, and drains
C	SITE	EROS	IDEN		Riprap, revetment/stone protection, breakwater, dike, jetty, and drain annotation
C	SITE	FENC			Fences and handrails
C	SITE	FENC	IDEN		Fence, handrail, ramp, sign, and trail annotation
C	SITE	FENP			Fence Posts
C	SITE	GATE			Gates along fences or other barriers intended to restrict access
C	SITE	IDEN			Site improvement annotation
C	SITE	IMPR			Site improvements (channel or levee features)
C	SITE	SECU	CMRA		Security camera locations outside of buildings
C	SITE	STRC			Structures (bridges, sheds, foundation pads, footings, etc.)
C	SITE	STRS			Stairs and ramps
C	SITE	WALK			Walks, trails and bicycle paths
SANITARY SEWER					
C	SSWR	PIPE		ABND	Abandoned piping
C	SSWR	DEVC			Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves
C	SSWR	DEVC	ANOD		Anode
C	SSWR	DEVC	ANOT		Anode test station
C	SSWR	DEVC	DNWS		Downspout point
C	SSWR	DEVC	DSCH		Discharge point
C	SSWR	DEVC	GRIT		Grit chamber
C	SSWR	DEVC	GRSE		Grease trap
C	SSWR	DEVC	IDEN		Identifier tags, symbol modifier, and text
C	SSWR	DEVC	INLT		inlet
C	SSWR	DEVC	METR		Meters
C	SSWR	DEVC	NEUT		Neutralizer
C	SSWR	DEVC	OILW		Oil water separator
C	SSWR	DEVC	PUMP		Pump
C	SSWR	DEVC	RECT		rectifier
C	SSWR	DEVC	TRET		Treatment unit
C	SSWR	DEVC	VLVE		valve
C	SSWR	FILT			Filtration beds
C	SSWR	FILT	IDEN		Identifier tags, symbol modifier, and text
C	SSWR	FLOW			Flow direction arrows
C	SSWR	FTTG			Caps and cleanouts
C	SSWR	IDEN			Identifier tags, symbol modifier, and text
C	SSWR	JBOX			Junction boxes and manholes
C	SSWR	JBOX	IDEN		Identifier tags, symbol modifier, and text
C	SSWR	LAGN			Lagoons
C	SSWR	LEAC			Leach field
C	SSWR	LEAC	LAGN		Lagoon

Discipline	Major	Minor1	Minor2	Status	Description
C	SSWR	LEAC	SBED		Sludge bed
C	SSWR	MAIN			Sanitary sewer piping
C	SSWR	MHOL			Sanitary sewer manholes
C	SSWR	NITF			Nitrification drain fields
C	SSWR	PLNT			Treatment plants
C	SSWR	PUMP			Booster pump stations
C	SSWR	RSVR	IDEN		Identifier tags, symbol modifier, and text
C	SSWR	SERV			Sanitary sewer service piping
C	SSWR	SIGN			Surface markers/signs
C	SSWR	SITE			A wastewater utility company or organization's certificated area of jurisdiction of responsibility as approved by a federal, state, or local utility regulatory authority
C	SSWR	STNS	IDEN		Identifier tags, symbol modifier, and text
C	SSWR	TANK			Septic tanks
C	SSWR	TANK	DISP		Disposal tanks
C	SSWR	TRET			A wastewater treatment plant and all appurtenant equipment, buildings, and facilities relating to water treatment
STRUCTURES					
C	STRC	IDEN			Bridges, piers, breakwaters, docks, floats, etc. - annotation
C	STRC	OTLN			Bridges, piers, breakwaters, docks, floats, etc. - outlines
C	STRC	TOWR			Tower
STORM SEWER					
C	STRM	PIPE		ABND	Abandoned piping
C	STRM	AFFF			AFFF lagoon/detention pond
C	STRM	CHUT			Chutes and concrete erosion control structures
C	STRM	CULV			Culverts
C	STRM	CULV	CLIN		Culvert centerline
C	STRM	CULV	LINE		Culvert line
C	STRM	DEVC			Downspouts, flumes, oil/water separators, and flap gates
C	STRM	DRAN	DIVL		Drainage divide line
C	STRM	DRAN	IDEN		Identifier tags, symbol modifier, and text
C	STRM	DRAN	LINE		Open drainage line
C	STRM	EROS			Erosion control (riprap)
C	STRM	FLOD			Flood area
C	STRM	FLOW			Flow direction arrows
C	STRM	FMON			Flow monitoring station
C	STRM	FTTG			Caps and cleanouts
C	STRM	HDWL			Headwalls and endwalls
C	STRM	IDEN			Identifier tags, symbol modifier, and text
C	STRM	INLT			Inlets (curb, surface, and catch basins)
C	STRM	JBOX			Junction
C	STRM	LAGN			Lagoons, ponds, watersheds, and basins
C	STRM	LAGN	BASN		Drainage basin
C	STRM	LAGN	OPEN		Open drainage area
C	STRM	LAGN	STIL		Stilling basin
C	STRM	LAGN	RPNT		Reservoir point
C	STRM	MAIN			Storm sewer piping

Discipline	Major	Minor1	Minor2	Status	Description
C	STRM	MHOL			Manholes
C	STRM	PUMP			Pump stations
C	STRM	ROOF			Roof drain line
C	STRM	RSVR	IDEN		Identifier tags, symbol modifier, and text
C	STRM	SERV			Storm sewer service piping
C	STRM	SIGN			Surface markers/signs
C	STRM	STAT	PUMP		Pump station
C	STRM	STNS	IDEN		Identifier tags, symbol modifier, and text
C	STRM	STRC			Storm drainage, headwalls, inlets, manholes, culverts, and drainage structures
C	STRM	SUBS			Subsurface drain piping
SURVEY					
C	SURV	DATA			Survey data (benchmarks and horizontal control points or monuments)
C	SURV	IDEN			Survey, baseline, and control line annotation
C	SURV	LINE			Survey, baseline, and control lines
TAXIWAYS					
C	TAXI	CNTR			Taxiway centerline
C	TAXI	CNTR	IDEN		Centerline annotation
C	TAXI	CNTR	MRKG		Centerline markings
C	TAXI	EDGE			Edge markings
C	TAXI	HOLD			Holding lines
C	TAXI	IDEN			Annotation
C	TAXI	INTS			Taxiway intersection
C	TAXI	JOIN			Taxiway joints
C	TAXI	OTLN			Taxiway - outlines
C	TAXI	SHLD			Shoulder transverse stripes
C	TAXI	SIGN			Airfield signs on the taxiway such as taxiway designator, hold short and directional signs
TOPOGRAPHY					
C	TOPO	AUCO			Noise Complaint
C	TOPO	AUST			Noise Monitoring Station
C	TOPO	AUZN			Noise Contour/Zone
C	TOPO	BKLN			Breaklines
C	TOPO	BORE			Boring locations
C	TOPO	COOR			Coordinate grid ticks and text
C	TOPO	DTMP			DTM points
C	TOPO	DTMT			DTM triangles
C	TOPO	FLZN			Flood Zone
C	TOPO	MAJR			Major contours
C	TOPO	MAJR	IDEN		Major contours - annotation
C	TOPO	MINR			Minor contours
C	TOPO	MINR	IDEN		Minor contours - annotation
C	TOPO	MINR	ONEF		Minor contours - One Foot Intervals
C	TOPO	MINR	TWOF		Minor contours - Two Foot Intervals
C	TOPO	RNYE			Runway centerline elevation point
C	TOPO	RTWL			Retaining wall
C	TOPO	SHOR			Shorelines, land features, and references
C	TOPO	SHOR			Shoreline

Discipline	Major	Minor1	Minor2	Status	Description
C	TOPO	SLOP			Cut/fill slopes
C	TOPO	SLOP	FILL		Cut/fill slopes
C	TOPO	SLOP	IDEN		Cut/fill slope, top/toe slope annotation
C	TOPO	SLOP	TOPT		Top/toe slopes
C	TOPO	SLTP			Top/toe slopes
C	TOPO	SOUN			Soundings
C	TOPO	SPOT			Spot elevations
C	TOPO	SPOT	IDEN		Spot elevations - annotation
C	TOPO	WATR			Water area
UTILITIES GENERAL					
C	UTIL	AREA			Utility area
C	UTIL	COND			Conduit centerline
C	UTIL	DIST			Energy distribution control facility
C	UTIL	SOLR			Solar panel
C	UTIL	TANK			Tank
C	UTIL	TUNL			Tunnel centerline
C	UTIL	UDEF			Undefined feature
C	UTIL	UDOR			Utility utilidor line
C	UTIL	UNDL			Undefined utility line

Common Layer Names – Electrical (E)

Discipline	Major	Minor1	Minor2	Status	Description
GENERAL INFORMATION					
E	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text
E	ANNO	KEYN			Reference keynotes with associated leaders
E	ANNO	NOTE			General notes and general remarks
E	ANNO	NPLT			Non-plotting graphic information
E	ANNO	PATT			Miscellaneous patterning and hatching
E	ANNO	REFR			Reference files (AutoCAD users only, see Chapter 4)
E	ANNO	SYMB			Miscellaneous symbols
E	ANNO	TEXT			Miscellaneous text and callouts with associated leaders
AIRFIELDS					
E	AFLD	CIRC	CTRL		Control and monitoring circuits
E	AFLD	CIRC	MULT		Multiple circuits
E	AFLD	CIRC	SERS		Series circuits
E	AFLD	VALT			Airfield lighting vaults
ALARM SYSTEMS					
E	ALRM	EQPM			Alarm system equipment
E	ALRM	IDEN			Identifier tags, symbol modifier, and text
E	ALRM	SYMB			Miscellaneous alarm system symbols
BEACONS					
E	BCNS	IDEN			Identifier tags, symbol modifier, and text
E	BCNS	MISC			Miscellaneous navaids - windcones and beacons
E	BCNS	STRB			Strobe beacons
BELL SYSTEMS					
E	BELL	EQPM			Bell system equipment
E	BELL	IDEN			Identifier tags, symbol modifier, and text
E	BELL	SYMB			Bell system symbols
CABLE SYSTEMS					
E	CABL	COAX			Coax cable
E	CABL	FIBR			Fiber optics cable
E	CABL	IDEN			Cable identifiers
E	CABL	MULT			Multi-conductor cable
E	CABL	TRAY			Cable trays and wireways
CATHODIC PROTECTION SYSTEM					
E	CATH	ANOD			Sacrificial anode system
E	CATH	CURR			Impress current system
E	CATH	IDEN			Identifier tags, symbol modifier, and text
E	CATH	TEST			Test stations
E	CATV	IDEN			Identifier tags, symbol modifier, and text
E	CATV	SYMB			Cable television system symbols
CLOSED-CIRCUIT TELEVISION SYSTEM					
E	CCTV	IDEN			Identifier tags, symbol modifier, and text
E	CCTV	SYMB			Closed-circuit television system symbols
CIRCUITS					
E	CIRC	CTRL			Control and monitoring circuits
E	CIRC	IDEN			Identifier tags, symbol modifier, and text

Discipline	Major	Minor1	Minor2	Status	Description
E	CIRC	MULT			Multiple circuits
E	CIRC	SERS			Series circuits
CLOCK SYSTEMS					
E	CLOK	IDEN			Identifier tags, symbol modifier, and text
E	CLOK	SYMB			Clock system symbols
COMMUNICATIONS					
E	COMM	ACCS			Access point
E	COMM	AIRP			Air pipe line
E	COMM	COVR			Access coverage area
E	COMM	DUCT			Duct line
E	COMM	EQPM			Other communications distribution equipment
E	COMM	EQPM	AIRP		Air pressure device
E	COMM	EQPM	AMPL		Amplifier
E	COMM	EQPM	ANTL		Antenna line
E	COMM	EQPM	ANTS		Antenna site
E	COMM	EQPM	ATTN		Attenuator
E	COMM	EQPM	BOTH		Telephone booth site
E	COMM	EQPM	CLAD		Cable ladder
E	COMM	EQPM	CRCK		Cable rack line
E	COMM	EQPM	DSPL		Dbsplice site
E	COMM	EQPM	GPLN		Ground plane
E	COMM	EQPM	GPNT		Ground point
E	COMM	EQPM	GWAV		Ground wave
E	COMM	EQPM	IMPD		Impedance matching point
E	COMM	INET	SITE		Internet center site
E	COMM	EQPM	PULB		Pullbox site
E	COMM	EQPM	RELY		Relay station
E	COMM	EQPM	RISR		Riser
E	COMM	EQPM	RPTR		Repeater
E	COMM	EQPM	SATE		Satellite
E	COMM	EQPM	SENS		Sensor
E	COMM	EQPM	SPKR		Speaker
E	COMM	EQPM	SPLC		Splice
E	COMM	EQPM	SPLT		Splitter
E	COMM	EQPM	TELE		Telephone
E	COMM	EQPM	TERM		Terminator
E	COMM	EQPM	TRML		Terminal
E	COMM	EQPM	TWIS		Twisted pair line
E	COMM	HAND			Handhole
E	COMM	JBOX			Communication junction or pull boxes, man/handholes, pedestals, splices
E	COMM	LCAP			Load capacitor
E	COMM	LCOL			Load coil
E	COMM	LINE	CBRG		Cable bridge line
E	COMM	LINE	LOOP		Service loop
E	COMM	LINE	SEGL		Segmented cable line
E	COMM	LINE	SEGS		Segmented cable site

Discipline	Major	Minor1	Minor2	Status	Description
E	COMM	LOSL			Line of sight line
E	COMM	MCNV			Media converter
E	COMM	MHOL			Manhole site
E	COMM	MHOP			Multihop polygon area
E	COMM	NETS			Network systems site
E	COMM	OVHD			Overhead communications/telephone lines
E	COMM	OVHD	IDEN		Identifier tags, symbol modifier and text
E	COMM	PATH	SITE		Path node site
E	COMM	PATH	SLIN		Path segment line
E	COMM	PEDS			Pedestal site
E	COMM	RADI			Radio
E	COMM	RADI	RCVR		Radio receiver site
E	COMM	RADI	TRNS		Radio transmitter site
E	COMM	RADR			Radar site
E	COMM	SIGN			Marker
E	COMM	UNDR			Underground communications/telephone lines
E	COMM	UNDR	IDEN		Identifier tags, symbol modifier and text
E	COMM	VALT			Communications vault site
E	COMM	VIDS			Video site
E	COMM	VOIC			Voice switch site
E	COMM	VSIT			Vertical site
E	COMM	WAVG			Waveguide line
DETAIL INFORMATION					
E	DETL	GRPH			Graphics, gridlines, non-text items
E	DETL	INPD			Inch-pound-specific dimensions and notes
E	DETL	METR			Metric-specific dimensions and notes
DIAGRAM INFORMATION					
E	DIAG	GRPH			Graphics, gridlines, non-text items
E	DIAG	IDEN			Identifier tags, symbol modifier and text
E	DIAG	INPD			Inch-pound-specific dimensions and notes
E	DIAG	METR			Metric-specific dimensions and notes
CENTRAL DICTRATION SYSTEMS					
E	DICT	IDEN			Identifier tags, symbol modifier, and text
E	DICT	SYMB			Central dictation system symbols
E	DISC	INFO			Clearances and working space information (NEC code, etc.)
UNDERGROUND DUCTBANKS (to be used when multiple systems are in one ductbank system)					
E	DUCT	MULT			Ductbank
E	DUCT	MULT	IDEN		Identifier tags, symbol modifier and text
ELECTRIC					
E	ELEC	DEVC			Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers
E	ELEC	JBOX			Junction boxes, pull boxes, manholes, handholes, pedestals, splices
E	ELEC	SUBS			Other substation equipment
E	ELEC	SWCH			Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches
E	ELEC	VALT			Vaults
ENERGY MONITORING CONTROL SYSTEMS					

Discipline	Major	Minor1	Minor2	Status	Description
E	EMCS	EQPM			Energy monitoring control system equipment
E	EMCS	EQPM	DUCT		Ductbank line
E	EMCS	EQPM	JBOX		Junction
E	EMCS	EQPM	SIGN		Marker
E	EMCS	IDEN			Identifier tags, symbol modifier, and text
E	EMCS	SYMB			Energy monitoring control system symbols
E	EMER	EMER			Emergency systems equipment
FLOOR INFORMATION					
E	FLOR	IDEN			Room name, space identification text (copied from Architectural - Floor Plan model file)
E	FLOR	NUMB			Room/space identification number and symbol (copied from Architectural - Floor Plan model file)
GROUND SYSTEM					
E	GRND	CIRC			Circuits
E	GRND	DIAG			Ground system diagram
E	GRND	EQUI			Equipotential ground system
E	GRND	REFR			Reference ground system
INTERCOM SYSTEM					
E	INTC	IDEN			Identifier tags, symbol modifier, and text
E	INTC	SYMB			Intercom/PA system symbols
LIGHTING					
E	LITE	APPR			Approach lights
E	LITE	APRN			Apron Lighting
E	LITE	CIRC			Lighting circuits (including crosslines and homeruns)
E	LITE	CIRC	NUMB		Lighting circuit numbers (e.g., panel/circuit number, wire/conduit size)
E	LITE	CLNG			Ceiling mounted (surface/pendant) fixtures
E	LITE	CONS			Constant Current Regulators
E	LITE	DIST			Distance and arresting gear markers and lights
E	LITE	EMER			Emergency fixtures (outline of light (if ceiling mounted) should go on E-LITE-CLNG)
E	LITE	EXIT			Exit fixtures (outline of light (if ceiling mounted) should go on E-LITE-CLNG)
E	LITE	EXTR			Exterior lights
E	LITE	EXTR	IDEN		Identifier tags, symbol modifier, and text
E	LITE	FLOR			Floor mounted fixtures (e.g., stage)
E	LITE	IDEN			Light fixture identifier tags
E	LITE	JBOX			Junction boxes
E	LITE	LANE			Hoverlane, taxilane, and helipad lights
E	LITE	OBST			Obstruction lights
E	LITE	PANL			Main distribution panels, switchboards, lighting panels
E	LITE	RNWY	GARD		Runway guard lights
E	LITE	ROOF			Roof lighting
E	LITE	RUNW	EDGE		Runway edge lights
E	LITE	RUNW	TDZN		Runway Touchdown Zone lights
E	LITE	RUNW	CNTR		Runway Centerline lights
E	LITE	RUNW	DTGS		Runway Distance to go lights
E	LITE	SIGN			Taxiway guidance signs
E	LITE	SPCL			Special fixtures

Discipline	Major	Minor1	Minor2	Status	Description
E	LITE	SWCH			Lighting contactors, photoelectric controls, low-voltage lighting controls, etc.
E	LITE	TAXI	CNTL		Taxiway centerline lights
E	LITE	TAXI	EDGE		Taxiway edge lights
E	LITE	THRS			Threshold lights
E	LITE	WALL			Wall mounted fixtures
LIGHTNING PROTECTION SYSTEM					
E	LTNG	COND			Lightning protection conductors
E	LTNG	TERM			Lightning protection terminals
NURSE CALL / PAGING SYSTEMS					
E	NURS	IDEN			Identifier tags, symbol modifier, and text
E	NURS	SYMB			Nurse call/paging system symbols
POLES					
E	POLE	GUYS			Guying equipment
E	POLE	GUYS	IDEN		Guying equipment identifier tags, symbol modifiers, and text
E	POLE	IDEN			Utility pole identifier tags, symbol modifier, and text
E	POLE	UTIL			Utility poles
POWER					
E	POWR	BUSW			Busways and wireways
E	POWR	CABL			Cable trays
E	POWR	CIRC			Power circuits (including crosslines and homeruns)
E	POWR	CIRC	NUMB		Power circuit numbers (e.g., panel/circuit number, wire/conduit size)
E	POWR	CLNG			Ceiling outlets (receptacles and switches)
E	POWR	FEED			Feeders
E	POWR	GENR			Generators and auxiliary equipment
E	POWR	JBOX			Junction boxes
E	POWR	MOTR			Motors and utilization equipment
E	POWR	PANL			Panelboards, switchboards, MCC, unit substations
E	POWR	POLE	COND		Utility pole conduit
E	POWR	POLE	GUYP		Utility pole guy point
E	POWR	SUBS			Other substation equipment
E	POWR	SWCH			Fuse cutouts, motor starters, contactors, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches
E	POWR	URAC			Underfloor raceways
E	POWR	XFMR	PADM		Pad mounted transformers
E	POWR	XFMR	POLE		Pole mounted transformers
E	POWR	WALL			Wall/floor outlets (receptacles and switches)
PRIMARY ELECTRICAL CABLES					
E	PRIM	OVHD			Overhead electrical utility lines
E	PRIM	OVHD	IDEN		Identifier tags, symbol modifier, and text
E	PRIM	UNDR			Underground electrical utility lines
E	PRIM	UNDR	IDEN		Identifier tags, symbol modifier, and text
SECONDARY ELECTRICAL CABLES					
E	POWR	CAPC			Capacitor
E	POWR	HBLT			Head bolt outlet
E	POWR	METR			Meter
E	POWR	PEDS			Pedestal
E	POWR	REGL			Regulator

Discipline	Major	Minor1	Minor2	Status	Description
E	POWR	RISR			Riser
E	POWR	SIGN			Marker
E	POWR	SITE			Utility electric utility site
E	POWR	SPLC			Splice
E	SECD	OVHD			Overhead electrical utility lines
E	SECD	OVHD	IDEN		Identifier tags, symbol modifier, and text
E	SECD	UNDR			Underground electrical utility lines
E	SECD	UNDR	IDEN		Identifier tags, symbol modifier, and text
SECURITY SYSTEMS					
E	SERT	ACCS			Access control system symbols
E	SERT	BURD			Buried sensors
E	SERT	CLNG			Ceiling mounted sensors
E	SERT	FLOR			Floor mounted sensors
E	SERT	IDEN			Identifier tags, symbol modifier, and text
E	SERT	UNDR			Buried sensors
E	SERT	WALL			Wall mounted sensors
SOUND / PA SYSTEMS					
E	SOUN	IDEN			Identifier tags, symbol modifier, and text
E	SOUN	SYMB			Sound system symbols
SPECIAL SYSTEMS					
E	SPCL	IDEN			Special systems (UMCS, EMCS, CATV, etc.) identifier tags, symbol modifier, and text
E	SPCL	JBOX			Junction boxes
E	SPCL	PANL			Panelboards, backing boards, patch panel racks
E	SPCL	SRFS			Surface Sensor System
E	SPCL	SYST			Special systems (UMCS, EMCS, CATV, etc.)
E	SPCL	TRAF			Traffic signal system
E	SPCL	TRAF	IDEN		Traffic signal identifier tags, symbol modifier, and text
TV ANTENNA SYSTEMS					
E	TVAN	IDEN			Identifier tags, symbol modifier, and text
E	TVAN	SYMB			TV antenna system symbols

Common Layer Names – Fire Protection (F)

Discipline	Major	Minor1	Minor2	Status	Description
AQUEOUS FILM FORMING FOAM SYSTEM					
F	AFFF	EQPM			Equipment
F	AFFF	PIPE			Piping
ALARM SYSTEM					
F	ALRM	DTCT			Smoke/heat/other detectors
F	ALRM	INDC			Indicating appliances
F	ALRM	MANL			Manual fire alarm pull stations
F	ALRM	PHON			Fire service or emergency telephone stations
GENERAL INFORMATION					
F	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text
F	ANNO	KEYN			Reference keynotes with associated leaders
F	ANNO	NOTE			General notes and general remarks
F	ANNO	NPLT			Non-plotting graphic information
F	ANNO	PATT			Miscellaneous patterning and hatching
F	ANNO	REFR			Reference files (AutoCAD users only, see Chapter 4)
F	ANNO	SYMB			Miscellaneous symbols
F	ANNO	TEXT			Miscellaneous text and callouts with associated leaders
CO2 SPRINKLER SYSTEM					
F	CO2S	EQPM			Equipment
F	CO2S	PIPE			CO2 piping or CO2 discharge nozzle piping
CONTROL PANELS					
F	CTRL	PANL			Control panels
DETAIL INFORMATION					
F	DETL	GRPH			Graphics, gridlines, non-text items
F	DETL	INPD			Inch-pound-specific dimensions and notes
F	DETL	METR			Metric-specific dimensions and notes
FLOOR INFORMATION					
F	FLOR	IDEN			Room name, space identification text (copied from Architectural - Floor Plan model file)
F	FLOR	NUMB			Room/space identification number and symbol (copied from Architectural - Floor Plan model file)
HALON SYSTEM					
F	HALN	EQPM			Halon equipment
F	HALN	PIPE			Halon piping
INERT GAS					
F	IGAS	EQPM			Inert gas equipment
F	IGAS	PIPE			Inert gas piping
LIGHTING					
F	LITE	EMER			Emergency fixtures
F	LITE	EXIT			Exit fixtures
EGRESS REQUIREMENTS					
F	LSFT	EGRE			Egress requirements designator
F	LSFT	OCCP			Occupant load for egress capacity
F	LSFT	TRVL			Maximum travel distances
FIRE PROTECTION / SUPPRESSION / ALARM / DETECTION EQUIPMENT					

Discipline	Major	Minor1	Minor2	Status	Description
F	PROT	CABN			Fire hose cabinets
F	PROT	EXTN			Fire extinguishers and fire extinguisher cabinets
F	PROT	HOSE			Fire hoses
FIRE RATINGS					
F	RATE	DOOR			Door fire ratings
F	RATE	WALL			Wall fire ratings
SMOKE / PRESSURIZATION CONTROL					
F	SMOK	DAMP			Dampers
SPRINKLER SYSTEM					
F	SPRN	CLHD			Sprinkler - ceiling heads
F	SPRN	COMB			Combination system
F	SPRN	OTHD			Sprinkler - other heads
F	SPRN	OTHR			Sprinkler - other
F	SPRN	PEND			Sprinkler - pendant
F	SPRN	PIPE			Sprinkler piping
F	SPRN	STAN			Standpipe system
WATER SUPPLY AND DISTRIBUTION					
F	WATR	CONN			Fire department connections
F	WATR	HYDR			Hydrants
F	WATR	PIPE			Piping
F	WATR	PUMP			Fire pumps

Common Layer Names – Geotechnical (G)

Discipline	Major	Minor1	Minor2	Status	Description
GENERAL INFORMATION					
G	ANNO	NPLT			Non-plotting graphic information
G	ANNO	PATT			Miscellaneous patterning and hatching
G	ANNO	REFR			Reference files (AutoCAD users only, see Chapter 4)
G	ANNO	SYMB			Miscellaneous symbols
G	ANNO	TEXT			Miscellaneous text and callouts with associated leaders
G	ANNO	TTLB			Border and title block linework
GRIDS					
G	GRID	EXTR			Column grid outside building
G	GRID	IDEN			Column grid tags
PLAN / OUTLINE					
G	PLAN	OTLN			Floor outline/perimeter/building footprint
SITE INFORMATION					
G	SITE	OTLN			Site plan - key map

Common Layer Names – Hazardous Materials (H)

Discipline	Major	Minor1	Minor2	Status	Description
GENERAL INFORMATION					
H	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text
H	ANNO	KEYN			Reference keynotes with associated leaders
H	ANNO	NPLT			Non-plotting graphic information
H	ANNO	PATT			Miscellaneous patterning
H	ANNO	SYMB			Reference bubbles, matchlines and breaklines
H	ANNO	TEXT			Detail title text, text and associated leaders, notes
BUILDINGS					
H	BLDG	IDEN			Annotation
H	BLDG	OTLN			Command posts, information centers
DECONTAMINATION					
H	DECN	EQPM			Decontamination equipment
H	DECN	IDEN			Annotation
DETAIL INFORMATION					
H	DETL	GRPH			Graphics, gridlines, non-text items
H	DETL	INPD			Inch-pound-specific dimensions and notes
H	DETL	METR			Metric-specific dimensions and notes
DISPOSAL AREAS					
H	DISP	HAZW			Hazardous waste
H	DISP	IDEN			Annotation
H	DISP	MUNT			Munitions
H	DISP	TANK			Spill containment tanks
FIXTURES					
H	FIXT	EYEW			Emergency eyewashes
H	FIXT	SHOW			Emergency showers
MONITORING SYSTEMS					
H	MNST	AIRQ			Air quality
H	MNST	GWTR			Ground water
H	MNST	IDEN			Annotation
H	MNST	LAND			Landfill gas
H	MNST	SOIL			Soil gas
H	MNST	SWTR			Surface water
POLLUTION AREAS					
H	POLL	CONC			Polluted area of concern
H	POLL	IDEN			Annotation
H	POLL	ORIG			Point of pollution origin
H	POLL	POTN			Potential spill, emission, or release source
SAMPLE POINTS					
H	SAMP	AIRS			Air samples
H	SAMP	BIOL			Biological samples
H	SAMP	GWTR			Ground water samples
H	SAMP	IDEN			Annotation
H	SAMP	MAGN			Magnetometer location points

Discipline	Major	Minor1	Minor2	Status	Description
H	SAMP	SEDI			Sediment samples
H	SAMP	SOIL			Soil samples
H	SAMP	SOLI			Solid material samples
H	SAMP	SWTR			Surface water samples
H	SAMP	WAST			Waste samples
SECTIONS					
H	SECT	IDEN			Component identification numbers
H	SECT	MBND			Material beyond section cut
H	SECT	MCUT			Material cut by section
H	SECT	PATT			Textures and hatch patterns
STORAGE FACILITIES					
H	STOR	HAZM			Hazardous materials
H	STOR	HAZW			Hazardous waste
H	STOR	IDEN			Annotation

Common Layer Names – Interiors (I)

Discipline	Major	Minor1	Minor2	Status	Description
GENERAL INFORMATION					
I	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text
I	ANNO	KEYN			Reference keynotes with associated leaders
I	ANNO	NOTE			General notes and general remarks
I	ANNO	NPLT			Non-plotting graphic information
I	ANNO	PATT			Miscellaneous patterning
I	ANNO	SYMB			Reference bubbles, matchlines and breaklines
I	ANNO	TEXT			Detail title text, text and associated leaders, notes
DETAIL INFORMATION					
I	DETL	GRPH			Graphics, gridlines, non-text items
I	DETL	INPD			Inch-pound-specific dimensions and notes
I	DETL	METR			Metric-specific dimensions and notes
ELEVATIONS					
I	ELEV	CASE			Wall mounted casework
I	ELEV	FIXT			Miscellaneous fixtures
I	ELEV	FNSH			Finishes, woodwork and trim
I	ELEV	IDEN			Component identification numbers
I	ELEV	PATT			Textures and hatch patterns
I	ELEV	PFIX			Plumbing fixtures in elevation
I	ELEV	SIGN			Signage
EQUIPMENT					
I	EQPM	ACCS			Equipment access
I	EQPM	CHLD			Child development (play toys, teaching rugs, play forms)
I	EQPM	COPY			Copiers, fax machines, office equipment
I	EQPM	FIXD			Fixed equipment
I	EQPM	IDEN			Equipment identification numbers
I	EQPM	MEDI			Medical (exam beds, dental chairs, etc.)
I	EQPM	MOVE			Moveable equipment
I	EQPM	NICN			Not in contract equipment
I	EQPM	OVHD			Overhead, ceiling mounted, and suspended equipment
I	EQPM	STOR			Storage equipment
FLOORING ITEMS AND MATERIALS					
I	FLOR	SIGN			Signage
FURNISHINGS					
I	FURN	ACCS			Accessories (vestibule matts, partitions, draperies, clocks, trashcans, lecturns, lamps, etc.)
I	FURN	ADPC			Automated Data Processing Components
I	FURN	ARTW			Artwork
I	FURN	CASE			Case goods (desks, credenzas, beds, dressers, nightstands, wardrobes, etc.)
I	FURN	FLOR			Flooring (carpet, rugs, etc.)
I	FURN	FREE			Free-standing furnishings (desks, beds, tables, dressers, credenzas, case goods)
I	FURN	GRID			Planning grid/modular outline
I	FURN	IDEN			Furniture code identification
I	FURN	MISC			Miscellaneous furniture

Discipline	**Major**	**Minor1**	**Minor2**	**Status**	**Description**
I	FURN	PLNT			Plants
I	FURN	SEAT			Chairs, sofas, etc.
I	FURN	STOR			File cabinets, high density storage, shelving, storage cabinets
SYSTEM FURNITURE					
I	SYST	BIDS			Baggage information display system equipment used in an airport terminal
I	SYST	CUTE			Common use terminal equipment in an airport terminal
I	SYST	FIDS			Flight information display system equipment used in an airport terminal
I	SYST	FURN			Furniture
I	SYST	IDEN			Code identification
I	SYST	LITE			Lighting components
I	SYST	PATT			Patterns
I	SYST	PNLS			Panels
I	SYST	POWR			Power, communication components
I	SYST	SECU	CMRA		Security camera locations inside buildings
I	SYST	STOR			Storage components
I	SYST	WALL			Systems furniture partition walls
I	SYST	WKSF			Work surface components

Common Layer Names – Landscaping (L)

Discipline	Major	Minor1	Minor2	Status	Description
GENERAL INFORMATION					
L	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text
L	ANNO	KEYN			Reference keynotes with associated leaders
L	ANNO	NOTE			General notes and general remarks
L	ANNO	NPLT			Non-plotting graphic information
L	ANNO	PATT			Miscellaneous patterning
L	ANNO	SYMB			Reference bubbles, matchlines and breaklines
L	ANNO	TEXT			Detail title text, text and associated leaders, notes
DETAIL INFORMATION					
L	DETL	CABS			Cabinets, enclosures
L	DETL	CONC			Concrete
L	DETL	ERTH			Earth
L	DETL	FENC			Fencing
L	DETL	FILL			Fill/cover material
L	DETL	FURN			Furniture, furnishings
L	DETL	GATE			Gate
L	DETL	GENF			General features (miscellaneous items)
L	DETL	GRAS			Grass, sod
L	DETL	GRPH			Graphics, gridlines, non-text items
L	DETL	INPD			Inch-pound-specific dimensions and notes
L	DETL	METR			Metric-specific dimensions and notes
L	DETL	STRC			Structural metal, supports
L	DETL	TKST			Tank Site
L	DETL	VEGI			Planting details
L	DETL	VLVE			Valves, fittings
L	DETL	WIRE			Wiring
IRRIGATION SYSTEM					
L	IRRG	COVR			Irrigation coverage, spray distribution patterns
L	IRRG	EQPM			Equipment (e.g., controllers, valves, RPBPs, etc.)
L	IRRG	HEAD			Irrigation heads, bubblers, and drip irrigation emitters
L	IRRG	IDEN			Annotation
L	IRRG	PIPE			Piping
L	IRRG	SPKL			Sprinklers
PLANT AND LANDSCAPING MATERIAL					
L	PLNT	BEDS			Planting beds
L	PLNT	BUSH			Bushes and shrubs (e.g., evergreen, deciduous)
L	PLNT	BUSH	LINE		Bush and shrub line
L	PLNT	CTNR			Containers or planters
L	PLNT	GRND			Groundcover and vines
L	PLNT	IDEN			Annotation
L	PLNT	MLCH			Mulches - organic and inorganic
L	PLNT	PLTS			Planting plants (e.g., ornamental annuals and perennials)
L	PLNT	SHAD			Shadow areas

Discipline	**Major**	**Minor1**	**Minor2**	**Status**	**Description**
L	PLNT	SPRG			Sprigs
L	PLNT	TREE			Trees (e.g., evergreen, deciduous, etc.)
L	PLNT	TREE	LINE		Tree line
L	PLNT	TURF			Lawn areas (turfing limits)
SITE IMPROVEMENTS					
L	SITE	BRDG			Bridges
L	SITE	DECK			Decks
L	SITE	FENC			Fencing
L	SITE	FURN			Furnishings
L	SITE	GATE			Gate
L	SITE	IDEN			Annotation
L	SITE	PLAY			Play structures
L	SITE	POOL			Pools and spas
L	SITE	ROCK			Boulders and cobble
L	SITE	RTWL			Retaining walls
L	SITE	SPRT			Sports fields
L	SITE	TUNL			Tunnels
L	SITE	WALK			Walks and steps

Common Layer Names – Mechanical (M)

Discipline	Major	Minor1	Minor2	Status	Description
INDUSTRIAL WASTE PIPING					
M	ACID	EQPM			Acid, alkaline, and oil waste equipment
M	ACID	PIPE			Acid, alkaline, and oil waste piping
M	ACID	VENT			Acid, alkaline, and oil waste vent piping
ANTI-FREEZE					
M	AFRZ	PIPE			Anti-freeze piping
M	AFRZ	WAST			Waste anti-freeze piping
ALIGNMENTS					
M	ALGN	DATA			Alignment coordinates and curve data
M	ALGN	LINE			Alignments
M	ALGN	STAT			Alignment stationing and tick marks
GENERAL INFORMATION					
M	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text
M	ANNO	KEYN			Reference keynotes with associated leaders
M	ANNO	NOTE			General notes and general remarks
M	ANNO	NPLT			Non-plotting graphic information
M	ANNO	PATT			Miscellaneous patterning and hatching
M	ANNO	REFR			Reference files (AutoCAD users only, see Chapter 4)
M	ANNO	SYMB			Miscellaneous symbols
M	ANNO	TEXT			Miscellaneous text and callouts with associated leaders
BRINE SYSTEM					
M	BRIN	EQPM			Brine system equipment
M	BRIN	PIPE			Brine system piping
CHEMINCAL TREAMENT SYSTEM					
M	CHEM	EQPM			Equipment
M	CHEM	PIPE			Piping (includes fittings, valves)
COMPRESSED AIR					
M	CMPA	EQPM	AIRD		Air drain separator point
M	CMPA	EQPM	VLVP		Valve point
M	CMPA	EQPM	VLVE		Valve
M	CMPA	FTTG			Fitting
M	CMPA	TANK			Tank
CONDENSER WATER SYSTEM					
M	CNDW	EQPM			Condenser water equipment
M	CNDW	PIPE			Condenser water piping
M	COND	PIPE			Condensate piping (includes fittings, valves)
M	CONT	THER			Thermostats, controls, instrumentation, and sensors
M	CONT	WIRE			Low voltage wiring
CHILLED WATER SYSTEM					
M	CWTR	EQPM			Equipment
M	CWTR	PIPE			Piping (includes fittings, valves)
DETAIL INFORMATION					
M	DETL	ACCS			Accessories

Discipline	Major	Minor1	Minor2	Status	Description
M	DETL	BOIL			Boilers
M	DETL	CABS			Cabinets
M	DETL	COIL			Coils and fin tubes
M	DETL	DUCT			Ducts
M	DETL	EQPT			Equipment and fixtures
M	DETL	FANS			Fans
M	DETL	GENF			General features (miscellaneous items)
M	DETL	GRLS			Grilles and louvers
M	DETL	GRPH			Graphics, gridlines, non-text items
M	DETL	INPD			Inch-pound-specific dimensions and notes
M	DETL	INSL			Insulation and coverings
M	DETL	METR			Metric-specific dimensions and notes
M	DETL	MOTR			Motors
M	DETL	PIPE			Piping
M	DETL	PUMP			Pumps and compressors
M	DETL	STRC			Structural support features
M	DETL	TANK			Tanks
M	DETL	TRAP			Traps and drains
M	DETL	VENT			Vents
M	DETL	VLVE			Valves and fittings
M	DETL	WIRE			Electrical wiring
DIAGRAM INFORMATION					
M	DIAG	GRPH			Graphics, gridlines, non-text items
M	DIAG	INPD			Inch-pound-specific dimensions and notes
M	DIAG	METR			Metric-specific dimensions and notes
OTHER DISCIPLINE					
M	DISC	INFO			Clearances and working space information
DUAL TEMPERATURE SYSTEM					
M	DUAL	EQPM			Equipment
M	DUAL	PIPE			Piping (includes fittings, valves)
DUST AND FUME COLLECTION SYSTEMS					
M	DUST	DUCT			Dust and fume ductwork
M	DUST	EQPM			Dust and fume collection equipment
ELEVATIONS					
M	ELEV	FIXT			Miscellaneous fixtures
M	ELEV	IDEN			Component identification numbers
M	ELEV	OTLN			Building outlines
M	ELEV	PATT			Textures and hatch patterns
M	ELEV	PFIX			Plumbing fixtures
EXHAUST AIR SYSTEM					
M	EXHS	CDFF			Exhaust air ceiling registers and grilles
M	EXHS	DUCT			Exhaust ductwork
M	EXHS	EQPM			Equipment
FLOOR INFORMATION					
M	FLOR	IDEN			Room name, space identification text (copied from Architectural - Floor Plan model file)
M	FLOR	NUMB			Room/space identification number and symbol (copied from Architectural -

Discipline	Major	Minor1	Minor2	Status	Description
					Floor Plan model file)
GEOTHERMAL HEAT PUMP SYSTEM					
M	GTHP	EQPM			Equipment
M	GTHP	PIPE			Piping (includes fittings, valves)
GLYCOL SYSTEM					
M	GLYC	CULV	LINE		Culvert line
M	GLYC	CULV	SITE		Culvert site
M	GLYC	DRAN	BASN		Deicing drainage basin
M	GLYC	DRAN	DIVD		Deicing drainage divide
M	GLYC	EQPM	COUT		Clean out
M	GLYC	EQPM	DSCH		Discharge point
M	GLYC	EQPM	FLOW		Flow control point
M	GLYC	EQPM	INLT		inlet
M	GLYC	EQPM	LIFT		Lift station
M	GLYC	EQPM	PUMP		pump
M	GLYC	EQPM	VLVE		Valve
M	GLYC	FTTG			Fitting
M	GLYC	JBOX			Junction
M	GLYC	RESV			Reservoir point
M	GLYC	REVR			Recovery point
M	GLYC	SIGN			Marker
M	GLYC	STAT	PUMP		Pump station
M	GLYC	TANK			Tank
M	GLYC	VALT			Vault
HIGH TEMPERATURE / CHILLED WATER SYSTEM					
M	HTCW	PIPE		ABND	Abandoned piping
M	HTCW	CHLL			Main chilled water piping
M	HTCW	CHLP			Chilled water plant
M	HTCW	CHLS			Chilled water service piping
M	HTCW	DEVC			Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves
M	HTCW	FLOW			Flow direction arrows
M	HTCW	FTTG			Caps and flanges
M	HTCW	HTPL			Main high temperature piping
M	HTCW	HTPP			High temperature water plant
M	HTCW	HTPS			High temperature service piping
M	HTCW	IDEN			Identifier tags, symbol modifier, and text
M	HTCW	JBOX			Junction boxes, manholes, handholes, test boxes
M	HTCW	LTPL			Main low temperature piping
M	HTCW	LTPS			Low temperature service piping
M	HTCW	PITS			Valve pits/vaults, steam pits
M	HTCW	PLNT	IDEN		Identifier tags, symbol modifier, and text
M	HTCW	PUMP			Pump stations
M	HTCW	RTRN			Return for all HTCW lines
M	HTCW	STML			Main steam piping
M	HTCW	STMS			Steam service piping
M	HTCW	STNS	IDEN		Identifier tags, symbol modifier, and text

Discipline	Major	Minor1	Minor2	Status	Description
HVAC SYSTEM					
M	HVAC	ACCS			Equipment access doors
M	HVAC	CDFF			Ceiling diffusers, registers, and grilles
M	HVAC	DAMP			Fire and smoke dampers
M	HVAC	EQPM			Air system equipment
M	HVAC	EQPM	ANCH		Anchor point
M	HVAC	EQPM	ANOD		Anode
M	HVAC	EQPM	ANOT		Anode test station
M	HVAC	EQPM	PUMP		Pump
M	HVAC	EQPM	RECT		Rectifier
M	HVAC	EQPM	REGL		Regulator
M	HVAC	EQPM	VLVE		Valve
M	HVAC	FDFF			Floor diffusers, registers, and grilles
M	HVAC	FTTG			Fitting
M	HVAC	IDEN			Duct sizes
M	HVAC	JBOX			Junction
M	HVAC	METR			Meters
M	HVAC	RETN			Return ductwork
M	HVAC	ROOF			Roof mounted HVAC equipment
M	HVAC	SIGN			Marker
M	HVAC	SUPP			Supply ductwork
M	HVAC	TAGS			Diffuser/register/grille tags and air flow arrows
M	HVAC	WDFF			Wall diffusers, registers, and grilles
HOT WATER HEATING SYSTEM					
M	HWTR	EQPM			Equipment
M	HWTR	PIPE			Piping (includes fittings, valves)
HYDRAULIC SYSTEMS					
M	HYDR	EQPM			Hydraulic system equipment
M	HYDR	PIPE			Hydraulic system piping
INSULATING (TRANSFORMER) OIL SYSTEM					
M	INSL	EQPM			Insulating oil equipment
M	INSL	PIPE			Insulating oil piping
LUBRICATION OIL					
M	LUBE	EQPM			Lubrication oil equipment
M	LUBE	PIPE			Lubrication oil piping
MACHINE DESIGN					
M	MACH	BASE			Machinery bases
M	MACH	COMP			Miscellaneous machinery parts and components
M	MACH	EXST			Existing machinery
M	MACH	FAST			Fasteners, nuts, and bolts
M	MACH	LROT			Large rotating machinery (turbine and pump outlines)
M	MACH	MOTR			Machinery motors
M	MATL	CRAN			Bridge cranes, jib cranes, and monorails
M	MATL	HOIS			Hoists and hooks
M	MATL	LIFT			Miscellaneous lifting equipment
PENETRATIONS					

Discipline	Major	Minor1	Minor2	Status	Description
M	PENE	FLOR			Floor penetrations
M	PENE	ROOF			Roof penetrations
PROCESS PIPING					
M	PROC	EQPM			Equipment
M	PROC	PIPE			Process piping
ENERGY RECOVERY SYSTEM					
M	RCOV	EQPM			Equipment
M	RCOV	PIPE			Piping (includes fittings, valves)
REFRIDGERATION SYSTEM					
M	REFG	EQPM			Equipment
M	REFG	PIPE			Piping (includes fittings, valves)
RAW WATER PIPING					
M	RWTR	EQPM			Raw water equipment
M	RWTR	PIPE			Raw water piping
SECTIONS					
M	SECT	IDEN			Component identification numbers
M	SECT	MBND			Material beyond section cut
M	SECT	MCUT			Material cut by section
M	SECT	PATT			Textures and hatch patterns
STEAM SYSTEM					
M	STEM	EQPM			Equipment
M	STEM	PIPE			Steam piping

Common Layer Names – Plumbing (P)

Discipline	Major	Minor1	Minor2	Status	Description
GENERAL INFORMATION					
P	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text
P	ANNO	KEYN			Reference keynotes with associated leaders
P	ANNO	NOTE			General notes and general remarks
P	ANNO	NPLT			Non-plotting graphic information
P	ANNO	PATT			Miscellaneous patterning and hatching
P	ANNO	REFR			Reference files (AutoCAD users only, see Chapter 4)
P	ANNO	SYMB			Reference bubbles, matchlines and breaklines
P	ANNO	TEXT			Detail title text, text and associated leaders, notes
COMPRESSED AIR					
P	CMPA	EQPM			Equipment
P	CMPA	PIPE			Piping
DETAIL INFORMATION					
P	DETL	GRPH			Graphics, gridlines, non-text items
P	DETL	INPD			Inch-pound-specific dimensions and notes
P	DETL	METR			Metric-specific dimensions and notes
DIAGRAM INFORMATION					
P	DIAG	GRPH			Graphics, gridlines, non-text items
P	DIAG	INPD			Inch-pound-specific dimensions and notes
P	DIAG	METR			Metric-specific dimensions and notes
OTHER DISCIPLINE					
P	DISC	INFO			Information and notes for other disciplines
DOMESTIC WATER					
P	DOMW	ACCS			Equipment access doors
P	DOMW	CPIP			Domestic cold water piping
P	DOMW	EQPM			Hot and cold water equipment
P	DOMW	FPIP			Domestic filtered water piping
P	DOMW	HPIP			Domestic hot water piping
P	DOMW	RISR			Domestic hot and cold water risers
P	DOMW	RPIP			Domestic hot water recirculation piping
FLOOR INFORMATION					
P	FLOR	IDEN			Room name, space identification text (copied from Architectural - Floor Plan model file)
P	FLOR	NUMB			Room/space identification number and symbol (copied from Architectural - Floor Plan model file)
LIQUID FUEL					
P	FUEL	EQPM			Equipment
P	FUEL	FGAS			Fuel gas piping
P	FUEL	FOIL			Fuel oil piping
P	FUEL	NGAS			Natural gas piping
LIQUID GAS					
P	LGAS	EQPM			Equipment
P	LGAS	PIPE			Piping
MEDICAL / DENTAL GAS					

Discipline	Major	Minor1	Minor2	Status	Description
P	MDGS	EQPM			Medical/Dental Gas Equipment
P	MDGS	PIPE			Medical/Dental Gas Piping
PENETRATIONS					
P	PENE	FLOR			Floor penetrations
P	PENE	ROOF			Roof penetrations
SANITARY DRAINAGE					
P	SANR	COND			Sanitary Condensate piping
P	SANR	EQPM			Sanitary Equipment (e.g., sand/oil/water separators)
P	SANR	FIXT			Sanitary Plumbing fixtures
P	SANR	FLDR			Sanitary Floor drains, sinks, and cleanouts
P	SANR	PIPE			Sanitary Piping
P	SANR	RISR			Sanitary risers
P	SANR	VENT			Sanitary Vent piping
STORM DRAINAGE SYSTEM					
P	STRM	PIPE			Storm drain piping
P	STRM	RFDR			Roof drains
P	STRM	RISR			Storm drain risers

Common Layer Names – Structural (S)

Discipline	Major	Minor1	Minor2	Status	Description
GENERAL INFORMATION					
S	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text, welding symbols
S	ANNO	KEYN			Reference keynotes with associated leaders
S	ANNO	NOTE			General notes and general remarks
S	ANNO	NPLT			Non-plotting graphic information
S	ANNO	PATT			Miscellaneous patterning and hatching
S	ANNO	REFR			Reference files (AutoCAD users only, see Chapter 4)
S	ANNO	SYMB			Reference bubbles, matchlines and breaklines
S	ANNO	TEXT			Miscellaneous text and callouts with associated leaders
BEAMS					
S	BEAM	CNTR			Beam centerlines
S	BEAM	PRIM			Primary beams, girders
S	BEAM	SECD			Secondary beams, girders
BRACING					
S	BRAC	LATL			Lateral bracing
S	BRAC	SHEA			Shear walls
S	BRAC	VERT			Vertical bracing
COLUMNS					
S	COLS	CNTR			Column centerlines/working lines
S	COLS	MSC1			Miscellaneous columns (Type 1)
S	COLS	MSC2			Miscellaneous columns (Type 2)
S	COLS	MSC3			Miscellaneous columns (Type 3)
S	COLS	MSC4			Miscellaneous columns (Type 4)
S	COLS	PRIM			Primary columns
S	COLS	SCND			Secondary columns
DECKING					
S	DECK	FLOR			Floor deck
S	DECK	OPEN			Openings and penetrations
S	DECK	RBAR			Deck/slab reinforcing
S	DECK	ROOF			Roof deck
DETAIL INFORMATION					
S	DETL	GRPH			Graphics, gridlines, non-text items
S	DETL	INPD			Inch-pound-specific dimensions and notes
S	DETL	METR			Metric-specific dimensions and notes
FEATURES					
S	FEAT	CMUW			CMU outline (no patterning)
S	FEAT	CNTR			Feature centerlines
S	FEAT	CONC			Concrete outline (no patterning)
S	FEAT	GENL			General features (miscellaneous items)
S	FEAT	WOOD			Wood outline (no patterning)
FOUNDATIONS					
S	FNDN	CNTR			Beam centerlines
S	FNDN	FTNG			Footings

Discipline	Major	Minor1	Minor2	Status	Description
S	FNDN	GRBM			Grade beams
S	FNDN	PEDS			Column pedestals
S	FNDN	PILE			Piles (steel sheet, concrete, wood), piers, caisson piers, drilled piers
S	FNDN	RBAR			Foundation reinforcing
GRATING					
S	GRAT	ELEV			Elevated grating (catwalks)
S	GRAT	FLOR			Floor grating
S	GRAT	SUBS			Subsurface grating
GRADE LINES					
S	GRDL	EXGL			Existing ground
S	GRDL	FNGR			Finished grade
S	GRDL	WATR			Water surface
GRIDS					
S	GRID	HORZ			Primary grid lines (horizontal)
S	GRID	IDEN			Column I.D. tags
S	GRID	MSC			Miscellaneous grid lines (Type 1)
S	GRID	MSC2			Miscellaneous grid lines (Type 2)
S	GRID	MSC3			Miscellaneous grid lines (Type 3)
S	GRID	MSC4			Miscellaneous grid lines (Type 4)
S	GRID	VERT			Primary grid lines (vertical)
JOINTS					
S	JOIN	CNST			Construction joints
S	JOIN	CTRL			Control/expansion joints
JOISTS					
S	JOIS	BRDG			Bridging
S	JOIS	PRIM			Primary joists
S	JOIS	SECD			Secondary joists
METAL					
S	METL	MISC			Miscellaneous metal
OPENINGS					
S	OPEN	MISC			Openings and penetrations
PADS					
S	PADS	EQPM			Equipment pads
PIPING					
S	PIPE	GATE			Gates (flap gates, sluice gates, other)
S	PIPE	MISC			Miscellaneous piping/culverts
S	PIPE	TRSH			Trash racks
REINFORCEMENT					
S	REIN	RBAR			Rebar, welded wire mesh
SAFETY FEATURES					
S	SAFE	FENC			Fencing
S	SAFE	HRAL			Handrails
SECTIONS					
S	SECT	CMUW			CMU outline (no patterning)
S	SECT	CNTR			Centerlines
S	SECT	CONC			Concrete outline (no patterning)

Discipline	Major	Minor1	Minor2	Status	Description
S	SECT	FNGR			Finished grade
S	SECT	GENF			General features (miscellaneous items)
S	SECT	JOIN			Joint materials (e.g., felt), vapor barrier, other
S	SECT	MISC			Miscellaneous fasteners, anchor bolts, supports
S	SECT	PRIM			Primary beams/girders outlines
S	SECT	RBAR			Rebar, welded wire mesh
S	SECT	SHPS			Miscellaneous shapes, plates
S	SECT	STLS			Wide flange shapes, plates, open web joists, decking
S	SECT	WOOD			Wood outline (no patterning)
SLABS					
S	SLAB	EDGE			Edge of slab
S	SLAB	OPEN			Openings and penetrations
S	SLAB	RBAR			Slab reinforcing
SUPPORTS					
S	SPPT	MISC			Miscellaneous fasteners, anchor bolts, supports
S	SPPT	SHPS			Miscellaneous shapes, plates
STAIRWAYS					
S	STRS	FRAM			Stair/elevator framing
S	STRS	LADD			Ladders, ladder handrails, safety guard, grab bars
S	STRS	RBAR			Stair reinforcing
TRUSSES					
S	TRUS	PRIM			Primary trusses
S	TRUS	SECD			Secondary trusses
WALLS					
S	WALL	CONC			Concrete walls
S	WALL	HBAR			Horizontal/secondary reinforcement
S	WALL	LOAD			Load bearing CMU walls
S	WALL	NONL			Non-load bearing CMU walls
S	WALL	OPEN			Openings and penetrations
S	WALL	OTLN			Wall outline
S	WALL	PCST			Precast walls
S	WALL	RBAR			Wall reinforcing
S	WALL	STUD			Stud walls
S	WALL	VBAR			Vertical/primary reinforcement

Common Layer Names - Telecommunications (T)

Discipline	Major	Minor1	Minor2	Status	Description
ALARM SYSTEMS					
T	ALRM	EQPM	SECU		Security Alarm Equipment
T	ALRM	IDEN			Identifier tags, symbol modifier, and text
T	ALRM	SYST			Miscellaneous alarm system symbols
GENERAL INFORMATION					
T	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text
T	ANNO	KEYN			Reference keynotes with associated leaders
T	ANNO	NOTE			General notes and general remarks
T	ANNO	NPLT			Non-plotting graphic information
T	ANNO	PATT			Miscellaneous patterning and hatching
T	ANNO	REFR			Reference files (AutoCAD users only, see Chapter 4)
T	ANNO	SYMB			Miscellaneous symbols
T	ANNO	TEXT			Miscellaneous text and callouts with associated leaders
CABLE SYSTEMS					
T	CABL	COAX			Coax cable
T	CABL	FIBR			Fiber optics cable
T	CABL	IDEN			Cable identifiers
T	CABL	MULT			Multi-conductor cable
T	CABL	TRAY			Cable trays and wireways
CLOCK SYSTEMS					
T	CLOK	IDEN			Identifier tags, symbol modifier, and text
T	CLOK	SYST			Clock system symbols
COMMUNICATIONS					
T	COMM	ANTN			Telecommunications antennae
T	COMM	APSY			Audio paging system
T	COMM	ATMS			Advanced traffic management system
T	COMM	AVID			Automatic vehicle identification system
T	COMM	BIDS			Baggage information display system
T	COMM	FIDS			Flight information display system
T	COMM	GIDS			Gate information display system
T	COMM	JBOX			Junction boxes
T	COMM	PMRC			Parking management and revenue control
T	COMM	VPSY			Visual paging system
DIAGRAM INFORMATION					
T	DIAG	GRPH			Graphics, gridlines, non-text items
T	DIAG	IDEN			Identifier tags, symbol modifier and text
T	DIAG	INPD			Inch-pound-specific dimensions and notes
T	DIAG	METR			Metric-specific dimensions and notes
OTHER DISCIPLINE INFORMATION					
T	DISC	INFO			Information and notes for other disciplines
EQUIPMENT					
T	EQPM	COMB			Distribution equipment for both copper and fiber optics
T	EQPM	COPP			Distribution equipment for copper

Discipline	Major	Minor1	Minor2	Status	Description
T	EQPM	FIBR			Distribution equipment for fiber optic
T	EQPM	OTHR			Other telecommunications equipment
T	EQPM	RELA			Relays, resistors, capacitors, and inducers
FLOOR INFORMATION					
T	FLOR	IDEN			Room name, space identification text (copied from Architectural - Floor Plan model file)
T	FLOR	NUMB			Room/space identification number and symbol (copied from Architectural - Floor Plan model file)
JACKS					
T	JACK	COMB			Combination telephone and data/LAN jacks
T	JACK	DATA			Data/LAN jacks
T	JACK	IDEN			Identifier tags, symbol modifier, and text
T	JACK	PHON			Telephone jacks
NURSE CALL SYSTEMS					
T	NURS	IDEN			Identifier tags, symbol modifier, and text
T	NURS	SYST			Nurse call system symbols
SOUND SYSTEMS					
T	SOUN	IDEN			Identifier tags, symbol modifier, and text
T	SOUN	SYST			Sound system symbols

Common Layer Names – Survey (V)

Discipline	Major	Minor1	Minor2	Status	Description
GENERAL INFORMATION					
V	ANNO	DIMS			Witness/extension lines, dimension terminators, dimension text
V	ANNO	KEYN			Reference keynotes with associated leaders
V	ANNO	NOTE			General notes and general remarks
V	ANNO	NPLT			Non-plotting graphic information
V	ANNO	PATT			Miscellaneous patterning and hatching
V	ANNO	REFR			Reference files (AutoCAD users only, see Chapter 4)
V	ANNO	SYMB			Miscellaneous symbols
V	ANNO	TEXT			Miscellaneous text and callouts with associated leaders
AERIAL SURVEY					
V	AERI	BNDY			Aerial photography boundaries
V	AERI	INDX			Aerial photo index
V	AERI	PATH			Aerial flight lines/paths
AIFIELD					
V	AIRF	BCNS	IDEN		Identifier tags, symbol modifiers, and text
V	AIRF	BCNS	MISC		Miscellaneous navaids-windcones and beacons
V	AIRF	BCNS	STRB		Strobe beacons
V	AIRF	CIRC	CTRL		Control and monitoring circuits
V	AIRF	CIRC	IDEN		Circuit identifier tags, symbol modifier, and text
V	AIRF	CIRC	MULT		Multiple circuits
V	AIRF	CIRC	SERS		Series circuits
V	AIRF	DEVC			Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers
V	AIRF	DUCT			Ductbanks
V	AIRF	IDEN			Airfield annotation
V	AIRF	JBOX			Junction boxes, pull boxes, manholes, handholes, pedestals, splices
V	AIRF	LITE	APPR		Approach lights
V	AIRF	LITE	DIST		Distance and arresting gear markers
V	AIRF	LITE	LANE		Hoverlane, taxilane and helipad lights
V	AIRF	LITE	OBST		Obstruction lights
V	AIRF	LITE	RUNW		Runway lights
V	AIRF	LITE	SIGN		Taxiway guidance signs
V	AIRF	LITE	TAXI		Taxiway lights
V	AIRF	LITE	THRS		Threshold lights
V	AIRF	VALT			Airfield lighting vaults
ALIGNMENTS					
V	ALGN	DATA			Alignment coordinates and curve data
V	ALGN	LINE			Alignments
V	ALGN	MRKG			Alignment tick marks
V	ALGN	STAT			Alignment stationing and tick marks
BUILDINGS					
V	BLDG	IDEN			Building and other structure annotation
V	BLDG	OTLN			Buildings and other structures outline
V	BLDG	OVHD			Building overhangs

Discipline	Major	Minor1	Minor2	Status	Description
CATHODIC PROTECTION SYSTEM					
V	CATH	ANOD			Sacrificial anode system
V	CATH	CURR			Impress current system
V	CATH	IDEN			Identifier tags, symbol modifier, and text
V	CATH	TEST			Test stations
CHANNELS					
V	CHAN	AIDS			Navigation aids and text
V	CHAN	CNTR			Channel centerline and survey report lines
V	CHAN	CNTR	IDEN		Channel centerline and survey report lines - annotation
V	CHAN	DACL			De-authorized channel limits, anchorages, etc.
V	CHAN	DACL	IDEN		De-authorized channel limits, anchorages, etc. - annotation
V	CHAN	IDEN			Channel limits, anchorages, turning basins, disposal areas, etc. - annotation
V	CHAN	LIMT			Channel limits, anchorages, turning basins, disposal areas, etc.
CIRCUITS					
V	CIRC	CTRL			Control and monitoring circuits
V	CIRC	IDEN			Identifier tags, symbol modifier, and text
V	CIRC	MULT			Multiple circuits
V	CIRC	SERS			Series circuits
COMMUNICATIONS					
V	COMM	EQPM			Other communications distribution equipment
V	COMM	JBOX			Communication junction boxes, pull boxes, manholes, handholes, pedestals, splices
V	COMM	OVHD			Overhead communications/telephone lines
V	COMM	OVHD	IDEN		Identifier tags, symbol modifier and text
V	COMM	UNDR			Underground communications/telephone lines
V	COMM	UNDR	IDEN		Identifier tags, symbol modifier and text
V	COMM	VALT			Communications vault
CONTROL					
V	CTRL	BMRK			Benchmarks
V	CTRL	GRID			Grid
V	CTRL	HCPT			Horizontal control points
V	CTRL	IDEN			Control point annotatior
V	CTRL	TRAV			Traverse points
V	CTRL	VCPT			Vertical control points
DITCHES					
V	DTCH	BOTD			Bottom of ditch
V	DTCH	CNTR			Centerline of ditch
V	DTCH	EWAT			Edge of water
V	DTCH	IDEN			Ditch annotatior
V	DTCH	TOPD			Top of ditch
DOMESTIC WATER					
V	DOMW	PIPE		ABND	Abandoned piping
V	DOMW	DEVC			Connectors, faucets, reducers, regulators, vents, intake points, tanks, taps, backflow preventers, and valves
V	DOMW	FIRE			Fire lines
V	DOMW	FTTG			Caps, cleanouts, crosses, and tees
V	DOMW	HYDR			Hydrants

Discipline	Major	Minor1	Minor2	Status	Description
V	DOMW	IDEN			Identifier tags, symbol modifier, and text
V	DOMW	MAIN			Main domestic water piping
V	DOMW	METR			Meters
V	DOMW	NHYD			Non-potable hydrants/flushing hydrants
V	DOMW	NPOT			Non-potable water piping
V	DOMW	PITS	IDEN		Identifier tags, symbol modifier, and text
V	DOMW	PUMP			Booster pump stations
V	DOMW	REDC			Pressure reducing stations
V	DOMW	RSVR			Reservoirs
V	DOMW	RSVR	IDEN		Identifier tags, symbol modifier, and text
V	DOMW	SERV			Domestic water service piping
V	DOMW	SIGN			Surface markers/signs
V	DOMW	STNS	IDEN		Identifier tags, symbol modifier, and text
V	DOMW	TANK			Water storage tanks
V	DOMW	VENT			Vent pits
V	DOMW	VLVE			Valve pits/vaults
V	DOMW	WELL			Water well houses
DUCTBANKS					
V	DUCT	MULT			Ductbank
V	DUCT	MULT	IDEN		Identifier tags, symbol modifier and text
ELECTRICAL					
V	ELEC	DEVC			Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers
V	ELEC	JBOX			Junction boxes, pull boxes, manholes, handholes, pedestals, splices
V	ELEC	SUBS			Other substation equipment
V	ELEC	SWCH			Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches
V	ELEC	VALT			Vaults
LIQUID FUEL					
V	FUEL	PIPE		ABND	Abandoned piping
V	FUEL	DEFL			Defueling piping
V	FUEL	DEVC			Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves
V	FUEL	FLOW			Flow direction arrows
V	FUEL	FTTG			Caps, crosses, and tees
V	FUEL	HYDR			Hydrant control pits
V	FUEL	IDEN			Identifier tags, symbol modifier, and text
V	FUEL	JBOX			Junction boxes, manholes, handholes, test boxes
V	FUEL	MAIN			Main fuel piping
V	FUEL	METR			Meters
V	FUEL	PITS	IDEN		Identifier tags, symbol modifier, and text
V	FUEL	PUMP			Booster pump stations
V	FUEL	SERV			Service piping
V	FUEL	STNS	IDEN		Identifier tags, symbol modifier, and text
V	FUEL	TANK			Fuel tanks
V	FUEL	TRCH			Fuel line trench
V	FUEL	VENT			Vent pits

Discipline	Major	Minor1	Minor2	Status	Description
V	FUEL	VLVE			Valve pits
GRADE LINEWORK					
V	GRAD	EXST			Existing grade, ground line
V	GRAD	FNSH			Finished grade
V	GRID	FRAM			Frame
V	GRID	MAJR			Major grid lines
V	GRID	MINR			Minor grid lines
V	GRID	TEXT			Border text, annotation
V	GTHP	EQPM			Equipment
V	GTHP	PIPE			Piping (includes fittings, valves)
HIGH TEMPERATURE / CHILLED WATER					
V	HTCW	PIPE		ABND	Abandoned piping
V	HTCW	CHLL			Main chilled water piping
V	HTCW	CHLP			Chilled water plant
V	HTCW	CHLS			Chilled water service piping
V	HTCW	DEVC			Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves
V	HTCW	FLOW			Flow direction arrows
V	HTCW	FTTG			Caps and flanges
V	HTCW	HTPL			Main high temperature piping
V	HTCW	HTPP			High temperature water plant
V	HTCW	HTPS			High temperature service piping
V	HTCW	IDEN			Identifier tags, symbol modifier, and text
V	HTCW	JBOX			Junction boxes, manholes, handholes, test boxes
V	HTCW	LTPL			Main low temperature piping
V	HTCW	LTPS			Low temperature service piping
V	HTCW	PITS			Valve pits/vaults, steam pits
V	HTCW	PLNT	IDEN		Identifier tags, symbol modifier, and text
V	HTCW	PUMP			Pump stations
V	HTCW	RTRN			Return for all HTCW lines
V	HTCW	STML			Main steam piping
V	HTCW	STMS			Steam service piping
V	HTCW	STNS	IDEN		Identifier tags, symbol modifier, and text
INDUSTRIAL WASTE					
V	INDW	PIPE		ABND	Abandoned piping
V	INDW	DEVC			Grit chambers, meters, flumes, neutralizers, oil/water separators, ejectors, tanks, and valves
V	INDW	FLOW			Flow direction arrows
V	INDW	FTTG			Caps and cleanouts
V	INDW	IDEN			Identifier tags, symbol modifier, and text
V	INDW	JBOX			Junction boxes and manholes
V	INDW	LAGN			Lagoons
V	INDW	LIFT			Lift stations
V	INDW	MAIN			Main industrial waste water piping
V	INDW	PLNT			Treatment plants
V	INDW	RSVR	IDEN		Identifier tags, symbol modifier, and text
V	INDW	SERV			Industrial waste water service piping

Discipline	Major	Minor1	Minor2	Status	Description
V	INDW	SIGN			Surface markers/signs
V	INDW	STNS	IDEN		Identifier tags, symbol modifier, and text
LIGHTS					
V	LITE	APPR			Approach lights
V	LITE	DIST			Distance and arresting gear markers
V	LITE	FIXT			Exterior Lights
V	LITE	FIXT	IDEN		Identifier tags, symbol modifier, and text
V	LITE	LANE			Hoverlane, taxilane, and helipad lights
V	LITE	OBST			Obstruction lights
V	LITE	RUNW			Runway lights
V	LITE	RUNW	TDZN		Runway Touchdown Zone lights
V	LITE	RUNW	CNTL		Runway Centerline lights
V	LITE	SIGN			Taxiway guidance signs
V	LITE	TAXI			Taxiway lights
V	LITE	THRS			Threshold lights
NATURAL GAS					
V	NGAS	PIPE		ABND	Abandoned piping
V	NGAS	DEVC			Hydrant fill points, lights, vents, markers, rectifiers, reducers, regulators, sources, tanks, drip pots, taps, and valves
V	NGAS	DEVC	IDEN		Identifier tags, symbol modifier, and text
V	NGAS	FLOW			Flow direction arrows
V	NGAS	FTTG			Caps, crosses, and tees
V	NGAS	IDEN			Identifier tags, symbol modifier, and text
V	NGAS	MAIN			Main natural gas piping
V	NGAS	METR			Meters
V	NGAS	PITS	IDEN		Identifier tags, symbol modifier, and text
V	NGAS	PUMP			Compressor stations
V	NGAS	REDC			Reducing stations
V	NGAS	SERV			Service piping
V	NGAS	SIGN			Surface markers/signs
V	NGAS	STNS	IDEN		Identifier tags, symbol modifier, and text
V	NGAS	VENT			Vent pits
V	NGAS	VLVE			Valve pits/boxes
POLES					
V	POLE	GUYS			Guying equipment
V	POLE	GUYS	IDEN		Guying equipment identifier tags, symbol modifiers, and text
V	POLE	IDEN			Utility pole identifier tags, symbol modifier, and text
V	POLE	UTIL			Utility poles
POWER					
V	POWR	XFMR	PADM		Pad mounted transformers
V	POWR	XFMR	POLM		Pole mounted transformers
PRIMARY ELECTRICAL CABLES					
V	PRIM	OVHD			Overhead electrical utility lines
V	PRIM	OVHD	IDEN		Identifier tags, symbol modifier, and text
V	PRIM	UNDR			Underground electrical utility lines
V	PRIM	UNDR	IDEN		Identifier tags, symbol modifier, and text
PROFILES					

Discipline	Major	Minor1	Minor2	Status	Description
V	PROF	CUID			Existing grade and grading cuts - annotation
V	PROF	FILL			New work, grading fills
V	PROF	INLT			Curb and surface inlets, catch basins
V	PROF	MHOL			Manholes
V	PROF	PIPE			Piping
V	PROF	ROAD			Roads
PROPERTY					
V	PROP	BRNG			Bearings and distance labels
V	PROP	CNTY			County Boundary
V	PROP	ESMT			Government easements/property lines
V	PROP	IDEN			Property annotation
V	PROP	LEAS			Lease line (surveyed)
V	PROP	LINE			Property lines (Existing recorded plats)
V	PROP	LUSE			Land Use Area
V	PROP	MUNI			Municipal Boundary
V	PROP	QTRS			Quarter lines
V	PROP	RWAY			Right of ways
V	PROP	SECT			Section lines
V	PROP	STAT			State Boundary
V	PROP	SXTS			Sixteenth lines (40 lines)
V	PROP	ZONG			Zoning Areas
PAVEMENT					
V	PVMT	IDEN			Road, parking lot, railroad, airfield pavement annotation
V	PVMT	MRKG			Pavement markings
V	PVMT	PATT			Joint patterns, text and dimensions
V	PVMT	ROAD			Roads, parking lots, railroads, airfield pavements
ROADS, STREETS AND HIGHWAYS					
V	ROAD	ASPH			Road outlines-asphalt surface
V	ROAD	CNTR			Road centerlines
V	ROAD	CNTR			Road centerlines annotatior
V	ROAD	CONC			Road outlines-concrete surface
V	ROAD	CURB			Curbs and gutters
V	ROAD	GRAL			Guard rails
V	ROAD	GRVL			Road outlines-gravel surface
V	ROAD	IDEN			Road, street, highway annotatior
V	ROAD	MRKG			Pavement markings
V	ROAD	OTLN			Road outlines
V	ROAD	PATT			Joint patterns, text and dimensions
V	ROAD	SHLD			Roadway shoulders
V	ROAD	SIGN			Signs
V	ROAD	UPVD			Road outlines-unpaved surface
RUNWAYS					
V	RUNW	BLST	MRKG		Blast pad markings
V	RUNW	CNTR	MRKG		Centerline markings
V	RUNW	DISP	MRKG		Displaced threshold markings
V	RUNW	DIST	MRKG		Fixed distance markings

Discipline	Major	Minor1	Minor2	Status	Description
V	RUNW	EDGE	MRKG		Edge markings
V	RUNW	IDEN	MRKG		Runway identifier markings
V	RUNW	SHLD	MRKG		Shoulder markings
V	RUNW	TDZM	MRKG		Touchdown zone markers
V	RUNW	THRS	MRKG		Threshold markers
SECONDARY ELECTRICAL CABLES					
V	SECD	OVHD			Overhead electrical utility lines
V	SECD	OVHD	IDEN		Identifier tags, symbol modifier, and text
V	SECD	UNDR			Underground electrical utility lines
V	SECD	UNDR	IDEN		Identifier tags, symbol modifier, and text
SECTIONS					
V	SECT	IDEN			Component identification numbers
V	SECT	MBND			Material beyond section cut
V	SECT	MCUT			Material cut by section
V	SECT	PATT			Textures and hatch patterns
SITE FEATURES					
V	SITE	EROS			Riprap, revetments/stone protection, breakwaters, dikes, jetties, and drains
V	SITE	EWAT			Water features
V	SITE	FENC			Fences and handrails
V	SITE	FENC	IDEN		Fence, handrail, ramp, and trail annotation
V	SITE	IDEN			Existing site feature/structure annotation
V	SITE	OTLN			Existing site features (play structures, bike racks, benches, recreational equipment)
V	SITE	STRC			Structures (bridges, sheds, foundation pads, footings, etc.)
V	SITE	STRS			Stairs and ramps
V	SITE	VEGE			Existing treelines and vegetation
V	SITE	WALK			Walks, trails, and bicycle paths
V	SITE	WATR			Water features
SPECIAL SYSTEMS					
V	SPCL	IDEN			Special systems (UMCS, EMCS, CATV, etc.) identifier tags, symbol modifier, and text
V	SPCL	SYST			Special systems (UMCS, EMCS, CATV, etc.)
V	SPCL	TRAF			Traffic signal system
V	SPCL	TRAF	IDEN		Traffic signal identifier tags, symbol modifier, and text
SANITARY SEWER					
V	SSWR	PIPE		ABND	Abandoned piping
V	SSWR	DEVC			Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves
V	SSWR	DEVC	IDEN		Identifier tags, symbol modifier, and text
V	SSWR	FILT			Filtration beds
V	SSWR	FILT	IDEN		Identifier tags, symbol modifier, and text
V	SSWR	FLOW			Flow direction arrows
V	SSWR	FTTG			Caps and cleanouts
V	SSWR	IDEN			Identifier tags, symbol modifier, and text
V	SSWR	MHOL			Manholes
V	SSWR	MHOL	IDEN		Identifier tags, symbol modifier, and text
V	SSWR	JBOX			Junction boxes

Discipline	Major	Minor1	Minor2	Status	Description
V	SSWR	JBOX	IDEN		Identifier tags, symbol modifier, and text
V	SSWR	LAGN			Lagoons
V	SSWR	LEAC			Leach field
V	SSWR	MAIN			Sanitary sewer piping
V	SSWR	NITF			Nitrification drain fields
V	SSWR	PLNT			Treatment plants
V	SSWR	PUMP			Booster pump stations
V	SSWR	RSVR	IDEN		Identifier tags, symbol modifier, and text
V	SSWR	SERV			Sanitary sewer service piping
V	SSWR	SIGN			Surface markers/signs
V	SSWR	STNS	IDEN		Identifier tags, symbol modifier, and text
V	SSWR	TANK			Septic tanks
STRUCTURES					
V	STRC	IDEN			Bridges, piers, breakwaters, docks, floats, etc. - annotation
V	STRC	OTLN			Bridges, piers, breakwaters, docks, floats, etc. - outlines
V	STRC	TOWR			Tower
STORM SEWER					
V	STRM	PIPE		ABND	Abandoned piping
V	STRM	AFFF			AFFF lagoon/detention pond
V	STRM	CHUT			Chutes and concrete erosion control structures
V	STRM	CULV			Culverts
V	STRM	DEVC			Downspouts, flumes, oil/water separators, and flap gates
V	STRM	DRAN	IDEN		Identifier tags, symbol modifier, and text
V	STRM	EROS			Erosion control (riprap)
V	STRM	FLOW			Flow direction arrows
V	STRM	FMON			Flow monitoring station
V	STRM	FTTG			Caps and cleanouts
V	STRM	HDWL			Headwalls and endwalls
V	STRM	IDEN			Identifier tags, symbol modifier, and text
V	STRM	INLT			Inlets (curb, surface, and catch basins)
V	STRM	LAGN			Lagoons, ponds, watersheds, and basins
V	STRM	MAIN			Storm sewer piping
V	STRM	MHOL			Manholes
V	STRM	PUMP			Pump stations
V	STRM	ROOF			Roof drain line
V	STRM	RSVR	IDEN		Identifier tags, symbol modifier, and text
V	STRM	SERV			Storm sewer service piping
V	STRM	SIGN			Surface markers/signs
V	STRM	STNS	IDEN		Identifier tags, symbol modifier, and text
V	STRM	SUBS			Subsurface drain piping
SURVEY					
V	SURV	DATA			Survey data (benchmarks and horizontal control points or monuments)
V	SURV	IDEN			Survey, baseline, and control line annotation
V	SURV	LINE			Survey, baseline, and control line
V	SURV	SYMB			Survey line symbol
TAXIWAYS					

Discipline	Major	Minor1	Minor2	Status	Description
V	TAXI	CNTR			Centerlines
V	TAXI	CNTR	IDEN		Centerline annotatior
V	TAXI	CNTR	MRKG		Centerline markings
V	TAXI	EDGE			Edge markings
V	TAXI	HOLD			Hold lines
V	TAXI	IDEN			Taxiway-annotatior
V	TAXI	OTLN			Taxiway outlines
V	TAXI	SHLD			Taxiway shoulder
TOPOGRAPHY					
V	TOPO	BKLN			Breaklines
V	TOPO	BORE			Boring locations
V	TOPO	COOR			Coordinate grid ticks and text
V	TOPO	DTCH			Ditches and swales
V	TOPO	DTMP			DTM points
V	TOPO	DTMT			DTM triangles
V	TOPO	MAJR			Major contours
V	TOPO	MAJR	IDEN		Major contours - annotation
V	TOPO	MINR			Minor contours
V	TOPO	MINR	IDEN		Minor contours - annotation
V	TOPO	SHOR			Shorelines, land features, and references
V	TOPO	SLOP	TOPT		Top/toe slopes
V	TOPO	SOUN			Soundings
V	TOPO	SPEC			Species Site
V	TOPO	SPOT			Spot elevations
V	TOPO	WETL			Wetland
UTILITIES					
V	UTIL	ELEC			Power lines, lights, telephone poles, communication lines
V	UTIL	ELEC	IDEN		Power/communication annotation
V	UTIL	IDEN			Utility annotation
V	UTIL	LINE			Utilities
V	UTIL	NGAS			Gas lines, features, and valves
V	UTIL	NGAS	IDEN		Gas annotation
V	UTIL	SSWR			Sanitary lines and manholes
V	UTIL	SSWR	IDEN		Sanitary annotation
V	UTIL	STEM			Steam lines
V	UTIL	STRM			Storm sewer lines, culverts, manholes, and headwalls
V	UTIL	STRM	IDEN		Storm sewer annotation
V	UTIL	WATR			Water lines, hydrants, tanks
V	UTIL	WATR	IDEN		Water annotation

APPENDIX 2

Airline Name and Codes

3 Digit Code	2 Digit Code	Name	Ticketing Code
	6M	40-MILE AIR	
	VY	A.C.E.	
		A.S. NORVING	
		AARON AIRLINES PTY	
	SM	ABERDEEN AIRWAYS	731
	GB	ABX AIR (CARGO)	832
	VX	ACES	137
	XQ	ACTION AIRLINES	410
	ZY	ADALBANAIR	121
	IN	ADIRONDACK AIRLINES	
	JP	ADRIA AIRWAYS	165
REA	RE	AER ARANN	684
EIN	EI	AER LINGUS	053
		AEREOS SERVICIOS DE TRANSPORTE	278
	DU	AERIAL TRANSIT COMPANY(CARGO)	892
	JR	AERO CALIFORNIA	078
	DF	AERO COACH AVIATION INT	868
	2G	AERO DYNAMICS (CARGO)	
		AERO EJECUTIVOS	681
	YP	AERO LLOYD	633
		AERO SERVICIOS	243
		AERO TRANSPORTES PANAMENOS	155
	QA	AEROCARIBE	723
		AEROCHAGO AIRLINES	198
	3Q	AEROCHASQUI	298
		AEROCOZUMEL	686
AFL	SU	AEROFLOT	555
	FP	AEROLEASING S.A.	
ARG	AR	AEROLINEAS ARGENTINAS	044
	YU	AEROLINEAS DOMINICANAS	
	VG	AEROLINEAS EL SALVADOR (CARGO)	680
		AEROLINEAS URUGUAYAS	966
	BQ	AEROMAR (CARGO)	926
	AM	AEROMEXICO	139
		AEROMONTERREY	722
	XX	AERONAVES DEL PERU (CARGO)	624
	RL	AERONICA	127
	PO	AEROPELICAN AIR SERVICES	
	WL	AEROPERLAS	
	PL	AEROPERU	210
	6P	AEROPUMA, S.A. (CARGO)	
	AW	AEROQUETZAL	291
	XU	AEROVIAS (CARGO)	316
		AEROVIAS COLOMBIANAS (CARGO)	158
		AFFRETAIR (PRIVATE) (CARGO)	292
		AFRICAN INTERNATIONAL AIRWAYS	648
	ZI	AIGLE AZUR	
AMM	DP	AIR 2000	
	RK	AIR AFRIQUE	092
DAH	AH	AIR ALGERIE	124
	3J	AIR ALLIANCE	188

3 Digit Code	2 Digit Code	Name	Ticketing Code
	4L	AIR ALMA	248
		AIR ALPHA	
		AIR AQUITAINE	
	FQ	AIR ARUBA	276
	9A	AIR ATLANTIC LTD.	
AAG	ES	AIR ATLANTIQUE	
	OU	AIR ATONABEE/CITY EXPRESS	253
	AX	AIR AURORA (CARGO)	386
	ZX	AIR B.C.	742
	AJ	AIR BELGIUM	
	KF	AIR BOTNIA	
	BP	AIR BOTSWANA	636
		AIR BRASIL	853
		AIR BRIDGE CARRIERS (CARGO)	912
	VH	AIR BURKINA	226
	PB	AIR BURUNDI	919
	TY	AIR CALEDONIE	190
	SB	AIR CALEDONIE INTERNATIONAL	063
ACA	AC	AIR CANADA	014
	XC	AIR CARIBBEAN	918
	SF	AIR CHARTER	
		AIR CHARTER (CHARTER)	
		AIR CHARTER SYSTEMS	272
CCA	CA	AIR CHINA	999
	CE	AIR CITY S.A.	
CNB		AIR COLUMBUS	
	OR	AIR COMORES	687
	YN	AIR CREEBEC	219
	DJ	AIR DJIBOUTI	611
	EN	AIR DOLOMITI	
	RQ	AIR ENGIADINA	834
		AIR ENTERPRISE INTERNATIONAL	
AEA	AE	AIR EUROPA	803
	UX	AIR EUROPA (AIR ESPANA S.A.)	
	BS	AIR EXCHANGE (CARGO)	595
	VJ	AIR EXEL	900
	DN	AIR EXEL (BELGIQUE)	
	NE	AIR EXEL (UK) LTD.	
	GS	AIR FOYLE	
AFR	AF	AIR FRANCE	057
FUA		AIR FUTURA	
	GN	AIR GABON	185
	IV	AIR GAMBIA	
	OG	AIR GUADELOUPE	937
	GI	AIR GUINEE	093
	ID	AIR GUYANE	694
		AIR HAITI (CARGO)	623
	GG	AIR HOLLAND B.V	
AHK		AIR HONG KONG (CARGO)	152
	OX	AIR HUDIK	
AIC	AI	AIR INDIA	098
	9J	AIR INTEGRA	
	IT	AIR INTER	279
	3H	AIR INUIT	

3 Digit Code	2 Digit Code	Name	Ticketing Code
	VU	AIR IVOIRE	084
	JM	AIR JAMAICA	
	YH	AIR JET	
	UV	AIR KANGAROO ISLAND	
	QP	AIR KENYA AVIATION	
		AIR KOREA CO. LTD.	
AIS	UE	AIR L.A.	396
ALK	UL	AIR LANKA	603
	VD	AIR LIBERTE	718
	FU	AIR LITTORAL	659
	MD	AIR MADAGASCAR	258
	QM	AIR MALAWI	167
KMC		AIR MALTA	
AMC	KM	AIR MALTA	643
	7N	AIR MANITOBA	268
	NN	AIR MARTINIQUE	606
	MR	AIR MAURITANIE	174
MAU	MK	AIR MAURITIUS	239
		AIR MERCURY INT (CARGO)	
	ZV	AIR MIDWEST	471
		AIR MOLOKAI	437
	OM	AIR MONGOL	289
	QE	AIR MOOREA	067
	SW	AIR NAMIBIA	186
		AIR NATIONAL	417
	ON	AIR NAURU	123
	LW	AIR NEVADA	568
	NZ	AIR NEW ZEALAND	086
	DB	AIR NIAGARA (CARGO)	296
	EL	AIR NIPPON	
	PX	AIR NIUGINI	656
	4N	AIR NORTH	287
	HS	AIR NORTH INTERNATIONAL LTD	935
	QK	AIR NOVA	983
	GX	AIR ONTARIO	368
	QN	AIR OUTRE MER	676
	FJ	AIR PACIFIC	260
	GZ	AIR RAROTONGA	755
	UZ	AIR RESORTS AIRLINES	
	UU	AIR REUNION	760
	ZJ	AIR ROUTING	
	RY	AIR RWANDA	178
	5W	AIR SAN JUAN CHARTAIR	529
	7W	AIR SASK AVIATION	
	QR	AIR SATELLITE	
	9V	AIR SCHEFFERVILLE	
	UJ	AIR SEDONA	
	DS	AIR SENEGAL	223
SEY	HM	AIR SEYCHELLES	061
	4D	AIR SINAI	903
	WV	AIR SOUTH	399
	NY	AIR ST. VINCENT	
	OJ	AIR ST.BARTHELEMY	981
	PJ	AIR ST.PIERRE	638

3 Digit Code	2 Digit Code	Name	Ticketing Code
		AIR STORD	
	YI	AIR SUNSHINE	806
	GK	AIR SWAZI (CARGO)	097
	VT	AIR TAHITI	135
ATC	TC	AIR TANZANIA CORPORATION	197
	HT	AIR TCHAD	095
	CS	AIR TORONTO	777
		AIR TRANSAT (CHARTER)	
	TF	AIR TRANSPORT PYRENEES	655
		AIR TRANSPORT SCHIPHOL	
	VK	AIR TUNGARU CORP	715
	QW	AIR TURKS & CAICOS	254
UKL	UK	AIR UK	130
LEI		AIR UK LEISURE	
	NF	AIR VANUATU	218
	6V	AIR VEGAS	
	VM	AIR VENDEE	982
		AIR VIA BULGARIAN AIRWAYS	699
	8K	AIR VITKOVICE	
	ZW	AIR WISCONSIN	303
AZR	QC	AIR ZAIRE	207
	UM	AIR ZIMBABWE CORPORATION	168
	ZF	AIRBORNE OF SWEDEN	
	4C	AIRES	
	XL	AIR-GLACIERS	
	FL	AIRLEC	
		AIR-LIFT INTERNATIONAL (CARGO)	
	CW	AIRLINE OF THE MARSHALL ISLAND	778
	IP	AIRLINES OF TASMANIA	
		AIRPAC AIRLINES (CARGO)	856
	5S	AIRSPEED AVIATION	
AIH		AIRTOURS INTERNATIONAL	
	3N	AIRVANTAGE (CARGO)	
	HO	AIRWAYS INTERNATIONAL	372
AWD		AIRWORLD	
	6L	AKLAK AIR	709
		ALAS DE TRANSPORTES INT (CARGO)	791
	AS	ALASKA AIRLINES	027
	6D	ALASKA ISLAND AIR	
	2L	ALBERNI AIRWAYS	
		ALIADRIATICA	
	AZ	ALITALIA	055
	TO	ALKAN AIR	751
ANA	NH	ALL NIPPON AIRWAYS	205
		ALL SEASONS AIR PACIFIC	525
		ALLEGHENY COMMUTER AIRLINES	358
	3A	ALLIANCE AIRLINES	317
	QQ	ALLIED AIRLINES INC	446
	LM	ALM	119
	AQ	ALOHA AIRLINES	327
	WP	ALOHA ISLANDAIR	347
LPN		ALPENAIR (CHARTER)	
	7V	ALPHA AIR	895
	5A	ALPINE AVIATION	511

3 Digit Code	2 Digit Code	Name	Ticketing Code
	AL	ALSAIR S.A	
	DY	ALYEMDA-DEMOCRATIC YEMEN AIR	607
AMY		AMBASSADOR	
AWA	HP	AMERICA WEST AIRLINES	401
AAL	AA	AMERICAN AIRLINES	001
AMT	TZ	AMERICAN TRANS AIR INC	366
		AMERIJET INTERNATIONAL (CARGO)	810
		AMTRAK	554
	OB	ANDALUCIA INTERNATIONAL AIRWAY	
	ED	ANDES AIRLINE (CARGO)	215
		ANGLO AIRLINES	
	VF	ANGLO ROMANIAN AIRLINE	
		ANSETT AIR FREIGHT	964
AAA	AN	ANSETT AUSTRALIA AIRLINES	090
	WX	ANSETT EXPRESS	187
	ZQ	ANSETT NEW ZEALAND	941
	MV	ANSETT W.A.	181
		ANSETT WORLDWIDE AVIATION	757
	7P	APA INTERNATIONAL AIR	917
	VZ	AQUATIC AIRWAYS	
	5F	ARCTIC CIRCLE AIR	
FGA	FG	ARIANA AFGHAN AIRLINES	255
	XA	ARINC	545
	OQ	ARIZONA PACIFIC AIRWAYS	503
	IZ	ARKIA ISRAEL AIRLINES	238
	JW	ARROW AIR (CARGO)	404
	UH	ARUBAIR N.V.	
	OZ	ASIANA AIRLINES	988
	AP	ASPEN AIRWAYS	
		ASTRO AIR INTERNATIONAL	769
	9T	ATHABASKA AIRWAYS	909
	BM	ATI-AERO TRANSPORTI ITALIANI	
		ATLANTIC AIR TRANSPORT	
		ATLANTIC AIRLINES	336
	RC	ATLANTIC AIRWAYS, FAROE ISLES	767
		ATLANTIC ISLAND AIR	
	EV	ATLANTIC SOUTHEAST AIRLINES	862
	PT	ATLAS AIR SERVICE	
	BH	AUGUSTA AIRWAYS	
AUR	GR	AURIGNY AIR SERVICES	924
	NO	AUS-AIR	
	AU	AUSTRAL	143
	IM	AUSTRALIA-ASIA AIRLINES	
	TN	AUSTRALIAN AIRLINES	102
	SO	AUSTRIAN AIR SERVICES	
AVA	OS	AUSTRIAN AIRLINES	257
		AUSTRIAN AIRTRANSPORT	663
	CG	AVAIKI AIR	
	VE	AVENSA	128
	JZ	AVIA AB	752
	5T	AVIACION DEL NOROESTE	661
	AO	AVIACO	110
		AVIAEXPRESS AIRLINES	732
	5V	AVIAIR AVIATION	

3 Digit Code	2 Digit Code	Name	Ticketing Code
	AV	AVIANCA COLOMBIA	134
	RD	AVIANOVA	
	GU	AVIATECA	240
		AVIOGENEX	
	2B	B. AIRWAYS (CARGO)	817
		B0-S-AIRE AIRLINES	871
BHS	UP	BAHAMASAIR	111
	8B	BAKER AVIATION	
		BALAIR	290
LAZ	LZ	BALKAN BULGARIAN AIRLINES	196
	BT	BALTIA AIR LINES	
	TI	BALTIC INTERNATIONAL AIRLINES	
	PG	BANGKOK AIRWAYS CO	829
		BANKAIR (CARGO)	
	QO	BAR HARBOR AIRLINES	473
	6Q	BARROW AIR	
	6B	BAXTER AVIATION	
BYU	DD	BAYU INDONESIA AIR	
	JV	BEARSKIN LAKE AIR SERVICE	632
		BELIZE AIR INT (CARGO)	986
	LL	BELL AIR	
	5B	BELLAIR	
	CH	BEMIDJI AIRLINES	872
	8E	BERING AIR	
	WZ	BERLIN EUROPEAN U.K.	758
	GQ	BIG SKY AIRLINES	387
BBC	BG	BIMAN BANGLADESH AIRLINES	997
	NT	BINTER CANARIES	
		BIRGENAIR CHARTER GROUP	
	VB	BIRMINGHAM EUROPEAN AIRWAYS	702
		BLACKHAWK (CARGO)	536
	BV	BOPAIR	928
	3B	BORINQUEN AIR (CARGO)	433
	BO	BOURAQ INDONESIA AIRLINES	666
	BU	BRAATHENS S.A.F.E	154
		BRANIFF INTERNATIONAL A/L	577
	JJ	BRASIL CENTRAL LINHA AEREA REG	
DZH	DB	BRIT AIR	750
BAL	BY	BRITANNIA AIRWAYS	754
BAF		BRITISH AIR FERRIES LTD	
BAW	BA	BRITISH AIRWAYS	125
	RX	BRITISH INDEPENDENT AIRWAYS	
BIH	UR	BRITISH INT HELICOPTERS	
BMA	BD	BRITISH MIDLAND AIRWAYS	236
BWL	VF	BRITISH WORLD AIRLINES	762
		BRITT AIRWAYS	565
	BC	BRYMON AVIATION	657
	FR	BURLINGTON AIR EXPRESS	934
	II	BUSINESS AIR	
		BUSINESS AIR TRAVEL	664
	HQ	BUSINESS EXPRESS	357
	DR	BUSINESS FLIGHT OF SCANDINAVIA	244
	CT	C.A.V.E	
		CAICOS CARIBBEAN AIR. (CARGO)	

3 Digit Code	2 Digit Code	Name	Ticketing Code
CKT	KT	CALEDONIAN AIRWAYS	
	MO	CALM AIR INT	622
	3C	CAMAI AIR	451
	UY	CAMEROON AIRLINES	604
CMM		CANADA 3000	
CDN		CANADIAN AIRLINES INT	018
	4A	CANADIAN EAGLE AIRLINES	
	KG	CANAFRICA TRANSPORTES AEREOS	
		CANAIR (CARGO)	
	9K	CAPE AIR	306
	6C	CAPE SMYTHE AIR SERVICE	879
		CARGO AIRLINES	700
	CV	CARGOLUX AIRLINES (CARGO)	172
	OW	CARGOSUR (CARGO)	
		CARIBBEAN AIR CARGO (CARGO)	749
		CARIBBEAN AIRWAYS	
	KW	CARNIVAL AIR LINES	521
	CX	CATHAY PACIFIC AIRWAYS	160
	KX	CAYMAN AIRWAYS	378
		CAYUGA AIR (CARGO)	402
		CC AIR (US AIR COMMUTER)	354
CNA		CENTENIAL AIRLINES	
	GW	CENTRAL AMERICAN AIRLINES	712
	9M	CENTRAL MOUNTAIN AIR	634
	BK	CHALK'S/PARADISE ISLAND AIRWAY	522
		CHALLENGE AIR CARGO (CARGO)	307
		CHANNEL EXPRESS(AIR SER)(CARGO	
	NK	CHARTER ONE	487
		CHAUTAUQUA AIRLINES	363
		CHICAGO AIR TAXI	439
		CHILCOTIN-CARIBO AVIATION	116
CAL	CI	CHINA AIRLINES	297
	MU	CHINA EASTERN AIRLINES	781
		CHINA GENERAL AVIATION	
	CJ	CHINA NORTHERN AIRLINES	782
	WH	CHINA NORTHWEST AIRLINES	783
	CZ	CHINA SOUTHERN AIRLINES	784
	SZ	CHINA SOUTHWEST AIRLINES	785
	JS	CHOSONMINHANG KOREAN AIRWAYS	120
	SX	CHRISTMAN AIR SYSTEM	509
	QI	CIMBER AIR A/S	647
		CIRCLE AIR FREIGHT	
	CC	CISKEI INTERNATIONAL	222
	BX	COAST AIR	970
	DQ	COASTAL AIR TRANSPORT	457
		COASTAL AIRWAYS	819
	LQ	COHLMIA AVIATION (CARGO)	
	7C	COLUMBIA PACIFIC AIRLINES	
	OH	COMAIR	886
	MN	COMMERCIAL AIRWAYS	161
	XK	COMPAGNIE CORSE MEDITERRANEE	146
CFP	CF	COMPANIA DE AVIACION FAUCETT	163
MXA	MX	COMPANIA MEXICANA	132
	YM	COMPASS AIRLINES	612

3 Digit Code	2 Digit Code	Name	Ticketing Code
		CONNECTAIR CHARTERS	
	4S	CONNER AIR LINES	575
	5C	CONQUEST AIRLINES	355
	DD	CONTI-FLUG	
COA	CO	CONTINENTAL AIRLINES	005
	KC	COOK ISLANDS INTERNATIONAL	
	KO	COOK STRAIT SKYFERRY	
	CM	COPA-COMPANIA PANAMENA DE AVCN	230
		CORDOBA AIR CARGO	660
		CORPORATE AIR (CARGO)	
		CROATIA AIRLINES	
	LX	CROSSAIR	724
		CROWN AIRWAYS	501
	SC	CRUZEIRO DO SUL	049
CSA	OK	CSA CZECHOSLOVAK AIRLINES	064
	CU	CUBANA	136
CYP	CY	CYPRUS AIRWAYS	048
	YK	CYPRUS TURKISH AIRLINES	056
		DAIRO AIR SERVICES (CARGO)	761
	DX	DANAIR A/S	609
	DA	DAN-AIR SERVICES	062
	2D	DAWN AIR	551
	9D	DELTA AIR CHARTER	689
DAL	DL	DELTA AIR LINES	006
	DI	DELTA AIR REGIONAL FLUGVERKEHR	944
DLH	LH	DEUTSCHE LUFTHANSA AG.	220
	ER	DHL AIRWAYS	423
	UO	DIRECT AIR	418
	DH	DISCOVERY AIRWAYS	438
	DW	DLT DEUTSCHE LUFTVERK.	683
	YU	DOMINAIR	725
	DO	DOMINICANA	113
	DZ	DOUGLAS AIRWAYS	275
	KA	DRAGONAIR	043
	KB	DRUK AIR	787
	8D	DULLES EXPRESS	506
	QG	DYNAMIC AIR	
	EX	EAGLE AVIATION	
	XZ	EASTAIR (ICELAND)	
	UN	EASTERN AUSTRALIA AIRLINES	
	EW	EAST-WEST AIRLINES	088
	EU	ECUATORIANA	341
	3D	EDGARTOWN AIR	
	MS	EGYPTAIR	077
	LY	EL AL ISRAEL AIRLINES	114
	EB	EMERY WORLDWIDE (CARGO)	
	EK	EMIRATES	176
	EM	EMPIRE AIRLINES	464
	BE	ENTERPRISE AIRLINES	409
		ENVIROSALES CORPORATION	959
	3P	EQUATOR AIRLINES	
	GJ	EQUATORIAL INT AIR OF SAO TOME 980	
	7H	ERA AVIATION	808
ETH	ET	ETHIOPIAN AIRLINES	071

3 Digit Code	2 Digit Code	Name	Ticketing Code
	RN	EURALAIR INTERNATIONAL	836
	YQ	EURO AIR HELICOPTER SERVICE AB	
	EE	EURO BERLIN	770
ECA		EUROCYPRAIR	
EUC		EURO-CYPRIA (CHARTER)	
EEZ		EUROFLY	
		EUROFLY (CHARTER)	
	EY	EUROPE AERO SERVICE	546
		EUROPEAN EXPEDITE	256
		EUROWORLD	844
	BR	EVA AIR	
	OT	EVERGREEN HELICOPTERS ALASKA	
EXC	EQ	EXCALIBUR AIRWAYS	
	AD	EXEC EXPRESS	504
	NA	EXECUTIVE AIR CHARTER	
	FX	EXPRESS AIR	569
	9E	EXPRESS AIRLINES	430
		EXPRESS ONE INTERNATIONAL INC	
	IH	FALCON CARGO AB.	759
	EF	FAR EASTERN AIR TRANSPORT	265
	UD	FAST AIR CARRIER (CARGO)	726
FDX	FM	FEDERAL EXPRESS CORP. (CARGO)	023
	PC	FIJI AIR	677
FIN	AY	FINNAIR	105
	FA	FINNAVIATION	
	7F	FIRST AIR	245
	9R	FLAGSHIP EXPRESS SERV (CARGO)	359
	FK	FLAMENCO AIRWAYS	580
	IX	FLANDRE AIR	972
	VV	FLEXAIR	
	EC	FLIGHT LINE	452
	YC	FLIGHT WEST AIRLINES	060
	GM	FLITESTAR	805
		FLORIDA EXPRESS	456
	OP	FLYING BOAT	370
	FT	FLYING TIGER LINE (CARGO)	
	GE	FOSHING AIRLINES	
		FOUR STAR AIR CARGO (CARGO)	861
	ZU	FREEDOM AIR	221
	3F	FRESH AIR CORP. (CARGO)	815
	WR	FRIENDLY ISLANDS AIRWAYS	971
	SI	FRIESENFLUG	SI
	4F	FRONTIER AIR	233
	2F	FRONTIER FLYING SERVICE	517
	GO	GAMBIA AIR SHUTTLE	216
	CK	GAMBIA AIRWAYS	866
GIA	GA	GARUDA INDONESIAN AIRWAYS	126
		GAS AIR CARGO	271
		GATEWAY PACE AVIATION	807
GBL	GT	GB AIRWAYS	171
	GP	GEMINI (CARGO)	625
GHA	GH	GHANA AIRWAYS CORPORATION	237
	9C	GILL AVIATION	786
	DC	GOLDEN AIR COMMUTER	

3 Digit Code	2 Digit Code	Name	Ticketing Code
		GOLDEN STAR AIR CARGO	
	LK	GOLDFIELDS AIR SERVICES	
	8G	GP EXPRESS AIRLINES INC.	825
	QD	GRAND AIRWAYS	475
	YE	GRAND CANYON AIRLINES	374
		GREAT BARRIER AIRLINES	
		GREAT CHINA AIRLINES	
	ZK	GREAT LAKES AVIATION	846
GRN	WK	GREEN AIR (CHARTER)	
	GL	GREENLANDAIR (GRONLANDSFLY)	631
GFA	GF	GULF AIR	072
	XF	GULF FLITE CENTER	383
	3M	GULFSTREAM INTERNATIONAL A/L	449
	GY	GUYANA AIRWAYS CORPORATION	206
	7A	HAINES AIRWAYS	
		HAITI AIR FREIGHT INTERNAT.	671
		HAITI NATIONAL AIRLINES	284
	TV	HAITI TRANS AIR	362
	WD	HAITIAN AVIATION LINE	851
HAS	HX	HAMBURG AIRLINES	099
	VN	HANG KHONG VIETNAM	738
	4H	HANNA'S AIR SALTSPRING	
	8H	HARBOR AIR SERVICE	458
	HG	HARBOR AIRLINES	495
	HA	HAWAIIAN AIRLINES	173
	ZL	HAZELTON AIRLINES	
		HEAVYLIFT CARGO AIRL. (CARG0)	
	YO	HELI AIR MONACO	747
	OI	HELI TRANSPORT	764
	MY	HELIFRANCE	
	IU	HELIFRANS AIR SERVICE	860
	CN	HELIJET	
	JB	HELIJET AIRWAYS	613
		HENSON AVIATION	531
	2E	HERMANS/MARKAIR EXPRESS	325
		HEX'AIR	848
	ZS	HISPANIOLA AIRWAYS (CARGO)	263
	HJ	HOLMSTROEM AIR AB	
		HONDURAS INTERCARGO AIRLINE	669
	QX	HORIZON AIRLINES	481
ABR	AK	HUNTING CARGO AIRLINES	
		HUTCHAIR	863
	HZ	HUTCHINSON AIR (CARGO)	
		I.L.P.O/ARUBA CARGO (CARGO)	564
IBE	IB	IBERIA	075
ICE	FI	ICELANDAIR FLUGLEIDIR	108
	LS	ILIAMNA AIR TAXI	
	IC	INDIAN AIRLINES	058
	ND	INTAIR	330
IEA		INTER EUROPEAN AIRWAYS	
		INTERAMERICANA DE AVIACION	601
	RS	INTERCONTINENTAL DE AVIACION	
	IF	INTERFLUG	107
		INTER-ISLAND AIR	882

3 Digit Code	2 Digit Code	Name	Ticketing Code
		INTERNACIONAL DE AVIACION	420
	IQ	INTEROT AIR SERVICES	614
		IPEC AVIATION (CARGO)	717
IRA	IR	IRAN AIR	096
	IA	IRAQI AIRWAYS	073
	4M	ISLAND AIR	
	AK	ISLAND AIR, SA	
	IS	ISLAND AIRLINES	
	2S	ISLAND EXPRESS	
	2N	ISLANDER AIR/AIR NEWARK	
	WC	ISLENA AIRLINES	282
	FW	ISLES OF SCILLY SKYBUS	
	IL	ISTANBUL AIRLINES	
ITJ		ITALJET (CHARTER)	
	LN	JAMAHIRIYA LIBYAN ARAB AIRLINE	148
		JAMAICA AIR FREIGHTERS	605
		JANAIR (CARGO)	462
	JN	JAPAN AIR COMMUTER	
JAL	JL	JAPAN AIR LINES	131
	JD	JAPAN AIR SYSTEM	234
	EG	JAPAN ASIA AIRWAYS	688
	JT	JARO INTERNATIONAL	
JAT	JU	JAT YUGOSLAV AIRLINES	115
JEA	JY	JERSEY EUROPEAN AIRWAYS	267
	JX	JES AIR	691
		JET AIRWAYS	
	9W	JET AIRWAYS (INDIA) LTD	
		JET ALSACE	716
		JET EXECUTIVE INTERNATIONAL	310
	JI	JET EXPRESS	878
	8J	JETALL	662
	DK	KAMPUCHEA AIRLINES	
	KR	KARAIR	261
	6K	KEEWATIN AIR	157
	KD	KENDELL AIRLINES	678
	5K	KENMORE AIR	
	4K	KENN BOREK AIR	652
	KQ	KENYA AIRWAYS	706
	6S	KETCHIKAN AIR SERVICE	469
	HE	KEYSTONE AIR SERVICE	921
		KING ISLAND AIRLINES	
	2K	KITTY HAWK AIRWAYS (CARGO)	352
	KL	KLM CITYHOPPER (KLM COMMUTER)	
KLM	KL	KLM ROYAL DUTCH AIRLINES	074
KAL	KE	KOREAN AIR	180
	2Y	KOYUKON AIR	
KAC	KU	KUWAIT AIRWAYS	229
	KH	KYRNAIR	
	JF	L.A.B. FLYING SERVICE	510
	7J	L.A.P.S.A	213
LAB		LAB AIRLINES	
	WJ	LABRADOR AIRWAYS	927
	LR	LACSA	133
	LD	LADE (LINEAS AER DEL ESTADO)	177

3 Digit Code	2 Digit Code	Name	Ticketing Code
	UC	LADECO	145
		LAKE UNION AIR	461
	7L	LAKE UNION AIR SERVICE	461
	TM	LAM-LINHAS AEREAS MOCAMBIQUE	068
	LA	LAN-CHILE	045
	QV	LAO AVIATION	627
	PZ	LAP(LINEAS AEREAS PARAGUAYAS)	705
	MJ	LAPA	069
	TH	LAR TRANSREGIONAL	259
	7K	LARRY'S FLYING SERVICE	
	TQ	LAS VEGAS AIRWAYS	540
	NG	LAUDA AIR	231
	LV	LAV LINEA AERO VENEZOLANA	046
	QL	LESOTHO AIRWAYS	721
	4X	L'EXPRESS AIRLINES	534
	LI	LIAT	140
	QB	LIGNES AERIENNES INTER-QUEBEC	968
	GC	LINA CONGO	246
	RT	LINCOLN AIRLINES	
	LC	LINEAS AER DEL CARIBE (CARGO)	029
	LF	LINJEFLYG	247
	JK	LINK AIRWAYS	
	LE	LINK AIRWAYS (SOUTH AFRICA)	600
		LINK AMERICA (CARGO)	474
LAL	TE	LITHUANIAN AIRLINES	
LLB	LB	LLOYD AEREO BOLIVIANO	051
LOG	LC	LOGANAIR	122
		LOKEN AVIATION INC	
	YL	LONG ISLAND AIRLINES LTD	443
LOT	LO	LOT POLISH AIRLINES	080
	L2	LOVE AIR	
	LT	LTU INTERNATIONAL AIRWAYS	266
LTE		LUFTANSA TRANS ESPANA	
	LG	LUXAIR LUXEMBOURG AIRLINES	149
	CD	M.K. AIRLINES	
	3R	MACAIR	812
	MT	MACKNIGHT AIRLINES	
DMA	DM	MAERSK AIR (DANISH AIRLINES)	349
	2J	MAJESTIC AIRLINES (CARGO)	
		MAKUNG AIRLINES	
MAS	MH	MALAYSIA AIRLINES	232
MAH	MA	MALEV HUNGARIAN AIRLINES	182
	FH	MALI AIRWAYS	
	HB	MALI-TINBOUCTOU AIR SERVICE	679
	6E	MALMO AVIATION	984
MXE	JE	MANX AIRLINES INC.	916
	BF	MARKAIR	478
	MP	MARTINAIR HOLLAND NV	
	MW	MAYA AIRWAYS	
	IG	MERIDIANA	191
	MZ	MERPATI NUSANTARA AIRLINES	621
	YV	MESA AIRLINES	533
	XJ	MESABA AIRLINES	582
		METAVIA AIRLINES	873

3 Digit Code	2 Digit Code	Name	Ticketing Code
		METHOW AVIATION	519
	HY	METRO AIRLINES	380
		METRO AIRLINES NORTHEAST	450
		METRO EXPRESS	887
	FY	METROFLIGHT AIRLINES	
	MG	MGM GRAND AIR	558
		MICHIGAN PENINSULA AIRWAYS	574
MEA	ME	MIDDLE EAST AIRLINES	076
	ML	MIDWAY AIRLINES	557
	WV	MIDWEST AVIATION	896
	YX	MIDWEST EXPRESS AIRLINES	453
		MILLON AIR (CARGO)	034
	IW	MINERVE	646
		MISR. OVERSEAS AIRWAYS (CARGO)	931
	FS	MISSIONARY AVIATION FELLOWSHIP	
	ZO	MOHAWK AIRLINES	390
MON	ZB	MONARCH AIRLINES	974
		MONTAIR FLIGHT SERVICE	319
MNT		MONTSERRAT AIRWAYS	
	NM	MOUNT COOK LINE OF NEW ZEALAND	445
	ZR	MUK AIR	796
	UB	MYANMA AIRWAYS CORPORATION	209
	JO	N.V LUCHTVAARTMAATSCHAPPIJ TWN	
	NJ	NAMAKWALAND LUGDIENS	
	DV	NANTUCKET AIRLINES	
		NASA SOYUZ AVIATION (CARGO)	
	8N	NASHVILLE EAGLE	
	HC	NASKE AIR	
NXA	NX	NATIONAIR CANADA	151
	YJ	NATIONAL AIRLINES	
	9L	NATIONAL CAPITAL AIRWAYS	426
	XV	NATURE ISLAND EXPRESS	
	EJ	NEW ENGLAND AIRLINES	367
	HD	NEW YORK HELICOPTER CORP	814
	WA	NEWAIR	797
		NEWFOUNDLAND/LABRADOR AIR TRAN	645
	NS	NFD LUFTVERKEHRS	104
NGA	WT	NIGERIA AIRWAYS	087
	KZ	NIPPON CARGO AIRLINES	933
	FN	NIUE AIRLINES	
	HN	NLM DUTCH AIRLINES	195
	HK	NOBLE AIR	
		NORCANAIR	
	JH	NORDESTA LINHAS AER REG	
	EO	NORDIC & SWEDEN AIRWAYS	650
	UI	NORLANDAIR (ICELAND)	
	NR	NORONTAIR	066
	NC	NORSKAIR	665
		NORTH CROSS AIRWAYS	
	5N	NORTHCOAST EXECUTIVE AIRLINES	497
	2V	NORTHEAST EXPRESS REGIONAL	463
		NORTHERN AIR CARGO (CARGO)	345
	RU	NORTHERN COMMUTER AIRLINES	
NWA	NW	NORTHWEST AIRLINES	012

3 Digit Code	2 Digit Code	Name	Ticketing Code
	NV	NORTHWEST TERRITORIAL AIRWAYS	668
	3E	NORTHWESTERN AIR LEASE	
	HW	NORTH-WRIGHT AIR	
	JA	NORWAY AIRLINES	
	6N	NUNASI-NORTHLAND AIRLINES	
	LP	NYGE-AERO	
AAN		OASIS INTERNATIONAL AIRLINES	
	5H	ODIN AIR	
	4B	OLSON AIR SERVICE	
	OL	OLT OSTFRIESISCHE LUFTRANSPORT	704
OAL	OA	OLYMPIC AIRWAYS	050
	WY	OMAN AVIATION SERVICES	910
	9X	ONTARIO EXPRESS	940
	VQ	OXLEY AIRLINES	
	RI	P.T MANDALA AIRLINES	
		PACIFIC AIRLINES	
	PQ	PACIFIC COAST AIRLINES	561
	8P	PACIFIC COASTAL AIRLINES	905
	2W	PACIFIC MIDLAND AIRLINES	763
PIA	PK	PAKISTAN INT AIRLINE	214
PAF		PANAF AIRWAYS (CHARTER)	
		PANAMA AIRWAYS	421
	PV	PANORAMA AIR	311
	HI	PAPILLON AIRWAYS	563
PGT		PEGASUS AIRLINES	
	9P	PELANGI AIR	
	PD	PEM AIR	329
	KS	PENINSULA AIRWAYS	339
		PENNSYLVANIA AIRLINES	395
	4P	PEOPLES AIR	906
	UW	PERIMETER AIRLINES	711
PAL	PR	PHILIPPINE AIRLINES	079
	NP	PICCOLO AIRLINES	
	PU	PLUNA URUGUAYIAN AIRLINES	286
	WO	POLARWING	
	PH	POLYNESIAN AIRLINES	162
	NI	PORTUGALIA	685
	2P	PRAIRIE FLYING SERVICE	094
	RP	PRECISION AIRLINES	544
		PREMIERE AIRLINES	350
		PRIME AIR	514
	FB	PROMAIR AUSTRALIA	
	YS	PROTEUS	
	AG	PROVINCIAL AIRWAYS	967
	PE	PROVINICIAL AIR SERVICES	
	5P	PTARMIGAN AIRWAYS	697
QFA	QF	QANTAS AIRWAYS	081
		QUEBEC AVIATION	911
	QJ	QUEENSLAND PACIFIC AIRLINES	
	QH	QWESTAIR	
		RACE CARGO AIRLINES	765
	4R	RAVEN AIR	
	7R	REDWING AIRWAYS	594
	RV	REEVE ALEUTIAN AIRWAYS	338

3 Digit Code	2 Digit Code	Name	Ticketing Code
	7S	REGION AIR	
		RENTA-JET FLUGDIENST	
		RFG-REGIONALFLUG	637
	WE	RHEINTALFLUG SEEWALD	915
	6R	RICHARDS AVIATION (CARGO)	552
	SL	RIO-SUL SERVICOS AEREOS REGION	293
	IK	ROADAIR FEEDER SERVICE	
	JC	ROCKY MOUNTAIN AIRWAYS	428
	ZD	ROSS AVIATION	
	WI	ROTTNEST AIRBUS	
	5R	ROVER AIRWAYS (CARGO)	376
	RR	ROYAL AIR FORCE	
	AT	ROYAL AIR MAROC	147
	BI	ROYAL BRUNEI AIRLINES	672
RJA	RJ	ROYAL JORDANIAN AIRLINE	512
RNA	RA	ROYAL NEPAL AIRLINES	285
	ZC	ROYAL SWAZI NATIONAL AIRWAYS	141
		RWL-LUFTFAHRT GMBH & CO	801
	XY	RYAN AIR (ALASKA)	251
RYR	FR	RYANAIR	224
		S.A.R. AVIONS TAXIS	
	ZG	SABAIR AIRLINES	
SAB	SN	SABENA WORLD AIRLINES	082
		SABER AVIATION (CARGO)	854
	9S	SABOURIN LAKE AIRWAYS	
	EH	SAETA	156
	KP	SAFAIR	103
	SH	SAHSA	274
	8S	SALAIR (CARGO)	477
	YD	SALAIR AB	947
	TS	SAMOA AVIATION	
	WB	SAN	739
	BB	SANSA	907
	UF	SARO AIRLINES	
	SP	SATA AIA ACORES	737
	ZT	SATENA	
SVA	SV	SAUDI ARABIAN	065
SAS	SK	SCANDINAVIAN AIRLINES	117
	SY	SCANJET	
	YR	SCENIC AIRLINES	398
	ZM	SCIBE AIRLIFT	939
	WW	SCOTTISH EUROPEAN AIRWAYS	626
		SEAGREEN AIR TRANSPORT	308
	RW	SEAIR PACIFIC	
	XT	SECTOR AIRLINES (CARGO)	987
		SERVICE AERIEN FRANCAIS	
	8L	SERVICIO AEREO LEO LOPEZ	
	2Z	SERVICIOS AEREOS LITORAL	642
		SERVICIOS DE CARGA AEREA	641
	VC	SERVIVENSA	985
	SS	SHABAIR	
	NL	SHAHEEN AIR INTERNATIONAL	740
	3S	SHUSWAP FLIGHT CENTRE	
		SIERRA PACIFIC AIRLINES	

3 Digit Code	2 Digit Code	Name	Ticketing Code
		SIGI AIR CARGO COMPANY	714
	MI	SILKAIR	
	MQ	SIMMONS AIRLINES	
	7B	SIMPSON AIR	166
	SQ	SINGAPORE AIRLINES	618
	5U	SKAGWAY AIR SERVICE	
	OO	SKY WEST AIRLINES	302
	9F	SKYCRAFT AIR TRANSPORT	973
	8M	SKYMASTER	581
	YT	SKYWEST AIRLINES	674
	HU	SLOV-AIR	
	MM	SOCIEDAD AERONAUTICA MEDELLIN	334
	IE	SOLOMON ISLANDS AIRLINES	193
	HH	SOMALI AIRLINES	089
SAA	SA	SOUTH AFRICAN AIRWAYS	083
	XE	SOUTH CENTRAL AIR	301
	SG	SOUTHEAST AIRLINES LIMITED	
		SOUTHERN AIR	
	SJ	SOUTHERN AIR TRANPORT (CARGO)	351
	NU	SOUTHWEST AIRLINES (JAPAN)	353
	WN	SOUTHWEST AIRLINES (U.S.A.)	526
SPP		SPAN AIR	
	YW	STATESWEST AIRLINES	454
	NB	STERLING AIRWAYS	194
SAY	CB	SUCKLING AIRWAYS	969
	SD	SUDAN AIRWAYS	200
		SULTAN AIR (CHARTER)	
		SUMO AIRLINES (CARGO)	541
	VL	SUN PACIFIC AIRLINES	
	EZ	SUN-AIR OF SCANDINAVIA	
SMB		SUNBEAM AIRLINE (CHARTER)	
	PI	SUNFLOWER AIRLINES	252
	OC	SUNSHINE AVIATION	938
	OF	SUNSTATE AIRLINES	620
	PY	SURINAM AIRWAYS	192
	JG	SWEDAIR	616
SWR	SR	SWISSAIR TRANSPORT COMPANY	085
	FD	SYDNEY AIRLINES	
	RB	SYRIAN ARAB AIRLINES	070
	EQ	T.A.M.E.	269
	DT	TAAG ANGOLA AIRLINES	118
	TA	TACA INTERNATIONAL AIRLINES	202
	CQ	TAHITI CONQUEST AIRLINES	
		TAIWAN AIRLINES COMPANY	710
	GV	TALAIR	447
	KK	TAM	
	QT	TAMPA AIRLINES (CARGO)	729
	TX	TAN AIRLINES	208
	4E	TANANA AIR SERVICE	
TAP	TP	TAP AIR PORTUGAL	047
	9Q	TAQUAN AIR SERVICE	
	RO	TAROM ROMANIAN AIR TRANSPORT	281
	TJ	TAS AIRWAYS S.P.A	667
	3K	TATONDUK AIR SERVICE	

3 Digit Code	2 Digit Code	Name	Ticketing Code
	QS	TATRA AIR	904
		TEDDY AIR	
	CL	TEMPLEHOF AIRWAYS U.S.A.	175
	KN	TEMSCO HELICOPTERS	876
	TG	THAI AIRWAYS INTERNATIONAL	217
	LU	THERON AIRWAYS	
TRS		TIA	
		TIKAL JETS (CARGO)	489
		TIME AIR SWEDEN	
		TNT SAVA S.A.	849
	AB	TORRES AIR	
TUR		TOUR EUROPE (CHARTER)	
TOW	NC	TOWER AIR	305
		TPI INTER. AIRWAYS (CARGO)	587
		TRANS AIR	499
		TRANS ARABIAN AIR TRANS(CARGO)	
	YB	TRANS CONTINENTAL A/L (CARGO)	837
	7T	TRANS COTE	
TEI		TRANS EUROPEAN AIR (CHARTER)	
		TRANS EUROPEAN AIRWAYS (CHART)	
	JQ	TRANS JAMAICAN AIRLINES	100
	TL	TRANS MEDITERRAREAN AIR(CARGO)	270
	4Q	TRANS NORTH AVIATION	
	9N	TRANS STATES AIRLINES	414
TWA	TW	TRANS WORLD AIRLINES	015
		TRANS-AIR-LINK (CARGO)	348
TRA	HV	TRANSAVIA AIRLINES	979
	TD	TRANSAVIO	
	TR	TRANSBRASIL S/A LINHAS AEREAS	653
		TRANSCARGO (CARGO)	978
	KV	TRANSKEI AIRWAYS	264
	IO	TRANSPORT AERIEN TRANS EXPORT	153
	IJ	TRANSPORT AERIEN TRANSREGIONAL	936
		TRANSPORT AIR CENTRE	203
	VR	TRANSPORTES AEREOS CABO VERDE	696
	GD	TRANSPORTES AEREOS EJECUTIVOS	838
	VW	TRANSPORTES AEROMAR	942
	YZ	TRANSPORTES DE GUINE BISSAU	241
	8T	TRAVELAIR	
	BW	TRINIDAD & TOBAGO BWIA INT	106
	PM	TROPIC AIR	
	BN	TROPICAL SEA AIRLINES	922
	TB	TRUMP SHUTTLE	857
	UG	TUNINTER	
	TU	TUNIS AIR	199
	TT	TUNISAVIA	720
		TURK HAVA TASIMACILIGI	929
	TK	TURKISH AIRLINES	235
	KT	TURTLE AIRWAYS	
	6T	TYEE AIRWAYS	
	VO	TYROLEAN AIRWAYS	734
UGA	QU	UGANDA AIRLINES CORPORATION	673
	PS	UKRAINE INTERNATIONAL AIRLINES	
UAL	UA	UNITED AIRLINES	016

3 Digit Code	2 Digit Code	Name	Ticketing Code
	5X	UNITED PARCEL SERVICE (CARGO)	406
	9U	UNIVERSAL AIRLINES (CARGO)	598
		US EXPRESS (CARGO)	
	US	USAIR	037
	UT	UTA	142
		VALLEY AIR SERVICES INC	482
	J7	Valuejet	
	5J	VALUJET	
BRG	RG	VARIG BRAZILIAN AIRLINES	042
	VP	VASP	343
	PF	VAYUDOOT	925
VIA	VA	VENEZUELAN INTL AIRWAYS	164
	VI	VIEQUES AIR LINK	381
	ZP	VIRGIN AIR	315
VIR	VS	VIRGIN ATLANTIC AIRWAYS	932
	FV	VIVA AIR	728
	4V	VOYAGEUR AIRWAYS	908
	3V	WAGLISLA AIR	
	XW	WALKERS CAY AIRLINE	360
		WALLISAIR	
	4W	WARBELOW'S AIR VENTURES	
	KY	WATERWINGS AIRWAYS (TE ANAU)	914
	KJ	WEST AIR EXECUTIVE	
	3L	WEST ISLE AIR	
	OE	WESTAIR COMMUTER AIRLINES	460
	WS	WESTATES AIRLINES	573
	MB	WESTERN AIRLINES	
	FO	WESTERN NEW SOUTH WALES AIR	
		WESTPAC AIRLINES (CARGO)	
	WF	WIDEROE'S FLYVESELSKAP	701
	8F	WILBURS FLIGHT OPERATIONS	442
	6W	WILDERNESS AIRLINE (1975)	
	WM	WINDWARD ISLANDS AIRWAYS	295
	WQ	WINGS AIRWAYS	842
	SE	WINGS OF ALASKA	397
	RM	WINGS WEST AIRLINES	
		WORLD AIRWAYS (CHARTER)	
	WG	WORLDWAYS CANADA LTD	
	8R	WRA	393
		WRANGLER AVIATION (CARGO)	490
	8V	WRIGHT AIR SERVICE	
	MF	XIAMEN AIRLINES	
	XO	XINJIANG AIRLINES	
	ST	YANDA AIRLINES	
IYE	IY	YEMEN AIRWAYS	635
	9Y	YUTANA AIRLINES	
	4Y	YUTE AIR ALASKA	476
ZAC	QZ	ZAMBIA AIRWAYS	169
		ZANTOP INT AIRLINES (CARGO)	391
	ZA	ZAS AIRLINES OF EGYPT	708
	OD	ZULIANA DE AVIACION (CARGO)	822

Occupant Codes for Airline Tenants

The $ symbol is used as a placeholder in order to conform to the aforementioned layering convention.

Airline	Y - designation
Air Ghana	$GH
Air Jamaica	$JM
Aer Lingus	$El
Air Mobility Command	$MC
Air Ontario/Air Canada	$AC
American Airlines	$AA
America West	$HP
British Airways	$BA
Continental Airlines	$CO
Delta Airlines	$DL
Frontier Airlines	$F9
Icelandair	$FI
Northwest Airlines	$NW
Pro Air	$P9
Ryan lnt'I Airlines	$XY
Trans World Airlines	$TW
United Airlines	$UA
US Airways	$US
MetroJet	USM
Southwest Airlines	L$WN

Occupant Codes for Other Tenants

Baltimore/Washington International Airport lessees and their corresponding layer codes.

Y - designation	Company
AEX	A-1 Express
AGR	United States Department of Agriculture
ALA	Alamo Rent-a-Car
ARC	Arinc
AVS	Avis Car Rental
BUD	Budget Car Rental
CEX	Currency Exchange
CHM	Chimes
CMD	Celebrate Maryland
CUS	U.S. Customs
DEA	Drug Enforcement Agency
DOL	Dollar Car Rental
DUT	Duty Free
MAA	Federal Aviation Administration
GLO	Globe Airport Security
HNT	Huntleigh
HTZ	Host International, Inc.
INS	Herb Car Rental

Y - designation	Company
HST	Immigration and Naturalization Service
ITS	International Total Services, Inc.
LHD	Lockheed
MAA	Maryland Aviation Administration
MAA	Millar Elevator (MAA)
MAS	Service Master
MTA	Maryland Transportation Authority Police
NAT	National Car Rental
PHS	Public Health Service
SIG	Signature Flight Support, Inc.
SKY	Sky Sites
SMT	SmarteCarte
SUS	Super Shuttle
TRX	Travelex
TRA	Travelers Aid Society
USM	U.S. Mail
USO	USO
VAC	Vacant
WAC	Wackenhut Security Services

Usage Codes for Layering Convention

Z-Designation	Description	Patterned Hatch	Scale/Angle
DR	Directory	-none-	-
FB	Food and beverages (retail)	CROSS	96/0°
FD	flight information directory	- none -	-
HR	holdroom	DASH	00/45°
LS	lighted sign	- none -	-
MS	Merchandising space (retail)	STARS	50/0°
ON	office, no public	ANS136	100/0°
OP	office, public access	ANS133	100/90°
PM	Public meeting/lounge	ACRD_IS014W100	3/315°
PS	public stairs	ANS134	50/90°
PL	public elevator	- none -	-
PE	public escalator	SACNCR	200/90°
PC	public corridor	- none -	-
PC	restricted corridor	ANGLE	60/45°
PT	public telephones	- none -	-
RR	restroom	AN S132	50/90°
SF	special, finished	- matches usage -	
SU	special, unfinished	ANS138	120/0°
SC	security checkpoint	ANS137	150/0°
SS	Special, storage	ANS138	120/0°
TC	ticket counter	ANS131	100/0°
UM	utility, mechanical	SQUARE	100/0°
UE	utility, electrical	ZIGZAG	100/0°
UT	utility, telecommunications	TRIANG	100/90°
VP	visual paging	- none -	

APPENDIX 3

Glossary of Acronyms for Use in Airport Documents

-A-	
A/C –Aircraft	ARINC -Aeronautical Radio, Inc.
A/H -Altitude/Height	A/G -Air to Ground
AAF -Army Air Field	AAC -Mike Monroney Aeronautical Center
AAP -Advanced Automation Program	AAI -Arrival Aircraft Interval
ABDIS -Automated Data Interchange System Service B	AAR -Airport Acceptance Rate
ACAS -Aircraft Collision Avoidance System	ACAIS -Air Carrier Activity Information System
ACCT -Accounting Records	ACC -Area Control Center
ACDO -Air Carrier District Office	ACD -Automatic Call Distributor
ACFO -Aircraft Certification Field Office	ACF -Area Control Facility
ACID -Aircraft Identification	ACFT -Aircraft
ACLT -Actual Landing Time Calculated	ACLS -Automatic Carrier Landing System
ADA -Air Defense Area	ACO -Aircraft Certification Office
ADAS -AWOS Data Acquisition System	ADAP -Airport Development Aid Program
ADDA -Administrative Data	ADCCP -Advanced Data Communications Control Procedure
ADI -Automatic De-Ice and Inhibitor	ADF -Automatic Direction Finding
ADIZ -Air Defense Identification Zone	ADIN -AUTODIN Service
ADLY -Arrival Delay	ADL -Aeronautical Data-Link
ADP -Automated Data Processing	ADO -Airline Dispatch Office
ADSIM -Airfield Delay Simulation Model	ADS -Automatic Dependent Surveillance
ADTN -Administrative Data Transmission Network	ADSY -Administrative Equipment Systems
ADVO -Administrative Voice	ADTN2000 -Administrative Data Transmission Network 2000
AEIS – Airport Engineering Information System	AEG -Aircraft Evaluation Group
AERA -Automated En-Route Air Traffic Control	AEX -Automated Execution
AF -Airway Facilities	AFB -Air Force Base
AFIS -Automated Flight Inspection System	AFP -Area Flight Plan
AFRES -Air Force Reserve Station	AFS -Airways Facilities Sector
AFSFO -AFS Field Office	AFSFU -AFS Field Unit
AFSOU -AFS Field Office Unit (Standard is AFSFOU)	AFSS -Automated Flight Service Station
AFTN -Automated Fixed Telecommunications Network	AGL -Above Ground Level
AID -Airport Information Desk	AIG -Airbus Industries Group
AIM -Airman's Information Manual	AIP -Airport Improvement Plan
AIRMET -Airmen's Meteorological Information	AIRNET -Airport Network Simulation Model
AIS -Aeronautical Information Service	AIT -Automated Information Transfer
ALP -Airport Layout Plan	ALS -Approach Lighting System
ALSF1 -ALS with Sequenced Flashers I	ALSF2 -ALS with Sequenced Flashers II
ALSIP -Approach Lighting System Improvement Plan	ALTRV -Altitude Reservation
AMASS -Airport Movement Area Safety System	AMCC -ACF/ARTCC Maintenance Control Center
AMOS -Automated Meteorological Observation Station	AMP -ARINC Message Processor (OR) Airport Master Plan
AMVER -Automated Mutual Assistance Vessel Rescue System	ANC -Alternate Network Connectivity
ANG -Air National Guard	ANGB -Air National Guard Base
ANMS -Automated Network Monitoring System	ANSI -American National Standards Group
AP -Acquisition Plan	APP -Approach
APS -Airport Planning Standard	AQAFO -Aeronautical Quality Assurance Field Office
ARAC -Army Radar Approach Control (AAF)	ARAC -Aviation Rulemaking Advisory Committee
ARCTR -FAA Aeronautical Center or Academy	ARF -Airport Reservation Function
ARLNO -Airline Office ARO -Airport Reservation Office	AWS -Air Weather Station
ARO -Airport Reservation Office	ARP -Airport Reference Point
ARSA -Airport Service Radar Area	ARSR -Air Route Surveillance Radar
ARTCC -Air Route Traffic Control Centre	ARTS -Automated Radar Terminal System

ASAS -Aviation Safety Analysis System	ASC -AUTODIN Switching Center
ASCP -Aviation System Capacity Plan	ASD -Aircraft Situation Display
ASDA -Accelerate - Stop Distance Available	ASLAR -Aircraft Surge Launch And Recovery
ASM -Available Seat Mile	ASP -Arrival Sequencing Program
ASOS -Automatic Surface Observation System	ASQP -Airline Service Quality Performance
ASR -Airport Surveillance Radar	ASTA -Airport Surface Traffic Automation
ASV -Airline Schedule Vendor	AT -Air Traffic
ATA -Air Transport Association of America	ATAS -Airspace and Traffic Advisory Service
ATCAA -Air Traffic Control Assigned Airspace	AT&T -American Telephone and Telegraph
AT&T ASDC -AT&T Agency Service Delivery Center	AT&T CSA -AT&T Customer Support Associate
ATC -Air Traffic Control	ATCBI -Air Traffic Control Beacon Indicator
ATCCC -Air Traffic Control Command Center	ATCO -Air Taxi Commercial Operator
ATCRB -Air Traffic Control Radar Beacon	ATCRBS -Air Traffic Control Radar Beacon System
ATCSCC -Air Traffic Control Systems Command Center	ATCT -Airport Traffic Control Tower
ATIS -Automated Terminal Information Service	ATISR -ATIS Recorder
ATM -Air Traffic Management	ATM -Asynchronous Transfer Mode
ATMS -Advanced Traffic Management System	ATN -Aeronautical Telecommunications Network
ATODN -AUTODIN Terminal (FUS)	ATOVN -AUOTVON (Facility)
ATOMS -Air Traffic Operations Management System	ATS -Air Traffic Service
ATSCCP -ATS Contingency Command Post	ATTIS -AT&T Information Systems
AUTODIN -DoD Automatic Digital Network	AUTOVON -DoD Automatic Voice Network
AVON -AUTOVON Service	AVN -Aviation Standards National Field Office, Oklahoma City
AWIS -Airport Weather Information	AWOS -Automated Weather Observation System
AWP -Aviation Weather Processor	AWPG -Aviation Weather Products Generator
-B-	
BANS-BRITE Alphanumeric System	BART -Billing Analysis Reporting Tool (GSA software tool)
BASIC -Basic Contract Observing Station	BASOP -Military Base Operations
BCA -Benefit/Cost Analysis	BCR -Benefit/Cost Ratio
BDAT -Digitized Beacon Data	BMP -Best Management Practices
BOC -Bell Operating Company	bps -bits per second
BRI -Basic Rate Interface	BRITE -Bright Radar Indicator Terminal Equipment
BRL -Building Restriction Line	BUEC -Back-up Emergency Communications
BUECE -Back-up Emergency Communications Equipment	
-C-	
CAA -Civil Aviation Authority	CAB -Civil Aeronautics Board
CARF -Central Altitude Reservation Facility	CASFO -Civil Aviation Security Office
CAT –Category	CAT -Clear - Air Turbulence
CAU -Crypto Ancillary Unit	CBI -Computer Based Instruction
CCC -Communications Command Center	CCCC -Staff Communications
CCCH -Central Computer Complex Host	CC&O -Customer Cost and Obligation
CCSD -Command Communications Service Designator	CCS7-NI -Communication Channel Signal-7 - Network Interconnect
CCU -Central Control Unit	CD -Common Digitizer
CDR -Cost Detail Report	CDT -Controlled Departure Time
CDTI -Cockpit Display of Traffic Information	CENTX -Central Telephone Exchange
CEQ -Council on Environmental Quality	CERAP -Central Radar Approach
CFC -Central Flow Control	CFCF -Central Flow Control Facility
CFCS -Central Flow Control Service	CFWP -Central Flow Weather Processor
CFWU -Central Flow Weather Unit	CGAS -Coast Guard Air Station
CLC -Course Line Computer	CLIN -Contract Line Item
CLT -Calculated Landing Time	CM -Commercial Service Airport
CNMPS -Canadian Minimum Navigation Performance Specification Airspace	CNS -Consolidated NOTAM System
CNSP -Consolidated NOTAM System Processor	CO -Central Office
COE -U.S. Army Corps of Engineers	COMCO -Command Communications Outlet
CONUS -Continental United States	CORP -Private Corporation other than ARINC or MITRE
CPE -Customer Premise Equipment	CPMIS -Consolidated Personnel Management Information System
CRA -Conflict Resolution Advisory	CRDA -Converging Runway Display Aid
CRT -Cathode Ray Tube	CSA -Communications Service Authorization

CSIS -Centralized Storm Information System	CSO -Customer Service Office
CSR -Communications Service Request	CSS -Central Site System
CTA -Controlled Time of Arrival	CTA -Control Area
CTA/FIR -Control Area/Flight Information Region	CTAF -Common Traffic Advisory Frequency
CTAS -Center - Tracon Automation System	CTMA -Center Traffic Management Advisor
CUPS -Consolidated Uniform Payroll System	CVFR -Controlled Visual Flight Rules
CVTS -Compressed Video Transmission Service	CW -Continuous Wave
CWSU -Central Weather Service Unit	CWY -Clearway
-D-	
DA-Direct Access	DA -Decision Altitude/Decision Height
DA -Descent Advisor	DABBS -DITCO Automated Bulletin Board System
DAIR -Direct Altitude and Identity Readout	DAR -Designated Agency Representative
DARC -Direct Access Radar Channel	dBA -Decibels A-weighted
DBCRC -Defense Base Closure and Realignment Commission	DBMS -Data Base Management System
DBRITE -Digital Bright Radar Indicator Tower Equipment	DCA -Defense Communications Agency
DCAA -Dual Call, Automatic Answer Device	DCCU -Data Communications Control Unit
DCE -Data Communications Equipment	DDA -Dedicated Digital Access
DDD -Direct Distance Dialing	DDM -Difference in Depth of Modulation
DDS -Digital Data Service	DEA -Drug Enforcement Agency
DEDS -Data Entry and Display System	DEIS -Draft Environmental Impact Statement
DEP –Departure	DEWIZ -Distance Early Warning Identification Zone
DF -Direction Finder	DFAX -Digital Facsimile
DFI -Direction Finding Indicator	DGPS -Differential Global Positioning Satellite (System)
DH -Decision Height	DID -Direct Inward Dial
DIP -Drop and Insert Point	DIRF -Direction Finding
DITCO -Defense Information Technology Contracting Office Agency	DME -Distance Measuring Equipment
DME/P -Precision Distance Measuring Equipment	DMN -Data Multiplexing Network
DNL -Day-Night Equivalent Sound Level (Also called Ldn)	DOD -Direct Outward Dial
DoD -Department of Defense	DOI -Department of Interior
DOS -Department of State	DOT -Department of Transportation
DOTS -Dynamic Ocean Tracking System	DOTCC -Department of Transportation Computer Center
DSCS -Digital Satellite Compression Service	DSUA -Dynamic Special Use Airspace
DTS -Dedicated Transmission Service	DUAT -Direct User Access Terminal
DVFR -Defense Visual Flight Rules	DVFR -Day Visual Flight Rules
DVOR -Doppler Very High Frequency Omni-Directional Range	DYSIM -Dynamic Simulator
-E-	
E-MSAW -En-Route Automated Minimum Safe Altitude Warning	EARTS -En Route Automated Radar Tracking System
ECOM -En Route Communications	ECVFP -Expanded Charted Visual Flight Procedures
EDCT -Expedite Departure Path	EFAS -En Route Flight Advisory Service
EFC -Expect Further Clearance	EFIS -Electronic Flight Information Systems
EIAF -Expanded Inward Access Features	EIS - Environmental Impact Statement
ELT -Emergency Locator Transmitter	ELWRT -Electrowriter
EMPS -En Route Maintenance Processor System	ENAV -En Route Navigational Aids
EPA -Environmental Protection Agency	EPS -Engineered Performance Standards
EOF -Emergency Operating Facility	EPSS -Enhanced Packet Switched Service
ERAD -En Route Broadband Radar	ESEC -En Route Broadband Secondary Radar
ESP -En Route Spacing Program	ESYS -En Route Equipment Systems
ESF -Extended Superframe Format	ETA -Estimated Time of Arrival
ETE -Estimated Time En Route	ETG -Enhanced Target Generator
ETMS -Enhanced Traffic Management System	ETN -Electronic Telecommunications Network
EVAS -Enhanced Vortex Advisory System	EVCS -Emergency Voice Communications System
-F-	
FAA-Federal Aviation Administration	F&E -Facility and Equipment
FAAAC -FAA Aeronautical Center	FAACIS -FAA Communications Information System
FAATC -FAA Technical Center	FAC -Facility
FAF -Final Approach Fix	FAP -Final Approach Point
FAPM -FTS2000 Associate Program Manager	FAR -Federal Aviation Regulation

FAATSAT -FAA Telecommunications Satellite	FAST -Final Approach Spacing Tool
FAX -Facsimile Equipment	FBO -Fixed Base Operator
FBS -Fall Back Switch	FCC -Federal Communications Commission
FCLT -Freeze Calculated Landing Time	FCOM -FSS Radio Voice Communications
FCPU -Facility Central Processing Unit	FDAT -Flight Data Entry and Printout (FDEP) and Flight Data Service
FDE -Flight Data Entry	FDEP -Flight Data Entry and Printout
FDIO -Flight Data Input/Output	FDIOC -Flight Data Input/Output Center
FDIOR -Flight Data Input/Output Remote	FDM -Frequency Division Multiplexing
FDP -Flight Data Processing	FED -Federal
FEIS -Final Environmental Impact Statement	FEP -Front End Processor
FFAC -From Facility	FIFO -Flight Inspection Field Office
FIG -Flight Inspection Group	FINO -Flight Inspection National Field Office
FIPS -Federal Information Publication Standard	FIR -Flight Information Region
FIRE -Fire Station	FIRMR -Federal Information Resource Management Regulation
FL -Flight Level	FLOWSIM -Traffic Flow Planning Simulation
FMA -Final Monitor Aid	FMF -Facility Master File
FMIS -FTS2000 Management Information System	FMS -Flight management System
FNMS -FTS2000 Network Management System	FOIA -Freedom Of Information Act
FP -Flight Plan	FRC -Request Full Route Clearance
FSAS -Flight Service Automation System	FSDO -Flight Standards District Office
FSDPS -Flight Service Data Processing System	FSEP -Facility/Service/Equipment Profile
FSP -Flight Strip Printer	FSPD -Freeze Speed Parameter
FSS -Flight Service Station	FSSA -Flight Service Station Automated Service
FSTS -Federal Secure Telephone Service	FSYS -Flight Service Station Equipment Systems
FTS -Federal Telecommunications System	FTS2000 -Federal Telecommunications System 2000
FUS -Functional Units or Systems	FWCS -Flight Watch Control Station
-G-	
GA-General Aviation	GAA -General Aviation Activity
GAAA -General Aviation Activity and Avionics	GADO -General Aviation District Office
GCA -Ground Control Approach	GNAS -General National Airspace System
GNSS -Global Navigation Satellite System	GOES -Geostationary Operational Environmental Satellite
GOESF -GOES Feed Point	GOEST -GOES Terminal Equipment
GPS -Global Positioning Satellite	GPWS -Ground Proximity Warning System
GRADE -Graphical Airspace Design Environment	GS -Glide Slope Indicator
GSA -General Services Administration	
-H-	
H-Non-Directional Radio Homing Beacon (NDB)	HAA -Height Above Airport
HAL -Height Above Landing	HARS -High Altitude Route System
HAT -Height Above Touchdown	HAZMAT -Hazardous Materials
HCAP -High Capacity Carriers	HLDC -High Level Data Link Control
HDME -NDB with Distance Measuring Equipment	HDQ -FAA Headquarters
HELI –Heliport	HF -High Frequency
HH -NDB, 2kw or More	HI-EFAS -High Altitude EFAS
HOV -High Occupancy Vehicle	HSI -Horizontal Situation Indicators
HUD -Housing and Urban Development	HWAS -Hazardous In-Flight Weather Advisory
Hz –HERTZ	
-I-	
IA-Indirect Access	IAF -Initial Approach Fix
I/AFSS -International AFSS	IAP -Instrument Approach Procedures
IAPA -Instrument Approach Procedures Automation	IBM -International Business Machines
IBP -International Boundary Point	IBR -Intermediate Bit Rate
ICAO -International Civil Aviation Organization	ICSS -International Communications Switching Systems
IDAT -Interfacility Data	IF -Intermediate Fix
IFCP -Interfacility Communications Processor	IFDS -Interfacility Data System
IFEA -In-Flight Emergency Assistance	IFO -International Field Office
IFR -Instrument Flight Rules	IFSS -International Flight Service Station
ILS -Instrument Landing System	IM -Inner Marker
IMC -Instrument Meteorological Conditions	INM -Integrated Noise Model

INS -Inertial Navigation System	IRMP -Information Resources Management Plan
ISDN -Integrated Services Digital Network	ISMLS -Interim Standard Microwave Landing System
ITI -Interactive Terminal Interface	IVRS -Interim Voice Response System
IW -Inside Wiring	
-J-	
-K-	
Kbps-Kilobits Per Second	KHz -Kilohertz
KVDT -Keyboard Video Display Terminal	
-L-	
LAA-Local Airport Advisory	LAAS -Low Altitude Alert System
LABS -Leased A B Service	LABSC -LABS GS-200 Computer
LABSR -LABS Remote Equipment	LABSW -LABS Switch System
LAHSO -Land and Hold Short Operation	LAN -Local Area Network
LATA -Local Access and Transport Area	LAWRS -Limited Aviation Weather Reporting System
LCF -Local Control Facility	LCN -Local Communications Network
LDA -Localizer Directional Aid	LDA -Landing Directional Aid
LDIN -Lead-in Lights	LEC -Local Exchange Carrier
LF -Low Frequency	LINCS -Leased Interfacility NAS Communications System
LIS -Logistics and Inventory System	LLWAS -Low Level Wind Shear Alert System
LM/MS -Low/Medium Frequency	LMM -Locator Middle Marker
LMS -LORAN Monitor Site	LOC -Localizer
LOCID -Location Identifier	LOI -Letter of Intent
LOM -Compass Locator at Outer Marker	LORAN -Long Range Aid to Navigation
LRCO -Limited Remote Communications Outlet	LRNAV -Long Range Navigation
LRR -Long Range Radar	
-M-	
FAA-Maximum Authorized Altitude	MALS -Medium Intensity Approach Lighting System
MALSF -MALS with Sequenced Flashers	MALSR -MALS with Runway Alignment Indicator Lights
MAP -Modified Access Pricing	MAP -Military Airport Program
MAP -Missed Approach Point	MAP -Maintenance Automation Program
Mbps -Megabits Per Second	MCA -Minimum Crossing Altitude
MCAS -Marine Corps Air Station	MCC -Maintenance Control Center
MCL -Middle Compass Locator	MCS -Maintenance and Control System
MDA -Minimum Descent Altitude	MDT -Maintenance Data Terminal
MEA -Minimum En Route Altitude	METI -Meteorological Information
MF -Middle Frequency	MFJ -Modified Final Judgement
MFT -Meter Fix Crossing Time/Slot Time	MHA -Minimum Holding Altitude
MHz –Megahertz	MIA -Minimum IFR Altitudes
MIDO -Manufacturing Inspection District Office	MIS -Meteorological Impact Statement
MISC –Miscellaneous	MISO -Manufacturing Inspection Satellite Office
MIT -Miles In Trail	MITRE -Mitre Corporation
MLS -Microwave Landing System	MM -Middle Marker
MMC -Maintenance Monitoring Console	MMS -Maintenance Monitoring System
MNPS -Minimum Navigation Performance Specification	MNPSA -Minimum Navigation Performance Specifications Airspace
MOA -Memorandum of Agreement	MOA -Military Operations Area
MOCA -Minimum Obstruction Clearance Altitude	MODE C -Altitude-Encoded Beacon Reply
MODE C -Altitude Reporting Mode of Secondary Radar	MODE S -Mode Select Beacon System
MOU -Memorandum of Understanding	MPO -Metropolitan Planning Organization
MPS -Maintenance Processor Subsystem (OR) Master Plan Supplement	MRA -Minimum Reception Altitude
MRC -Monthly Recurring Charge	MSA -Minimum Safe Altitude
MSAW -Minimum Safe Altitude Warning	MSL -Mean Sea Level
MSN -Message Switching Network	MTCS -Modular Terminal Communications System
MTI -Moving Target Indicator	MUX -Multiplexer
MVA -Minimum Vectoring Altitude	MVFR -Marginal Visual Flight Rules
-N-	
NAAQS-National Ambient Air Quality Standards	NADA -NADIN Concentrator
NADIN -National Airspace Data Interchange Network	NADSW -NADIN Switches

NAILS -National Airspace Integrated Logistics Support	NAMS -NADIN IA
NAPRS -National Airspace Performance Reporting System	NAS -National Airspace System or Naval Air Station
NASDC -National Aviation Safety Data	NASP -National Airspace System Plan
NASPAC -National Airspace System Performance Analysis Capability	NATCO -National Communications Switching Center
NAVAID -Navigation Aid	NAVMN -Navigation Monitor and Control
NAWAU -National Aviation Weather Advisory Unit	NAWPF -National Aviation Weather Processing Facility
NCAR -National Center for Atmospheric Research; Boulder, CO	NCF -National Control Facility
NCIU -NEXRAD Communications Interface Unit	NCS -National Communications System
NDB -Non-Directional Radio Homing Beacon	NDNB -NADIN II
NEPA -National Environmental Policy Act	NEXRAD -Next Generation Weather Radar
NFAX -National Facsimile Service	NFDC -National Flight Data Center
NFIS -NAS Facilities Information System	NI -Network Interface
NICS -National Interfacility Communications System	NPIAS -National Plan of Integrated Airport Systems
NM -Nautical Mile	NMAC -Near Mid Air Collision
NMC -National Meteorological Center	NMCE -Network Monitoring and Control Equipment
NMCS -Network Monitoring and Control System	NOAA -National Oceanic and Atmospheric Administration
NOC -Notice Of Completion	NOTAM -Notice to Airmen
NPDES -National Pollutant Discharge Elimination System	NPIAS -National Plan of Integrated Airport Systems
NRC -Non-Recurring Charge	NRCS -National Radio Communications Systems
NSAP -National Service Assurance Plan	NSSFC -National Severe Storms Forecast Center
NSSL -National Severe Storms Laboratory; Norman, OK	NTAP -Notices To Airmen Publication
NTP -National Transportation Policy	NTSB -National Transportation Safety Board
NTZ -No Transgression Zone	NWS -National Weather Service
NWSR -NWS Weather Excluding NXRD	NSWRH -NWS Regional Headquarters
NXRD -Advanced Weather Radar System	
-O-	
OAG-Official Airline Guide	OALT -Operational Acceptable Level of Traffic
OAW -Off-airway Weather Station	ODAL -Omni directional Approach Lighting System
ODAPS -Oceanic Display and Processing Station	OFA -Object Free Area
OFDPS -Offshore Flight Data Processing System	OFT -Outer Fix Time
OFZ -Obstacle Free Zone	OM -Outer Marker
OMB -Office of Management and Budget	ONER -Oceanic Navigational Error Report
OPLT -Operational Acceptable Level of Traffic	OPSW -Operational Switch
OPX -Off Premises Exchange	ORD -Operational Readiness Demonstration
OTR -Oceanic Transition Route	OTS -Organized Track System
-P-	
PABX-Private Automated Branch Exchange	PAD -Packet Assembler/Disassembler
PAM -Peripheral Adapter Module	PAPI -Precision Approach Path Indicator
PAR -Precision Approach Radar	PAR -Preferential Arrival Route
PATWAS -Pilots Automatic Telephone Weather Answering Service	PBCT -Proposed Boundary Crossing Time
PBRF -Pilot Briefing	PBX -Private Branch Exchange
PCA -Positive Control Airspace	PCM -Pulse Code Modulation
PDAR -Preferential Arrival And Departure Route	PDC -Pre-Departure Clearance
PDC -Program Designator Code	PDR -Preferential Departure Route
PDN -Public Data Network	PFC -Passenger Facility Charge
PHONE –Telephone	PIC -Principal Interexchange Carrier
PIDP -Programmable Indicator Data Processor	PIREP -Pilot Weather Report
PMS -Program Management System	POLIC -Police Station
POP -Point Of Presence	POT -Point Of Termination
PPIMS -Personal Property Information Management System	PR -Primary Commercial Service Airport
PRI -Primary Rate Interface	PRM -Precision Runway Monitor
PSDN -Public Switched Data Network	PSN -Packet Switched Network
PSS -Packet Switched Service	PSTN -Public Switched Telephone Network
PUB –Publication	PUP -Principal User Processor
PVC -Permanent Virtual Circuit	PVD -Plan View Display
-Q-	
-R-	

RAIL-Runway Alignment Indicator Lights	RAPCO -Radar Approach Control (USAF)
RAPCON -Radar Approach Control	RATCC -Radar Air Traffic Control Center
RATCF -Radar Air Traffic Control Facility (USN)	RBC -Rotating Beam Ceilometer
RBDPE -Radar Beacon Data Processing Equipment	RBSS -Radar Bomb Scoring Squadron
RCAG -Remote Communications Air/Ground	RCC -Rescue Coordination Center
RCF -Remote Communication Facility	RCCC -Regional Communications Control Centers
RCIU -Remote Control Interface Unit	RCL -Radio Communications Link
RCLR -RCL Repeater	RCLT -RCL Terminal
RCO -Remote Communications Outlet	RCU -Remote Control Unit
RDAT -Digitized Radar Data	RDP -Radar Data Processing
RDSIM -Runway Delay Simulation Model	REIL -Runway End Identification Lights
RF -Radio Frequency	RL -General Aviation Reliever Airport
RMCC -Remote Monitor Control Center	RMCF -Remote Monitor Control Facility
RML -Radio Microwave Link	RMLR -RML Repeater
RMLT -RML Terminal	RMM -Remote Maintenance Monitoring
RMMS -Remote Maintenance Monitoring System	RMS -Remote Monitoring Subsystem
RMSC -Remote Monitoring Subsystem Concentrator	RNAV -Area Navigation
RNP -Required Navigation Performance	ROD -Record of Decision
ROSA -Report of Service Activity	ROT -Runway Occupancy Time
RP -Restoration Priority	RPC -Restoration Priority Code
RPG -Radar Processing Group	RPZ -Runway Protection Zone
RRH -Remote Reading Hygrothermometer	RRHS -Remote Reading Hydrometer
RRWDS -Remote Radar Weather Display	RRWSS -RWDS Sensor Site
RSS -Remote Speaking System	RT -Remote Transmitter
RT & BTL -Radar Tracking And Beacon Tracking Level	RTAD -Remote Tower Alphanumeric Display
RTCA -Radio Technical Commission for Aeronautics	RTR -Remote Transmitter/Receiver
RTRD -Remote Tower Radar Display	RVR -Runway Visual Range
RW –Runway	RWDS -Same as RRWDS
RWP -Realtime Weather Processor	
-S-	
S/S - Sector Suite	SAC -Strategic Air Command
SAFI -Semi Automatic Flight Inspection	SALS -Short Approach Lighting System
SATCOM -Satellite Communications	SAWRS -Supplementary Aviation Weather Reporting System
SCC -System Command Center	SCVTS -Switched Compressed Video Telecommunications Service
SDF -Simplified Direction Finding	SDF -Software Defined Network
SDIS -Switched Digital Integrated Service	SDP -Service Delivery Point
SDS -Switched Data Service	SEL -Single Event Level
SELF -Simplified Short Approach Lighting System With Sequenced Flashing Lights	SFAR-38 -Special Federal Aviation Regulation 38
SHPO -State Historic Preservation Officer	SIC -Service Initiation Charge
SID -Station Identifier	SID -Standard Instrument Departure
SIGMET -Significant Meteorological Information	SIMMOD -Airport and Airspace Simulation Model
SIP -State Implementation Plan	SM -Statute Miles
SMGC -Surface Movement Guidance and Control	SMPS -Sector Maintenance Processor Subsystem
SMS -Simulation Modeling System	SNR -Signal-to-Noise Ratio, also: S/N
SOC -Service Oversight Center	SOIR -Simultaneous Operations On Intersecting Runways
SOIWR -Simultaneous Operations on Intersecting Wet Runways	SRAP -Sensor Receiver and Processor
SSALF -SSALS with Sequenced Flashers	SSALR -Simplified Short Approach Lighting System
SSB -Single Side Band	STAR -Standard Terminal Arrival Route
STD –Standard	STMUX -Statistical Data Multiplexer
STOL -Short Takeoff and Landing	SURPIC -Surface Picture
SVCA -Service A	SVCB -Service B
SVCC -Service C	SVCO -Service O
SVFO -Interphone Service F (A)	SVFB -Interphone Service F (B)
SVFC -Interphone Service F (C)	SVFD -Interphone Service F (D)
SVFR -Special Visual Flight Rules	
-T-	
T1MUX-T1 Multiplexer	TAAS -Terminal Advance Automation System
TACAN -Tactical Aircraft Control and Navigation	TACR -TACAN at VOR, TACAN only

TAF -Terminal Area Forecast	TARS -Terminal Automated Radar Service
TAS -True Air Speed	TATCA -Terminal Air Traffic Control Automation
TAVT -Terminal Airspace Visualization Tool	TCA -Traffic Control Airport or Tower Control Airport
TCA -Terminal Control Area	TCACCIS -Transportation Coordinator Automated Command and Control Information System
TCAS -Traffic Alert And Collision Avoidance System	TCC -DOT Transportation Computer Center
TCCC -Tower Control Computer Complex	TCE -Tone Control Equipment
TCLT -Tentative Calculated Landing Time	TCO -Telecommunications Certification Officer
TCOM -Terminal Communications	TCS -Tower Communications System
TDLS -Tower Data-Link Services	TDMUX -Time Division Data Multiplexer
TDWR -Terminal Doppler Weather Radar	TELCO -Telephone Company
TELMS -Telecommunications Management System	TERPS -Terminal Instrument Procedures
TFAC -To Facility	TH -Threshold
TIMS -Telecommunications Information Management System	TIPS -Terminal Information Processing System
TL –Taxilane	TMA -Traffic Management Advisor
TMC -Traffic Management Coordinator	TMC/MC -Traffic Management Coordinator/Military Coordinator
TMCC -Terminal Information Processing System	TMCC -Traffic Management Computer Complex
TMF -Traffic Management Facility	TML -Television Microwave Link
TMLI -Television Microwave Link Indicator	TMLR -Television Microwave Link Repeater
TMLT -Television Microwave Link Terminal	TM&O -Telecommunications Management and Operations
TMP -Traffic Management Processor	TMS -Traffic Management System
TMSPS -Traffic Management Specialists	TMU -Traffic Management Unit
TODA -Takeoff Distance Available	TOF -Time Of Flight
TOFMS -Time of Flight Mass Spectrometer	TOPS -Telecommunications Ordering and Pricing System (GSA software tool)
TORA -Take-off Run Available	TNAV -Terminal Navigational Aids
TR -Telecommunications Request	TRACAB -Terminal Radar Approach Control in Tower Cab
TRACON -Terminal Radar Approach Control Facility	TRAD -Terminal Radar Service
TRNG –Training	TSA -Taxiway Safety Area
TSEC -Terminal Secondary Radar Service	TSP -Telecommunications Service Priority
TSR -Telecommunications Service Request	TSYS -Terminal Equipment Systems
TTMA -TRACON Traffic Management Advisor	TTY -Teletype
TVOR -Terminal VHF Omnidirectional Range	TW -Taxiway
TWEB -Transcribed WeatherBroadcastTWR-Tower (non-controlled)	TY -Type (FAACIS)
-U-	
UAS -Uniform Accounting System	UHF -Ultra High Frequency
URA -Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970	USAF -United States Air Force
USOC -Uniform Service Order Code	
-V-	
VASI-Visual Approach Slope Indicator	VDME -VOR with Distance Measuring Equipment
VF -Voice Frequency	VFR -Visual Flight Rules
VHF -Very High Frequency	VLF -Very Low Frequency
VMC -Visual Meteorological Conditions	VNAV -Visual Navigational Aids
VNTSC -Volpe National Transportation System Center	VON -Virtual On-net
VOR -VHF Omnidirectional Range	VOR/DME -VHF Omnidirectional Range/Distance Measuring Equipment
VORTAC -VOR collocated with TACAN	VOT -VOR Test Facility
VRS -Voice Recording System	VSCS -Voice Switching and Control System
VTA -Vertex Time of Arrival	VTAC -VOR collocated with TACAN
VTOL -Vertical Takeoff and Landing	VTS -Voice Telecommunications System
-W-	
WAAS-Wide Area Augmentation System	WAN -Wide Area Network
WC -Work Center	WCP -Weather Communications Processor
WECO -Western Electric Company	WESCOM -Western Electric Satellite Communications
WMSC -Weather Message Switching Center	WMSCR -Weather Message Switching Center Replacement
WSCMO -Weather Service Contract Meteorological Observatory	WSFO -Weather Service Forecast Office
WSMO -Weather Service Meteorological Observatory	WSO -Weather Service Office

WTHR -"Weather"	WX -Weather
-X-	
-Y-	
-Z-	

APPENDIX 4

CADD to GIS Crosswalk

This appendix lists CADD layers defined in MAA's CADD Standards Manual, Version 4.0 and their associated GIS layers. The CADD layers are ordered by category (i.e. Airfield, Airspace, Environmental, etc.) and then by CADD layer name. The first character of the CADD layer name, which indicates the discipline, has been replaced with an asterisk ('*') meaning that any discipline code applies. CADD layers that are not relevant for GIS are excluded from this appendix.

CADD Layer Name	Category	Feature Class	Geometry
*-AFLD-AHOA	Airfield	AirOperationsArea	Polygon
*-AFLD-DSRF-BLDR	Airfield	RunwayHelipadDesignSurface	Polygon
*-AFLD-DSRF-KEYH	Airfield	RunwayHelipadDesignSurface	Polygon
*-AFLD-DSRF-NMOV	Airfield	RunwayHelipadDesignSurface	Polygon
*-AFLD-DSRF-OFA_	Airfield	RunwayHelipadDesignSurface	Polygon
*-AFLD-DSRF-OFZ_	Airfield	RunwayHelipadDesignSurface	Polygon
*-AFLD-DSRF-POFA	Airfield	RunwayHelipadDesignSurface	Polygon
*-AFLD-DSRF-RPZ_	Airfield	RunwayHelipadDesignSurface	Polygon
*-AFLD-DSRF-RSA_	Airfield	RunwayHelipadDesignSurface	Polygon
*-AFLD-FREQ	Airfield	FrequencyArea	Polygon
*-AFLD-LITE-APPR	Airfield	AirfieldLight	Point
*-AFLD-LITE-DIST	Airfield	AirfieldLight	Point
*-AFLD-LITE-LANE	Airfield	AirfieldLight	Point
*-AFLD-LITE-OBST	Airfield	AirfieldLight	Point
*-AFLD-LITE-RUNW	Airfield	AirfieldLight	Point
*-AFLD-LITE-SIGN	Airfield	AirfieldLight	Point
*-AFLD-LITE-TAXI	Airfield	AirfieldLight	Point
*-AFLD-LITE-THRS	Airfield	AirfieldLight	Point
*-AFLD-SECR-RSTR	Airfield	RestrictedAccessBoundary	Line
*-APRN-ACPK-BRDG	Airfield	PassengerLoadingBridge	Polygon
*-APRN-ANOM	Airfield	AircraftNonMovementArea	Line
*-APRN-CNTR	Airfield	MarkingLine	Line
*-APRN-DEIC	Airfield	DeicingArea	Polygon
*-APRN-GRND	Airfield	Apron	Polygon
*-APRN-HOLD	Airfield	MarkingLine	Line
*-APRN-MRKG	Airfield	MarkingLine	Line
*-APRN-OTLN	Airfield	Apron	Polygon
*-APRN-SECU	Airfield	MarkingLine	Line
*-APRN-SHLD	Airfield	MarkingLine	Line
*-APRN-SHLD-MRKG	Airfield	MarkingLine	Line

CADD Layer Name	Category	Feature Class	Geometry
*-APRN-SIGN	Airfield	AirportSign	Point
*-ELEV-SIGN	Airfield	AirportSign	Point
*-EQPM-JETB	Airfield	PassengerLoadingBridge	Polygon
*-FLOR-SIGN	Airfield	AirportSign	Point
*-HELI-BLST	Airfield	MarkingLine	Line
*-HELI-CNTR-MARK	Airfield	MarkingLine	Line
*-HELI-DIST	Airfield	MarkingLine	Line
*-HELI-DSRF	Airfield	RunwayHelipadDesignSurface	Polygon
*-HELI-IDEN	Airfield	MarkingArea	Polygon
*-HELI-SHLD	Airfield	Shoulder	Polygon
*-HELI-SIDE	Airfield	MarkingLine	Line
*-HELI-TDZM	Airfield	MarkingArea	Polygon
*-HELI-TLOF	Airfield	TouchdownLiftOff	Polygon
*-LITE-DIST	Airfield	AirportSign	Point
*-LITE-SIGN	Airfield	AirportSign	Point
*-OVRN-CNTR	Airfield	MarkingLine	Line
*-OVRN-IDEN	Airfield	RunwayHelipadDesignSurface	Polygon
*-OVRN-OTLN	Airfield	RunwayHelipadDesignSurface	Polygon
*-OVRN-SHLD-MRKG	Airfield	MarkingLine	Line
*-PADS-CNTR	Airfield	MarkingLine	Line
*-PADS-OTLN	Airfield	MarkingLine	Line
*-PADS-SHLD	Airfield	Shoulder	Polygon
*-PRKG-SIGN	Airfield	AirportSign	Point
*-PVMT-MRKG	Airfield	MarkingLine	Line
*-PVMT-MRKG-WHIT	Airfield	MarkingLine	Line
*-PVMT-MRKG-YELO	Airfield	MarkingLine	Line
*-ROAD-SIGN	Airfield	AirportSign	Point
*-RUNW-ARST	Airfield	RunwayArrestingArea	Polygon
*-RUNW-BLST	Airfield	RunwayBlastPad	Polygon
*-RUNW-CLRW	Airfield	RunwayHelipadDesignSurface	Polygon
*-RUNW-CNTR	Airfield	RunwayCenterline	Line
*-RUNW-CNTR-MARK	Airfield	MarkingLine	Line
*-RUNW-CNTR-MRKG	Airfield	MarkingArea	Polygon
*-RUNW-DISP	Airfield	MarkingArea	Polygon
*-RUNW-DIST	Airfield	MarkingArea	Polygon
*-RUNW-EDGE	Airfield	Runway	Polygon
*-RUNW-ENDP	Airfield	RunwayEnd	Point
*-RUNW-ENDP-MARK	Airfield	RunwayLabel	Point
*-RUNW-IDEN	Airfield	MarkingArea	Polygon
*-RUNW-LAHS	Airfield	RunwayLAHSO	Line

CADD Layer Name	Category	Feature Class	Geometry
*-RUNW-SAFT	Airfield	RunwaySafetyAreaBoundary	Polygon
*-RUNW-SEGM	Airfield	RunwayElement	Polygon
*-RUNW-SHLD	Airfield	MarkingLine	Line
*-RUNW-SIDE	Airfield	MarkingArea	Polygon
*-RUNW-SIGN	Airfield	AirportSign	Point
*-RUNW-STWY	Airfield	Stopway	Polygon
*-RUNW-TDZM	Airfield	MarkingArea	Polygon
*-RUNW-THRS	Airfield	MarkingArea	Polygon
*-SIGN-EXTN	Airfield	AirportSign	Point
*-SIGN-FRMG	Airfield	AirportSign	Point
*-SIGN-GAGE	Airfield	AirportSign	Point
*-SIGN-PANL	Airfield	AirportSign	Point
*-SIGN-SPRT	Airfield	AirportSign	Point
*-SPCL-TRAF	Airfield	AirportSign	Point
*-TAXI-CNTR-MARK	Airfield	MarkingLine	Line
*-TAXI-CNTR-MRKG	Airfield	MarkingLine	Line
*-TAXI-EDGE	Airfield	MarkingLine	Line
*-TAXI-HOLD	Airfield	TaxiwayHoldingPosition	Line
*-TAXI-INTS	Airfield	TaxiwayIntersection	Polygon
*-TAXI-OTLN	Airfield	TaxiwayElement	Polygon
*-TAXI-SHLD	Airfield	MarkingLine	Line
*-TAXI-SIGN	Airfield	AirportSign	Point
*-AIRS-LNDM	Airspace	LandmarkSegment	Line
*-AIRS-OBSC	Airspace	Obstacle	Point
*-AIRS-OBST-LINE	Airspace	ObstructionArea	Polygon
*-AIRS-OBST-POLY	Airspace	ObstructionArea	Polygon
*-AIRS-OBST-PPNT	Airspace	Obstacle	Point
*-AIRS-OTHR	Airspace	ObstructionIdSurface	Polygon
*-AIRS-PART-APRC	Airspace	ObstructionIdSurface	Polygon
*-AIRS-PART-CONL	Airspace	ObstructionIdSurface	Polygon
*-AIRS-PART-HORZ	Airspace	ObstructionIdSurface	Polygon
*-AIRS-PART-PRIM	Airspace	ObstructionIdSurface	Polygon
*-AIRS-PART-TRNS	Airspace	ObstructionIdSurface	Polygon
*-AIRS-TERP	Airspace	ObstructionIdSurface	Polygon
*-OBST-AIRS	Airspace	Obstacle	Point
*-AFLD-FAAR	Cadastral	FaaRegionArea	Polygon
*-AFLD-PROP	Cadastral	AirportBoundary	Polygon
*-PROP-CNTY	Cadastral	County	Polygon
*-PROP-ESMT	Cadastral	EasementsAndRightsofWay	Polygon
*-PROP-LEAS	Cadastral	LeaseZone	Polygon

CADD Layer Name	Category	Feature Class	Geometry
*-PROP-LINE	Cadastral	Parcel	Polygon
*-PROP-LUSE	Cadastral	LandUse	Polygon
*-PROP-LUSE-FUTR	Cadastral	LandUse	Polygon
*-PROP-MUNI	Cadastral	Municipality	Polygon
*-PROP-QTRS	Cadastral	Parcel	Polygon
*-PROP-RWAY	Cadastral	EasementsAndRightsofWay	Polygon
*-PROP-RWAY-ACQU	Cadastral	EasementsAndRightsofWay	Polygon
*-PROP-SECT	Cadastral	Parcel	Polygon
*-PROP-STAT	Cadastral	State	Polygon
*-PROP-SXTS	Cadastral	Parcel	Polygon
*-PROP-ZONG	Cadastral	Zoning	Polygon
*-BORE-CONE	Environmental	SampleCollectionPoint	Point
*-BORE-GENL-LOCN	Environmental	SampleCollectionPoint	Point
*-BORE-GPRO-LOCN	Environmental	SampleCollectionPoint	Point
*-BORE-HOLE	Environmental	SampleCollectionPoint	Point
*-BORE-LINE	Environmental	SampleCollectionPoint	Point
*-BORE-PUSH	Environmental	SampleCollectionPoint	Point
*-BORE-STRK	Environmental	SampleCollectionPoint	Point
*-BORE-UNDS-LOCN	Environmental	SampleCollectionPoint	Point
*-BORE-VCOR-LOCN	Environmental	SampleCollectionPoint	Point
*-BORW-IDEN	Environmental	FaunaHazardArea	Polygon
*-BORW-LINE	Environmental	FaunaHazardArea	Polygon
*-CHAN-BANK-TOP~	Environmental	Shoreline	Polygon
*-CHAN-DACL	Environmental	Shoreline	Polygon
*-CHAN-DACL-IDEN	Environmental	Shoreline	Polygon
*-CHAN-LIMT	Environmental	Shoreline	Polygon
*-CHAN-LIMT-IDEN	Environmental	Shoreline	Polygon
*-DRED-OHWM	Environmental	Shoreline	Polygon
*-ECCO-BURR	Environmental	FaunaHazardArea	Polygon
*-ECCO-DENS	Environmental	FaunaHazardArea	Polygon
*-ECCO-GATR	Environmental	FaunaHazardArea	Polygon
*-ECCO-HUMK	Environmental	FaunaHazardArea	Polygon
*-ECCO-NEST	Environmental	FaunaHazardArea	Polygon
*-ECCO-PRCH	Environmental	FaunaHazardArea	Polygon
*-FLHA-025Y	Environmental	FloodZone	Polygon
*-FLHA-050Y	Environmental	FloodZone	Polygon
*-FLHA-100Y	Environmental	FloodZone	Polygon
*-FLHA-200Y	Environmental	FloodZone	Polygon
*-FLHA-500Y	Environmental	FloodZone	Polygon
*-FLHA-IDEN	Environmental	FloodZone	Polygon

CADD Layer Name	Category	Feature Class	Geometry
*-MNST-AIRQ	Environmental	SampleCollectionPoint	Point
*-MNST-GWTR	Environmental	Shoreline	Polygon
*-MNST-SWTR	Environmental	Shoreline	Polygon
*-PLNT-BEDS	Environmental	ForestStandArea	Polygon
*-PLNT-BUSH	Environmental	ForestStandArea	Polygon
*-PLNT-BUSH-LINE	Environmental	ForestStandArea	Polygon
*-PLNT-CTNR	Environmental	FloraSpeciesSite	Point
*-PLNT-GRND	Environmental	ForestStandArea	Polygon
*-PLNT-MLCH	Environmental	ForestStandArea	Polygon
*-PLNT-PLTS	Environmental	FloraSpeciesSite	Point
*-PLNT-SPRG	Environmental	ForestStandArea	Polygon
*-PLNT-TREE	Environmental	FloraSpeciesSite	Point
*-PLNT-TREE-LINE	Environmental	ForestStandArea	Polygon
*-PLNT-TURF	Environmental	ForestStandArea	Polygon
*-POLL-CONC	Environmental	EnvironmentalContaminationArea	Polygon
*-POLL-POTN	Environmental	EnvironmentalContaminationArea	Polygon
*-RIVR-BANK-TOP~	Environmental	Shoreline	Polygon
*-RIVR-EDGE	Environmental	Shoreline	Polygon
*-SAMP-AIRS	Environmental	SampleCollectionPoint	Point
*-SAMP-AUGR	Environmental	SampleCollectionPoint	Point
*-SAMP-BIOL	Environmental	SampleCollectionPoint	Point
*-SAMP-CORE	Environmental	SampleCollectionPoint	Point
*-SAMP-DRVE	Environmental	SampleCollectionPoint	Point
*-SAMP-GRAB	Environmental	SampleCollectionPoint	Point
*-SAMP-GWTR	Environmental	SampleCollectionPoint	Point
*-SAMP-IDEN	Environmental	SampleCollectionPoint	Point
*-SAMP-MAGN	Environmental	SampleCollectionPoint	Point
*-SAMP-PERC	Environmental	SampleCollectionPoint	Point
*-SAMP-PITS	Environmental	SampleCollectionPoint	Point
*-SAMP-SEDI	Environmental	SampleCollectionPoint	Point
*-SAMP-SOIL	Environmental	SampleCollectionPoint	Point
*-SAMP-SOLI	Environmental	SampleCollectionPoint	Point
*-SAMP-SWTR	Environmental	SampleCollectionPoint	Point
*-SAMP-VERT	Environmental	SampleCollectionPoint	Point
*-SAMP-WASH	Environmental	SampleCollectionPoint	Point
*-SAMP-WAST	Environmental	SampleCollectionPoint	Point
*-SITE-EWAT	Environmental	Shoreline	Polygon
*-SITE-VEGE	Environmental	ForestStandArea	Polygon
*-SITE-VEGE-AREA	Environmental	ForestStandArea	Polygon
*-SITE-VEGE-HZRD	Environmental	FaunaHazardArea	Polygon

CADD Layer Name	Category	Feature Class	Geometry
*-SITE-VEGE-PONT	Environmental	FloraSpeciesSite	Point
*-SITE-WATR	Environmental	Shoreline	Polygon
*-STOR-HAZM	Environmental	HazMatStorageSite	Point
*-STOR-HAZW	Environmental	HazMatStorageSite	Point
*-TOPO-AUCO	Environmental	NoiseIncident	Point
*-TOPO-AUST	Environmental	NoiseMonitoringPoint	Point
*-TOPO-AUZN	Environmental	NoiseContour	Polygon
*-TOPO-BORE	Environmental	SampleCollectionPoint	Point
*-TOPO-FLZN	Environmental	FloodZone	Polygon
*-TOPO-SHOR	Environmental	Shoreline	Polygon
*-TOPO-SPEC	Environmental	FaunaHazardArea	Polygon
*-TOPO-WATR	Environmental	Shoreline	Polygon
*-TOPO-WETL	Environmental	Wetland	Polygon
*-WELL-ASR~	Environmental	SampleCollectionPoint	Point
*-WELL-MONT	Environmental	SampleCollectionPoint	Point
*-WELL-PIZO	Environmental	SampleCollectionPoint	Point
*-WETL-BOGS	Environmental	Wetland	Polygon
*-WETL-FENS	Environmental	Wetland	Polygon
*-WETL-MRSH	Environmental	Wetland	Polygon
*-WETL-MRSH-SALT	Environmental	Wetland	Polygon
*-WETL-MRSH-TIDL	Environmental	Wetland	Polygon
*-WETL-PCSN	Environmental	Wetland	Polygon
*-WETL-PHOL	Environmental	Wetland	Polygon
*-WETL-RPRN	Environmental	Wetland	Polygon
*-WETL-SLGH	Environmental	Wetland	Polygon
*-WETL-SWMP	Environmental	Wetland	Polygon
*-AERI-BNDY	Geodetic	ImageArea	Polygon
*-AERI-PHOT	Geodetic	ImageArea	Polygon
*-AERI-PNPT	Geodetic	ImageArea	Polygon
*-CTRL-BMRK	Geodetic	AirportControlPoint	Point
*-CTRL-GRID	Geodetic	CoordinateGridCell	Polygon
*-CTRL-HCPT	Geodetic	AirportControlPoint	Point
*-CTRL-HVPT	Geodetic	AirportControlPoint	Point
*-CTRL-TRAV	Geodetic	AirportControlPoint	Point
*-CTRL-VCPT	Geodetic	AirportControlPoint	Point
*-DETL-GRPH	Geodetic	CoordinateGridCell	Polygon
*-GRAD-AFTR	Geodetic	ElevationContour	Line
*-GRAD-EXST	Geodetic	ElevationContour	Line
*-GRAD-EXST-BASE	Geodetic	ElevationContour	Line
*-GRAD-EXST-SYR1	Geodetic	ElevationContour	Line

CADD Layer Name	Category	Feature Class	Geometry
*-GRAD-EXST-SYR2	Geodetic	ElevationContour	Line
*-GRAD-EXST-SYR3	Geodetic	ElevationContour	Line
*-GRAD-EXST-SYR4	Geodetic	ElevationContour	Line
*-GRAD-FNSH	Geodetic	ElevationContour	Line
*-GRAD-PRED	Geodetic	ElevationContour	Line
*-GRAD-SCLN	Geodetic	ElevationContour	Line
*-GRID-COOR	Geodetic	CoordinateGridCell	Polygon
*-GRID-COOR-IDEN	Geodetic	CoordinateGridCell	Polygon
*-GRID-EXTR	Geodetic	CoordinateGridCell	Polygon
*-GRID-FRAM	Geodetic	CoordinateGridCell	Polygon
*-GRID-HORZ	Geodetic	CoordinateGridCell	Polygon
*-GRID-IDEN	Geodetic	CoordinateGridCell	Polygon
*-GRID-INTR	Geodetic	CoordinateGridCell	Polygon
*-GRID-MAJR	Geodetic	CoordinateGridCell	Polygon
*-GRID-MINR	Geodetic	CoordinateGridCell	Polygon
*-GRID-VERT	Geodetic	CoordinateGridCell	Polygon
*-IMAG-BDRY-QUAD	Geodetic	ImageArea	Polygon
*-PROJ-LALO-COOR	Geodetic	CoordinateGridCell	Polygon
*-PROJ-STAT-COOR	Geodetic	CoordinateGridCell	Polygon
*-SURV-DATA	Geodetic	AirportControlPoint	Point
*-TOPO-BKLN	Geodetic	ElevationContour	Line
*-TOPO-COOR	Geodetic	CoordinateGridCell	Polygon
*-TOPO-COOR-LALO	Geodetic	CoordinateGridCell	Polygon
*-TOPO-COOR-STAT	Geodetic	CoordinateGridCell	Polygon
*-TOPO-DTMP	Geodetic	ElevationContour	Line
*-TOPO-DTMT	Geodetic	ElevationContour	Line
*-TOPO-MAJR	Geodetic	ElevationContour	Line
*-TOPO-MAJR-IDEN	Geodetic	ElevationContour	Line
*-TOPO-MINR	Geodetic	ElevationContour	Line
*-TOPO-MINR-IDEN	Geodetic	ElevationContour	Line
*-TOPO-MINR-ONEF	Geodetic	ElevationContour	Line
*-TOPO-MINR-TWOF	Geodetic	ElevationContour	Line
*-TOPO-RNYE	Geodetic	AirportControlPoint	Point
*-TOPO-SLOP-FILL	Geodetic	ElevationContour	Line
*-TOPO-SLOP-IDEN	Geodetic	ElevationContour	Line
*-TOPO-SLOP-TOPT	Geodetic	ElevationContour	Line
*-TOPO-SOUN	Geodetic	ElevationContour	Line
*-TOPO-SPOT	Geodetic	AirportControlPoint	Point
*-TOPO-SPOT-BLDG	Geodetic	AirportControlPoint	Point
*-WATR-SURF	Geodetic	ElevationContour	Line

CADD Layer Name	Category	Feature Class	Geometry
*-ACCS-EVTR	Interior	Elevator	Polygon
*-ACCS-STRS	Interior	Stair	Polygon
*-ACCS-STRS-FRMG	Interior	Stair	Polygon
*-ALRM-EQPM-SECU	Interior	Door	Line
*-BAGS-CARR	Interior	BaggageCarousel	Polygon
*-BAGS-CVRI	Interior	BaggageConveyor	Polygon
*-BAGS-CVRO	Interior	BaggageConveyor	Polygon
*-COLS-CNTR	Interior	BuildingColumn	Polygon
*-COLS-ENCL	Interior	BuildingColumn	Polygon
*-COLS-POST	Interior	BuildingColumn	Polygon
*-COLS-PRIM	Interior	BuildingColumn	Polygon
*-COLS-RBAR	Interior	BuildingColumn	Polygon
*-COLS-SECD	Interior	BuildingColumn	Polygon
*-DOOR-FULL	Interior	Door	Line
*-DOOR-PRHT	Interior	Door	Line
*-DOOR-SECR	Interior	Door	Line
*-FLOR-ECSL	Interior	Escalator	Polygon
*-FLOR-EVTR	Interior	Elevator	Polygon
*-FLOR-HRAL	Interior	Stair	Polygon
*-FLOR-LEVL	Interior	Floor	Polygon
*-FLOR-MWLK	Interior	MovingSidewalk	Polygon
*-FLOR-OTLN	Interior	Floor	Polygon
*-FLOR-OTLN-RPRM	Interior	Room	Polygon
*-FLOR-SPCE	Interior	Space	Polygon
*-FLOR-STRS	Interior	Stair	Polygon
*-FNDN-ANCH	Interior	Wall	Line
*-FNDN-CNTR	Interior	Wall	Line
*-FNDN-FTNG	Interior	BuildingColumn	Polygon
*-FNDN-GRBM	Interior	Wall	Line
*-FNDN-PEDS	Interior	BuildingColumn	Polygon
*-FNDN-PILE	Interior	BuildingColumn	Polygon
*-FURN-ACCS	Interior	Furnishing	Point
*-FURN-ADPC	Interior	Furnishing	Point
*-FURN-ARTW	Interior	Furnishing	Point
*-FURN-FLOR	Interior	Furnishing	Point
*-FURN-FREE	Interior	Furnishing	Point
*-FURN-GRID	Interior	Furnishing	Point
*-FURN-IDEN	Interior	Furnishing	Point
*-FURN-PLNT	Interior	Furnishing	Point
*-FURN-SEAT	Interior	Furnishing	Point

CADD Layer Name	Category	Feature Class	Geometry
*-FURN-STOR	Interior	Furnishing	Point
*-GLAZ-FULL	Interior	Window	Line
*-GLAZ-PRHT	Interior	Window	Line
*-GLAZ-SILL	Interior	Window	Line
*-HVAC-ACCS	Interior	Door	Line
*-OTLN-FLOR	Interior	Floor	Polygon
*-OTLN-OPNG	Interior	Door	Line
*-OTLN-ROOF	Interior	Floor	Polygon
*-PENE-WALL	Interior	Wall	Line
*-SITE-STRS	Interior	Stair	Polygon
*-WALL-ABUT	Interior	Wall	Line
*-WALL-CAVI	Interior	Wall	Line
*-WALL-CELL	Interior	Wall	Line
*-WALL-CNTR	Interior	Wall	Line
*-WALL-COFF	Interior	Wall	Line
*-WALL-CURT	Interior	Wall	Line
*-WALL-CWMG	Interior	Wall	Line
*-WALL-FULL	Interior	Wall	Line
*-WALL-FULL-EXTR	Interior	Wall	Line
*-WALL-FULL-INTR	Interior	Wall	Line
*-WALL-GARD	Interior	Wall	Line
*-WALL-HEAD	Interior	Wall	Line
*-WALL-JAMB	Interior	Wall	Line
*-WALL-LOAD	Interior	Wall	Line
*-WALL-MONO	Interior	Wall	Line
*-WALL-MOVE	Interior	Wall	Line
*-WALL-MSE~	Interior	Wall	Line
*-WALL-NONL	Interior	Wall	Line
*-WALL-OPEN-LVRS	Interior	Wall	Line
*-WALL-PCST	Interior	Wall	Line
*-WALL-PRHT	Interior	Wall	Line
*-WALL-RBAR	Interior	Wall	Line
*-WALL-RTWL	Interior	Wall	Line
*-WALL-SHEA	Interior	Wall	Line
*-WALL-SPCL	Interior	Wall	Line
*-WALL-STUD	Interior	Wall	Line
*-AFLD-AIDS-COMM	Navigational Aids	NavaidEquipment	Point
*-AFLD-AIDS-CRIT	Navigational Aids	NavaidEquipment	Point
*-AFLD-AIDS-GPS_	Navigational Aids	NavaidEquipment	Point
*-AFLD-AIDS-ILS_	Navigational Aids	NavaidEquipment	Point

CADD Layer Name	Category	Feature Class	Geometry
*-AFLD-AIDS-MCWV	Navigational Aids	NavaidEquipment	Point
*-AFLD-AIDS-OTHR	Navigational Aids	NavaidEquipment	Point
*-AFLD-AIDS-RADI	Navigational Aids	NavaidEquipment	Point
*-AFLD-AIDS-RADR	Navigational Aids	NavaidEquipment	Point
*-AFLD-AIDS-RMTE	Navigational Aids	NavaidEquipment	Point
*-AFLD-AIDS-SITE	Navigational Aids	NavaidEquipment	Point
*-AFLD-AIDS-SYST	Navigational Aids	NavaidEquipment	Point
*-AFLD-AIDS-WTHR	Navigational Aids	NavaidEquipment	Point
*-AFLD-BCNS-IDEN	Navigational Aids	NavaidEquipment	Point
*-AFLD-BCNS-MISC	Navigational Aids	NavaidEquipment	Point
*-AFLD-BCNS-STRB	Navigational Aids	NavaidEquipment	Point
*-SEAP-BUOY	SeaPlane	NavigationBuoy	Point
*-SEAP-RAMP	SeaPlane	SeaplaneRampSite	Polygon
*-SEAP-RAMP-CNTR	SeaPlane	SeaplaneRampCenterline	Line
*-SIGN-BUOY	SeaPlane	NavigationBuoy	Point
*-AFLD-SECR-SECA	Security	SecurityArea	Polygon
*-AFLD-SECR-SIDA	Security	SecurityIdDisplayArea	Polygon
*-AFLD-SECR-STER	Security	SterileArea	Polygon
*-CCTV-EQPM	Security	SurveillanceCamera	Point
*-BLDG-DECK	Structures	Building	Polygon
*-BLDG-DOCK	Structures	Building	Polygon
*-BLDG-OTLN	Structures	Building	Polygon
*-BLDG-OVHD	Structures	Building	Polygon
*-BLDG-PRCH	Structures	Building	Polygon
*-DECK-FLOR	Structures	Building	Polygon
*-DECK-ROOF	Structures	Building	Polygon
*-DETL-FENC-SECU	Structures	Fence	Line
*-DETL-GATE	Structures	Gate	Line
*-ELEV-OTLN	Structures	Building	Polygon
*-EXST-BLDG	Structures	Building	Polygon
*-GATE-AXIS	Structures	Gate	Line
*-GATE-MISC	Structures	Gate	Line
*-OTLN-BLDG	Structures	Building	Polygon
*-OTLN-STRC	Structures	Building	Polygon
*-PLAN-OTLN	Structures	Building	Polygon
*-PROP-CONS	Structures	ConstructionArea	Polygon
*-SAFE-FENC	Structures	Fence	Line
*-SITE-FENC	Structures	Fence	Line
*-SITE-GATE	Structures	Gate	Line
*-SITE-OTLN	Structures	ConstructionArea	Polygon

CADD Layer Name	Category	Feature Class	Geometry
*-STRC-TOWR	Structures	Tower	Point
*-ACCS-TUNL	Surface Transportation	Tunnel	Polygon
*-BRDG-BEAR	Surface Transportation	Bridge	Polygon
*-BRDG-CNTR	Surface Transportation	Bridge	Polygon
*-BRDG-CURB	Surface Transportation	Sidewalk	Polygon
*-BRDG-DECK	Surface Transportation	Bridge	Polygon
*-BRDG-OTLN	Surface Transportation	Bridge	Polygon
*-FNDN-TUNL	Surface Transportation	Tunnel	Polygon
*-GATE-WALK	Surface Transportation	Sidewalk	Polygon
*-MATL-CRAN	Surface Transportation	Bridge	Polygon
*-PRKG-OTLN	Surface Transportation	ParkingLot	Polygon
*-RAIL-BRDG	Surface Transportation	Bridge	Polygon
*-RAIL-BRDG-CNTR	Surface Transportation	RailroadCenterline	Line
*-RAIL-CNTR	Surface Transportation	RailroadCenterline	Line
*-RAIL-TRAK	Surface Transportation	RailroadCenterline	Line
*-RAIL-YARD	Surface Transportation	RailroadYard	Polygon
*-ROAD-ASPH	Surface Transportation	RoadSegment	Polygon
*-ROAD-CNTR	Surface Transportation	RoadCenterline	Line
*-ROAD-CONC	Surface Transportation	RoadSegment	Polygon
*-ROAD-CURB	Surface Transportation	RoadSegment	Polygon
*-ROAD-DRIV	Surface Transportation	DrivewayArea	Polygon
*-ROAD-DRIV-CNTR	Surface Transportation	DrivewayCenterline	Line
*-ROAD-GRVL	Surface Transportation	RoadSegment	Polygon
*-ROAD-OTLN	Surface Transportation	RoadSegment	Polygon
*-ROAD-POIN	Surface Transportation	RoadPoint	Point
*-ROAD-SHLD	Surface Transportation	RoadSegment	Polygon
*-ROAD-UPVD	Surface Transportation	RoadSegment	Polygon
*-SITE-BRDG	Surface Transportation	Bridge	Polygon
*-SITE-STRC	Surface Transportation	Bridge	Polygon
*-SITE-TUNL	Surface Transportation	Tunnel	Polygon
*-SITE-WALK	Surface Transportation	Sidewalk	Polygon
*-CMPA-AIRD	Utilities Air	CompressedAirDrainSeparator	Point
*-CMPA-FTTG	Utilities Air	CompressedAirFitting	Point
*-CMPA-PIPE	Utilities Air	CompressedAirPipeLine	Line
*-CMPA-VLVE	Utilities Air	CompressedAirValve	Point
*-CMPA-VLVP	Utilities Air	CompressedAirValvePit	Point
*-COMM-ACCS	Utilities Communications	CommAccessPoint	Point
*-COMM-AIRP	Utilities Communications	CommAirLine	Line
*-COMM-AMPL	Utilities Communications	CommAmplifier	Point
*-COMM-ANTL	Utilities Communications	CommAntennaLine	Line

CADD Layer Name	Category	Feature Class	Geometry
*-COMM-ANTS	Utilities Communications	CommAntenna	Point
*-COMM-APDP	Utilities Communications	CommAirPressureDevice	Point
*-COMM-ATTN	Utilities Communications	CommAttenuator	Point
*-COMM-BOTH	Utilities Communications	CommTelephoneBooth	Point
*-COMM-CABL-CBRL	Utilities Communications	CommCableBridgeLine	Line
*-COMM-CABL-CLAD	Utilities Communications	CommCableLadder	Point
*-COMM-CABL-COAX	Utilities Communications	CommCoaxialLine	Line
*-COMM-CABL-CRCK	Utilities Communications	CommCableRackLine	Line
*-COMM-CABL-TRAY	Utilities Communications	CommCableTrayLine	Line
*-COMM-CABL-TRGH	Utilities Communications	CommCableTroughLine	Line
*-COMM-COVR	Utilities Communications	CommAccessCoverageArea	Polygon
*-COMM-DSPL	Utilities Communications	CommDbsplice	Point
*-COMM-DUCT	Utilities Communications	CommDuctbank	Line
*-COMM-DVPT	Utilities Communications	CommDevice	Point
*-COMM-EQPT	Utilities Communications	CommEquipment	Point
*-COMM-FIBR	Utilities Communications	CommFiberopticLine	Line
*-COMM-GPNT	Utilities Communications	CommGroundPoint	Point
*-COMM-GPPA	Utilities Communications	CommGroundplaneArea	Polygon
*-COMM-GWAV	Utilities Communications	CommGroundwaveArea	Polygon
*-COMM-IMPD	Utilities Communications	CommImpedanceMatchingPoint	Point
*-COMM-INET	Utilities Communications	CommInternetCenter	Point
*-COMM-JBOX	Utilities Communications	CommJunction	Point
*-COMM-LCAP	Utilities Communications	CommLoadCapacitor	Point
*-COMM-LCOL	Utilities Communications	CommLoadCoilPoint	Point
*-COMM-LOOP	Utilities Communications	CommServiceLoopPoint	Point
*-COMM-LOSL	Utilities Communications	CommLineOfSightLine	Line
*-COMM-MCNV	Utilities Communications	CommMediaConverter	Point
*-COMM-MHOP	Utilities Communications	CommMultihopArea	Polygon
*-COMM-NETS	Utilities Communications	CommNetworkSystemsSite	Point
*-COMM-OTCL	Utilities Communications	CommOtherCable	Line
*-COMM-PATH	Utilities Communications	CommPathNode	Point
*-COMM-PEDS	Utilities Communications	CommPedestal	Point
*-COMM-PULB	Utilities Communications	CommPullbox	Point
*-COMM-RADP	Utilities Communications	CommRadio	Point
*-COMM-RADR	Utilities Communications	CommRadarSite	Point
*-COMM-RDRS	Utilities Communications	CommRadioReceiver	Point
*-COMM-RDTS	Utilities Communications	CommRadioTransmitter	Point
*-COMM-RELY	Utilities Communications	CommRelayStation	Point
*-COMM-RISR	Utilities Communications	CommRiser	Point
*-COMM-RPTR	Utilities Communications	CommRepeater	Point

CADD Layer Name	Category	Feature Class	Geometry
*-COMM-SATP	Utilities Communications	CommSatellitePoint	Point
*-COMM-SEGL	Utilities Communications	CommSegmentedCable	Line
*-COMM-SEGS	Utilities Communications	CommSegmentedCable	Line
*-COMM-SENS	Utilities Communications	CommSensor	Point
*-COMM-SIGN	Utilities Communications	CommElectronicMarker	Point
*-COMM-SLIN	Utilities Communications	CommPathSegmentLine	Line
*-COMM-SPKR	Utilities Communications	CommSpeaker	Point
*-COMM-SPLC	Utilities Communications	CommSplice	Point
*-COMM-SPLT	Utilities Communications	CommSplitter	Point
*-COMM-TELE	Utilities Communications	CommTelephone	Point
*-COMM-TERM	Utilities Communications	CommTerminator	Point
*-COMM-TRML	Utilities Communications	CommTerminal	Point
*-COMM-TWIS	Utilities Communications	CommTwistedPairLine	Line
*-COMM-VALT	Utilities Communications	CommVaultSite	Point
*-COMM-VIDS	Utilities Communications	CommVideoSite	Point
*-COMM-VOIC	Utilities Communications	CommVoiceSwitch	Point
*-COMM-VSIT	Utilities Communications	CommVerticalSite	Point
*-COMM-WAVG	Utilities Communications	CommWaveguideLine	Line
*-GLYC-CLVL	Utilities Deicing	DeicingCulvertCenterline	Line
*-GLYC-CLVS	Utilities Deicing	DeicingCulvertEnd	Point
*-GLYC-COUT	Utilities Deicing	DeicingLineCleanOut	Point
*-GLYC-DBAS	Utilities Deicing	DeicingDrainageBasin	Polygon
*-GLYC-DDIV	Utilities Deicing	DeicingDrainageDivide	Line
*-GLYC-DSCH	Utilities Deicing	DeicingDischargePoint	Point
*-GLYC-FLOW	Utilities Deicing	DeicingFlowControlPoint	Point
*-GLYC-FTTG	Utilities Deicing	DeicingFitting	Point
*-GLYC-INLT	Utilities Deicing	DeicingInlet	Point
*-GLYC-JBOX	Utilities Deicing	DeicingJunction	Point
*-GLYC-LIFT	Utilities Deicing	DeicingLiftStation	Point
*-GLYC-LINE	Utilities Deicing	DeicingLine	Line
*-GLYC-MARK	Utilities Deicing	DeicingMarker	Point
*-GLYC-PUMP	Utilities Deicing	DeicingPump	Point
*-GLYC-RESV	Utilities Deicing	DeicingReservoir	Point
*-GLYC-REVR	Utilities Deicing	DeicingGlycolRecoveryPit	Point
*-GLYC-STAT	Utilities Deicing	DeicingPumpStation	Point
*-GLYC-TANK	Utilities Deicing	DeicingTank	Point
*-GLYC-VALT	Utilities Deicing	DeicingVault	Point
*-GLYC-VLVE	Utilities Deicing	DeicingValve	Point
*-ELEC-BLIN	Utilities Electrical	ElectricalBusLine	Line
*-ELEC-CAPP	Utilities Electrical	ElectricalCapacitor	Point

CADD Layer Name	Category	Feature Class	Geometry
*-ELEC-CLIN	Utilities Electrical	ElectricalCable	Line
*-ELEC-DUCT	Utilities Electrical	ElectricalDuctbank	Line
*-ELEC-GENP	Utilities Electrical	ElectricalGenerator	Point
*-ELEC-GRPT	Utilities Electrical	ElectricalGround	Point
*-ELEC-HBLT	Utilities Electrical	ElectricalHeadBoltOutlet	Point
*-ELEC-JBOX	Utilities Electrical	ElectricalPedestal	Point
*-ELEC-LITE	Utilities Electrical	ElectricalLight	Point
*-ELEC-METR	Utilities Electrical	ElectricalMeter	Point
*-ELEC-MKPT	Utilities Electrical	ElectricalMarker	Point
*-ELEC-MTPT	Utilities Electrical	ElectricalMotor	Point
*-ELEC-PEDS	Utilities Electrical	ElectricalPedestal	Point
*-ELEC-REGP	Utilities Electrical	ElectricalRegulator	Point
*-ELEC-RISR	Utilities Electrical	ElectricalRiser	Point
*-ELEC-SITE	Utilities Electrical	ElectricalUtilitySite	Point
*-ELEC-SPLC	Utilities Electrical	ElectricalSplice	Point
*-ELEC-SUBS	Utilities Electrical	ElectricalSubstation	Polygon
*-ELEC-SWCH	Utilities Electrical	ElectricalSwitch	Point
*-ELEC-TRBP	Utilities Electrical	ElectricalTransformerBank	Point
*-ELEC-VALT	Utilities Electrical	ElectricalTransformerVault	Point
*-POLE-GUYL	Utilities Electrical	ElectricalPoleGuyLine	Line
*-POLE-GUYP	Utilities Electrical	ElectricalPoleGuyConnectionPoint	Point
*-POLE-TOWS	Utilities Electrical	ElectricalPoleTower	Point
*-EMCS-CABL	Utilities EMCS	EnergyCtrlMonCable	Line
*-EMCS-DUCT	Utilities EMCS	EnergyCtrlMonDuctbank	Line
*-EMCS-DVPT	Utilities EMCS	EnergyCtrlMonDevice	Point
*-EMCS-JBOX	Utilities EMCS	EnergyCtrlMonJunction	Point
*-EMCS-SIGN	Utilities EMCS	EnergyCtrlMonMarker	Point
*-FUEL-AEPT	Utilities Fuel	FuelAirEliminator	Point
*-FUEL-ANOD	Utilities Fuel	FuelAnode	Point
*-FUEL-ANOT	Utilities Fuel	FuelAnodeTestStation	Point
*-FUEL-FILT	Utilities Fuel	FuelFilterStrainer	Point
*-FUEL-FTTG	Utilities Fuel	FuelFitting	Point
*-FUEL-HYDR	Utilities Fuel	FuelHydrant	Point
*-FUEL-JBOX	Utilities Fuel	FuelJunction	Point
*-FUEL-MAIN	Utilities Fuel	FuelLine	Line
*-FUEL-METR	Utilities Fuel	FuelMeter	Point
*-FUEL-MKPT	Utilities Fuel	FuelMarker	Point
*-FUEL-OILW	Utilities Fuel	FuelOilWaterSeparator	Point
*-FUEL-PBSP	Utilities Fuel	FuelPumpBoosterStation	Point
*-FUEL-PIPL	Utilities Fuel	FuelTransPipeline	Line

CADD Layer Name	Category	Feature Class	Geometry
*-FUEL-PIPS	Utilities Fuel	FuelTransPipelineSegmentLine	Line
*-FUEL-PUMP	Utilities Fuel	FuelPump	Point
*-FUEL-RECT	Utilities Fuel	FuelRectifier	Point
*-FUEL-REDC	Utilities Fuel	FuelRegulatorReducer	Point
*-FUEL-REFN	Utilities Fuel	FuelTransRefinery	Point
*-FUEL-SRCE	Utilities Fuel	FuelSource	Point
*-FUEL-TANK	Utilities Fuel	FuelTank	Point
*-FUEL-VLVE	Utilities Fuel	FuelValve	Point
*-NGAS-ANOD	Utilities Gas	GasAnode	Point
*-NGAS-ANOT	Utilities Gas	GasAnodeTestStation	Point
*-NGAS-FILL	Utilities Gas	GasFillPoint	Point
*-NGAS-FTTG	Utilities Gas	GasFitting	Point
*-NGAS-GASL	Utilities Gas	GasLine	Line
*-NGAS-JBOX	Utilities Gas	GasJunction	Point
*-NGAS-LITE	Utilities Gas	GasLight	Point
*-NGAS-MARK	Utilities Gas	GasMarker	Point
*-NGAS-METR	Utilities Gas	GasMeter	Point
*-NGAS-MHOL	Utilities Gas	GasJunction	Point
*-NGAS-PMPS	Utilities Gas	GasPumpStation	Point
*-NGAS-PUMP	Utilities Gas	GasPump	Point
*-NGAS-RECT	Utilities Gas	GasRectifier	Point
*-NGAS-REDC	Utilities Gas	GasReducer	Point
*-NGAS-SITE	Utilities Gas	GasJunction	Point
*-NGAS-SRCE	Utilities Gas	GasSource	Point
*-NGAS-TANK	Utilities Gas	GasTank	Point
*-NGAS-VLVE	Utilities Gas	GasValve	Point
*-HVAC-ANCH	Utilities HCS	HeatCoolAnchorPoint	Point
*-HVAC-ANOD	Utilities HCS	HeatCoolAnode	Point
*-HVAC-ANOT	Utilities HCS	HeatCoolAnodeTestStation	Point
*-HVAC-FTTG	Utilities HCS	HeatCoolFitting	Point
*-HVAC-HCPA	Utilities HCS	HeatCoolPlantArea	Polygon
*-HVAC-JBOX	Utilities HCS	HeatCoolJunction	Point
*-HVAC-LINE	Utilities HCS	HeatCoolLine	Line
*-HVAC-METR	Utilities HCS	HeatCoolMeter	Point
*-HVAC-PUMP	Utilities HCS	HeatCoolPump	Point
*-HVAC-RECT	Utilities HCS	HeatCoolRectifier	Point
*-HVAC-REGL	Utilities HCS	HeatCoolRegulator	Point
*-HVAC-SIGN	Utilities HCS	HeatCoolMarker	Point
*-HVAC-VALT	Utilities HCS	HeatCoolVault	Polygon
*-HVAC-VLVE	Utilities HCS	HeatCoolValve	Point

CADD Layer Name	Category	Feature Class	Geometry
*-INDW-ANOD	Utilities Industrial Waste	IndustrialWasteAnode	Point
*-INDW-ANOT	Utilities Industrial Waste	IndustrialWasteAnodeTestSta	Point
*-INDW-DISC	Utilities Industrial Waste	IndustrialWasteDischargePoint	Point
*-INDW-EJEC	Utilities Industrial Waste	IndustrialWastePumpstnEjector	Point
*-INDW-FTTG	Utilities Industrial Waste	IndustrialWasteFitting	Point
*-INDW-GRIT	Utilities Industrial Waste	IndustrialWasteGritChamber	Point
*-INDW-HWLN	Utilities Industrial Waste	IndustrialWasteHeadwallLine	Line
*-INDW-HWPT	Utilities Industrial Waste	IndustrialWasteHeadwallPoint	Point
*-INDW-INLT	Utilities Industrial Waste	IndustrialWasteInlet	Point
*-INDW-JBOX	Utilities Industrial Waste	IndustrialWasteJunction	Point
*-INDW-LAGN	Utilities Industrial Waste	IndustrialWasteLagoon	Polygon
*-INDW-MAIN	Utilities Industrial Waste	IndustrialWasteLine	Line
*-INDW-METR	Utilities Industrial Waste	IndustrialWasteMeter	Point
*-INDW-NEUT	Utilities Industrial Waste	IndustrialWasteNeutralizer	Point
*-INDW-OILW	Utilities Industrial Waste	IndustrialWasteOilWatSep	Point
*-INDW-PLNT	Utilities Industrial Waste	IndustrialWasteTreatmentPlant	Polygon
*-INDW-PUMP	Utilities Industrial Waste	IndustrialWastePump	Point
*-INDW-RECT	Utilities Industrial Waste	IndustrialWasteRectPoint	Point
*-INDW-SERV	Utilities Industrial Waste	IndustrialWasteLine	Line
*-INDW-SIGN	Utilities Industrial Waste	IndustrialWasteMarker	Point
*-INDW-STOR	Utilities Industrial Waste	IndustrialWasteStorageArea	Polygon
*-INDW-TANK	Utilities Industrial Waste	IndustrialWasteTank	Point
*-INDW-VLVE	Utilities Industrial Waste	IndustrialWasteValve	Point
*-STRM-BASN	Utilities Storm	StormDrainageBasin	Polygon
*-STRM-CPTR	Utilities Storm	StormCeptor	Point
*-STRM-DISC	Utilities Storm	StormDischargePoint	Point
*-STRM-DIVL	Utilities Storm	StormDrainageDivideLine	Line
*-STRM-DWNS	Utilities Storm	StormDownspout	Point
*-STRM-FLCD	Utilities Storm	StormFlowControlDevice	Point
*-STRM-FLTR	Utilities Storm	StormFilter	Point
*-STRM-FTTG	Utilities Storm	StormFitting	Point
*-STRM-GATE	Utilities Storm	StormGate	Point
*-STRM-HDWL	Utilities Storm	StormHeadwallLine	Line
*-STRM-HDWP	Utilities Storm	StormHeadwallPoint	Point
*-STRM-INLT	Utilities Storm	StormInlet	Point
*-STRM-JBOX	Utilities Storm	StormJunction	Point
*-STRM-LINE	Utilities Storm	StormLine	Line
*-STRM-MARK	Utilities Storm	StormMarker	Point
*-STRM-MHOL	Utilities Storm	StormJunction	Point
*-STRM-OILW	Utilities Storm	StormOilWaterSeparator	Point

CADD Layer Name	Category	Feature Class	Geometry
*-STRM-OPEN	Utilities Storm	StormOpenDrainageArea	Polygon
*-STRM-OWDV	Utilities Storm	StormOWSDiversionVault	Polygon
*-STRM-PSTA	Utilities Storm	StormPumpStation	Point
*-STRM-PUMP	Utilities Storm	StormPump	Point
*-STRM-RPNT	Utilities Storm	StormReservoir	Point
*-STRM-STIL	Utilities Storm	StormStillingBasin	Point
*-STRM-TRDL	Utilities Storm	StormTrenchDrainLine	Line
*-STRM-VLVE	Utilities Storm	StormValve	Point
*-SSWR-ANOD	Utilities Wastewater	WastewaterAnode	Point
*-SSWR-ANOT	Utilities Wastewater	WastewaterAnodeTestStation	Point
*-SSWR-DFLD	Utilities Wastewater	WastewaterDrainField	Polygon
*-SSWR-DSCH	Utilities Wastewater	WastewaterDischargePoint	Point
*-SSWR-DWNS	Utilities Wastewater	WastewaterDownspout	Point
*-SSWR-EJEC	Utilities Wastewater	WastewaterPumpEjectorStation	Point
*-SSWR-FLTR	Utilities Wastewater	WastewaterFiltrationBed	Polygon
*-SSWR-FTTG	Utilities Wastewater	WastewaterFitting	Point
*-SSWR-GRIT	Utilities Wastewater	WastewaterGritChamber	Point
*-SSWR-GRSE	Utilities Wastewater	WastewaterGreaseTrap	Point
*-SSWR-INLT	Utilities Wastewater	WastewaterInlet	Point
*-SSWR-JBOX	Utilities Wastewater	WastewaterJunction	Point
*-SSWR-LAGN	Utilities Wastewater	WastewaterLagoon	Polygon
*-SSWR-METR	Utilities Wastewater	WastewaterMeter	Point
*-SSWR-MHOL	Utilities Wastewater	WastewaterJunction	Point
*-SSWR-NEUT	Utilities Wastewater	WastewaterNeutralizer	Point
*-SSWR-OILW	Utilities Wastewater	WastewaterOilWaterSeparator	Point
*-SSWR-PIPE	Utilities Wastewater	WastewaterLine	Line
*-SSWR-PLNT	Utilities Wastewater	WastewaterTreatmentPlant	Polygon
*-SSWR-PUMP	Utilities Wastewater	WastewaterPump	Point
*-SSWR-RECT	Utilities Wastewater	WastewaterRectifier	Point
*-SSWR-SBED	Utilities Wastewater	WastewaterSludgeBed	Polygon
*-SSWR-SERV	Utilities Wastewater	WastewaterLine	Line
*-SSWR-SIGN	Utilities Wastewater	WastewaterMarker	Point
*-SSWR-TANK	Utilities Wastewater	WastewaterDisposalTank	Point
*-SSWR-TRET	Utilities Wastewater	WastewaterTreatmentUnit	Point
*-SSWR-VLVE	Utilities Wastewater	WastewaterValve	Point
*-DOMW-ANOD	Utilities Water	WaterAnode	Point
*-DOMW-ANOT	Utilities Water	WaterAnodeTestStation	Point
*-DOMW-DWSP	Utilities Water	WaterDrinkingWaterSamplePoint	Point
*-DOMW-FCPT	Utilities Water	WaterFireConnectionPoint	Point
*-DOMW-FTTG	Utilities Water	WaterFitting	Point

CADD Layer Name	Category	Feature Class	Geometry
*-DOMW-HYDR	Utilities Water	WaterHydrant	Point
*-DOMW-INTL	Utilities Water	WaterIntakeLine	Line
*-DOMW-INTP	Utilities Water	WaterIntake	Point
*-DOMW-JBOX	Utilities Water	WaterJunction	Point
*-DOMW-MAIN	Utilities Water	WaterLine	Line
*-DOMW-METR	Utilities Water	WaterMeter	Point
*-DOMW-MHOL	Utilities Water	WaterJunction	Point
*-DOMW-PIGP	Utilities Water	WaterPigLaunchPoint	Point
*-DOMW-PLNT	Utilities Water	WaterTreatmentPlant	Polygon
*-DOMW-PSTA	Utilities Water	WaterPumpStation	Polygon
*-DOMW-PUMP	Utilities Water	WaterPump	Point
*-DOMW-RECT	Utilities Water	WaterRectifier	Point
*-DOMW-REDC	Utilities Water	WaterPressureReducingStation	Point
*-DOMW-RSVR	Utilities Water	WaterReservoirArea	Polygon
*-DOMW-SERV	Utilities Water	WaterLine	Line
*-DOMW-SIGN	Utilities Water	WaterMarker	Point
*-DOMW-SRCE	Utilities Water	WaterSourceSite	Point
*-DOMW-TANK	Utilities Water	WaterTank	Point
*-DOMW-TRET	Utilities Water	WaterTreatmentUnit	Polygon
*-DOMW-VENT	Utilities Water	WaterVent	Point
*-DOMW-VLVE	Utilities Water	WaterValve	Point