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of Engineers®**
Engineer Research and
Development Center

*The CAD/BIM Technology Center
for facilities, infrastructure, and environment*

A/E/C CAD Standard

Release 5.0

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The A/E/C CAD Standard is
compliant with Version 5.0 of the
U.S. National CAD Standard®.

The A/E/C CAD Standard contains
supplemental materials and DoD
specific requirements not addressed
in the U.S. National CAD Standard®.

A/E/C CAD Standard

Release 5.0

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Abstract

The A/E/C CAD Standard has been developed by the CAD/BIM Technology Center (Center) for Facilities, Infrastructure, and Environment to eliminate redundant Computer-Aided Design (CAD) standardization efforts within the Department of Defense (DoD) and the Federal Government. The manual is part of an initiative to develop a nonproprietary CAD standard that incorporates existing industry, national, and international standards and to develop data standards that address the entire life cycle of facilities within the DoD.

The CAD drafting standards addressed in the A/E/C CAD standard include presentation graphics, level/layer assignments, electronic file naming, and standard symbology. The Center's primary goal is to develop a CAD standard that is generic enough to operate under various CAD software packages (such as Bentley's MicroStation and Autodesk's AutoCAD) and incorporate existing industry standards when possible.

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Contents

Abstract.....	ii
Figures and Tables.....	v
Preface.....	vii
1 Introduction.....	1
Acronyms	1
Scope	1
Purpose.....	2
Background	2
Target Systems	2
Design Applications and Other Applications.....	3
Coordination with Design Agent	3
Additions/Revisions	3
2 Drawing File Organization	5
Design Area	5
<i>Available drawing area</i>	<i>5</i>
<i>File accuracy (units).....</i>	<i>5</i>
<i>International Feet versus Survey Feet (V8).....</i>	<i>6</i>
<i>Origin (global origin).....</i>	<i>6</i>
Model Files and Sheet Files.....	7
Design Models and Sheet Models	7
Drawing Sheet Assembly - Use of Design Model and Sheet Model (1:1 border sheet).....	8
Electronic Drawing File Naming Conventions	8
<i>Project code.....</i>	<i>9</i>
<i>Model file naming convention</i>	<i>9</i>
<i>Sheet file naming convention.....</i>	<i>22</i>
<i>Adding a drawing sheet</i>	<i>23</i>
Coordination Between Sheet File Name and Sheet Identifier	24
3 Graphic Concepts.....	25
Presentation Graphics	25
<i>Line widths</i>	<i>25</i>
<i>Line types/styles</i>	<i>26</i>
<i>Line color</i>	<i>26</i>
<i>Screening.....</i>	<i>27</i>
<i>Plotting.....</i>	<i>27</i>
Text.....	28
<i>Text styles/fonts.....</i>	<i>28</i>
<i>Text height.....</i>	<i>30</i>

General text placement	30
Abbreviations.....	30
Border Sheets.....	31
Sheet sizes	31
Title block.....	31
Real Estate Border Sheets.....	35
Project map block	35
Index map block	35
Drawing Scales	37
Dimensioning.....	37
Dimensioning in Metric (SI)	37
Millimeters.....	40
Meters.....	41
Large units of measure.....	41
Dual units	43
4 Level/Layer Assignments.....	44
Level/Layer Naming Convention.....	44
Model Files	47
Level/layer assignment tables.....	47
Border sheet model files.....	50
Reference files (XREFs)	50
Sheet Files	50
Level/layer assignment tables.....	51
Development of sheet files.....	53
5 Standard Symbology	54
Introduction	54
Electronic Version of the Symbology/Elements.....	54
Deliverables.....	54
Line styles.....	54
Tabulated Version of the Symbology/Elements.....	55
References.....	56
 Appendix A: Model File Level/Layer Assignment Tables	
 Appendix B: Sheet File Level/Layer Assignment Tables	
 Appendix C: Color Table Comparison	
 Appendix D: A/E/C CAD Standard Symbology	
 Report Documentation Page	

Figures and Tables

Figures

Figure 2-1. Sheet file composition.....	8
Figure 2-2. Sheet file composition using Design Model and Sheet Model.....	9
Figure 2-3. Model file naming convention.	10
Figure 2-4. Sheet file naming convention.	22
Figure 2-5. Supplemental drawing designator.	23
Figure 2-6. Typical border sheet title block with sheet identification block.....	24
Figure 3-1. Vertical title block.....	32
Figure 3-2. Designer identification block.	33
Figure 3-3. Issue block.....	33
Figure 3-4. Management block.....	34
Figure 3-5. Project identification block/sheet title block.....	34
Figure 3-6. Sheet identification block.	35
Figure 3-7. Project map block.....	36
Figure 3-8. Index map block.....	37
Figure 3-9. Filled arrowhead terminator sizes.	41
Figure 3-10. Dimension element settings.....	42
Figure 3-11. Dimension in millimeters. Always shown as a whole number.....	43
Figure 3-12. Dimension in meters. Always shown as a real number (with decimal).	43
Figure 3-13. Proper dimension presentations for metric measurements with four or fewer digits.	43
Figure 3-14. Proper dimension presentations for metric measurements with five or more digits.	43
Figure 4-1. Typical levels/layers contained in a sheet file.....	44
Figure 4-2. Sheet- and model-specific information.....	45
Figure 4-3. Level/layer naming format.....	46
Figure 4-4. Model file level/layer assignment table.....	48
Figure 4-5. Sheet file level/layer assignment table.	51

Tables

Table 2-1. Discipline Designators.	11
Table 2-2. Discipline Designators with Level 2 Designators.	11
Table 2-3. Model File Types.	17
Table 2-4. Sheet Type Designators.	22
Table 3-1. Comparison of Line Widths.	25
Table 3-2. Standard Line Types/Styles.....	26

Table 3-3. Screen Color Comparisons.	27
Table 3-4. Screened Colors.	28
Table 3-5. Comparison of Font Types.	29
Table 3-6. ANSI, Architectural, and ISO Sheet Size Comparison.	31
Table 3-7. Typical Drawing Scales.	38
Table 3-8. Inch-pound Text Sizes and Line Type Scales.....	39
Table 3-9. Metric Text Sizes and Line Type Scales.	40
Table 3-10. Dimension Element Settings.	42
Table 4-1. Status (Phase) Codes.....	49

Preface

Introduction

The A/E/C CAD Standard has been developed by the CAD/BIM Technology Center (Center) for Facilities, Infrastructure, and Environment to eliminate redundant Computer-Aided Design (CAD) standardization efforts within the Department of Defense (DoD) and the Federal Government. The manual is part of an initiative to develop a nonproprietary CAD standard that incorporates existing industry, national, and international standards and to develop data standards that address the entire life cycle of facilities within the DoD. This report supersedes “A/E/C CAD Standard, Release 4.0” (ERDC/ITL TR-9-2).

The Center acknowledges the support of the Corps’ Field Action CAD (FAC) committees, especially Jason Fairchild, Headquarters, U.S. Army Corps of Engineers. Special thanks go to Roger Fujan, U.S. Army Engineer District, Omaha; Ed Mathison, U.S. Army Engineer District, Louisville; and James Sherman, U.S. Army Engineer District, Portland, for agreeing to serve on a committee that assisted in reviewing/evaluating recommended changes to the standard.

The Center is located in the Information Technology Laboratory (ITL), U.S. Army Engineer Research and Development Center (ERDC), Vicksburg, MS. The Director of ITL is Dr. Reed L. Mosher, and the Acting Deputy Director is Dr. Kevin M. Barry. At the time of publication of this report, the Director of ITL was Dr. Reed L. Mosher, the Acting Deputy Director was Dr. Kevin M. Barry, the Chief of Software Engineering and Informatics Division was Ken Pathak, and the Chief of the Tri-Service CAD/BIM Technology Center was Edward L. Huell. The Director of ERDC was Dr. Jeffery P. Holland, and the Commander of ERDC was COL Kevin J. Wilson.

United States National CAD Standard®

In 1995, the combined resources of the Center, the American Institute of Architects (AIA), the Construction Specifications Institute (CSI), the United States Coast Guard, the Sheet Metal and Air Conditioning Contractors National Association (SMACNA), the General Services

Administration (GSA), and the National Institute of Building Sciences' (NIBS) Facility Information Council began an effort to develop a single CAD standard for the United States. Working together, these organizations agreed to develop an integrated set of documents that collectively would represent the United States National CAD Standard (NCS).

A Memorandum of Understanding (MOU) was signed on August 8, 1997. In accordance with that MOU, Release 5.0 of the A/E/C CAD Standard follows, utilizes, or references the work developed by each of the signatories. The two main NCS documents referenced within Release 5.0 of the A/E/C CAD Standard are:

- “Uniform Drawing System”
The Construction Specifications Institute
110 South Union Street, Suite 100
Alexandria, VA 22314-3351
- “AIA CAD Layer Guidelines”
The American Institute of Architects
1735 New York Avenue, NW
Washington, DC 20006-5292

Each of these documents is available as part of the NCS. Additional information on the NCS, as well as how to purchase a copy, can be obtained from

National Institute of Building Sciences
1090 Vermont Avenue NW, Suite 700
Washington, DC 20005-4905

<http://www.buildingsmartalliance.org/ncs/>

1 Introduction

Acronyms

First, a few useful acronyms:

- A-E – Architect-Engineer
- A/E/C – Architecture, Engineering, and Construction
- AIA – American Institute of Architects
- ANSI – American National Standards Institute
- ASTM – American Society for Testing and Materials
- BIM – Building Information Modeling
- CAD – Computer-Aided Design
- CSI – Construction Specifications Institute
- DoD – Department of Defense
- FM – Facility Management
- GIS – Geographic Information System
- IAI – International Alliance for Interoperability
- IFC – Industry Foundation Class
- ISO – International Organization for Standardization
- NCS – United States National CAD Standard
- NIBS – National Institute of Building Sciences
- SI – International System of Units (Le Système International d’Unités)
- UDS – Uniform Drawing System

Scope

This manual provides guidance and procedures for preparing Computer-Aided Design (CAD) products within the Department of Defense (DoD).

Chapters 1-5 of this manual address topics such as presentation graphics, level/layer assignments, electronic file naming, and standard symbology. Appendices A-D contain tables on model and sheet file level/layer names, color comparisons, as well as Architecture, Engineering, and Construction (A/E/C) CAD symbology.

Purpose

The purpose of this manual is to set a basic CAD standard to ensure consistent electronic deliverables (products) within the DoD. These consistent deliverables are part of a comprehensive installation life-cycle management strategy. This manual sets a CAD standard specifically for the A/E/C disciplines of facilities development and civil works projects.

Background

The immediate benefits of CAD standards are many:

- Consistent CAD products for customers.
- Uniform requirements for A-E deliverables.
- Sharing of products and expertise.

Recognizing such potential benefits, each of the DoD agencies independently initiated efforts to establish CAD standards in the late 1980's. In 1989 the Air Force Logistics Command released the "Architectural and Engineering Services for CADD Implementation Within Air Force Logistics Command." Headquarters, U.S. Army Corps of Engineers, in 1990 published Engineer Manual 1110-1-1807, "Standards Manual for U.S. Army Corps of Engineers Computer-Aided Design and Drafting (CADD) Systems." In 1993, the Naval Facilities Engineering Command distributed its "Policy and Procedures for Electronic Deliverables of Facilities Computer-Aided Design and Drafting (CADD) Systems."

To consolidate these efforts into a single standard, the Center was tasked to develop standards for the A/E/C disciplines. This manual presents the Center's effort at standardizing CAD requirements for A/E/C design and construction documents.

Target Systems

This standard does not target any specific CAD system or software. However, to ensure successful translations among CAD applications, certain system-specific characteristics were considered and the standard adjusted accordingly. During the preparation of the standard, several baseline decisions were made:

- The standard must be applicable to the latest release of commercially available CAD packages. AutoCAD and MicroStation were chosen based on their prevalence in the DoD.
- The standard is based on CAD applications that utilize layer/level names and reference files.
- The standard requires every final plotted drawing sheet to have its own separate electronic drawing file.

Design Applications and Other Applications

Numerous design applications have been developed to run on top of basic CAD engines. These applications can be used by designers to generate graphics inside CAD files. Most notable are design software packages for civil/site and BIM.

Document management systems that contain attributes or metadata for individual files and have such features as title block integration are becoming standard tools for management of electronic files. Use of these systems to store searchable metadata for files is encouraged.

Coordination with Design Agent

With all the complexity and options currently available in the world of CAD, it becomes important to coordinate fundamental aspects of design work. The previously mentioned issues of basic platform, design applications, and document management are only three of the issues that can affect the success of a project and the future usefulness of the final documents. As such, each project should have at its initiation discussions and agreements on such issues as these. Each software package being used should be approved and a determination made on how many of the supporting electronic files should be provided to the customer as a part of the end product.

Additions/Revisions

This standard is intended to be neither static nor all-inclusive and thus will be updated and enhanced as appropriate. Suggestions for improvements are strongly encouraged so that subsequent updates will reflect the input and needs of CAD users.

Recommendations or suggested additions should be sent to:

The CAD/BIM Technology Center
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Vicksburg, MS 39180-6199
or by e-mail at: Steve.C.Spangler@usace.army.mil

2 Drawing File Organization

Design Area

Available drawing area

The two most extensively used CAD applications within the DoD, AutoCAD and MicroStation, both provide for a drawing area with nearly infinite range in each positive and negative axis (x,y,z).

File accuracy (units)

CAD systems allow the designer to work in “real-world” units. The most common units are feet:inches, feet:thousandths of feet, and meters:millimeters.

MicroStation’s approach to file accuracy allows the user to set the working units (i.e., real-world units) as the following:

- Master Units = The largest unit that may be referred to when working in the design file (e.g., feet, meters)
- Sub Units = Subdivisions of Master Units (e.g., inches, millimeters)

Note: *Starting with MicroStation V8, changing the Master Units in a drawing no longer changes the size of design file elements. For instance, if a design file was created in feet and a 1 ft line is drawn, changing the Master Units to inches results in the line measuring 12 in.*

In AutoCAD, the basic drawing unit for any file is the distance between two fixed Cartesian coordinates. For example, the distance between coordinates (1,1,1) and (1,1,2) is one drawing unit. A drawing unit can correspond to any measurement (e.g., foot, inch, meter, mile, fathom). AutoCAD users may enter the **Units** display option to set the desired drawing units.

The **Units** command of AutoCAD does not have a direct metric system setup. For metric designs, the recommended procedure is to choose the **Decimal** option in the **Drawing Units** dialog box. This will allow each

drawing unit to represent decimal meters, millimeters, and so forth, at the discretion of the user.

International Feet versus Survey Feet (V8)

Many sites have to deal with the initial question as to whether a particular project is designed using International Feet or Survey Feet. In some states, it is specified by statute that units of measure for grid coordinates have to be either International Feet or Survey Feet. The two units are defined as follows:

- International Feet: 1 foot = 0.3048000 m
- U.S. Survey Feet: 1 foot = 0.3048006 m

Looking at this comparison, the difference between the two (0.0000006 m) may seem insignificant; however, ultimately this difference may cause coordinate values to be off by several feet, resulting in inaccurate design files. In MicroStation, the **units.def** file does contain a definition for Survey Feet (usually stored in **c:\Program Files\Bentley\Workspace\System\data**), but it is disabled by default. To enable, scroll down the **units.def** file to the section **English units (based on U.S. Survey Foot)** and delete the # in front of **#sf,ft**, which will allow for the selection of Survey Feet from the Working Units box the next time MicroStation is started.

Note: *If a drawing has already been created using International Feet, changing the Master Units to Survey Feet will not automatically scale all elements in the drawing to Survey Feet.*

Origin (global origin)

Positioned within every electronic drawing file is an origin (“global origin” in MicroStation and “origin” in AutoCAD). The origin of a drawing file is important because it serves as the point of reference from which all other elements are located. Origins are typically defined in a drawing file by the Cartesian coordinate system of x, y, and z.

The benefit of standardizing the location of the origin of a drawing is most notable in the use of reference files (see section “Reference Files (XREFs)” in Chapter 4). A standardized origin is also helpful when translating files between CAD applications. The recommended global origin for 2D files in

both AutoCAD and MicroStation drawings is $x = 0$ and $y = 0$. When 3D files are used, the z -origin should be set to allow for elevations below 0.

Model Files and Sheet Files

Two distinct types of CAD files are addressed in this standard: model files and sheet files.

A model file contains the physical components of a building (e.g., columns, walls, windows, ductwork, piping, etc.). Model files are drawn at full scale and typically represent plans, elevations, sections, etc. Model files can be generated either by placing graphics or from BIM model extractions/views.

A sheet file is synonymous with a plotted CAD drawing file. A sheet file is a selected view or portion of referenced model file(s) within a border sheet. The addition of sheet-specific information (e.g., text, dimensions, and symbols) completes the construction of the document. In other words, a sheet file is a “ready-to-plot” CAD file.

Figure 2-1 illustrates how different model files are referenced to a sheet file (notice that even the border sheet is a referenced model file). Again, a sheet file is the combination of referenced model files with sheet-specific text/symbols to create a final ready-to-plot CAD file. A useful rule of thumb was stated in the 2nd edition of the American Institute of Architects’ (AIA) *CAD Layer Guidelines* (AIA 2005): “Model files are always referenced by other files, while sheet files are never referenced by other files.”

Design Models and Sheet Models

Inside each CAD file can exist Design Models (or Model Space for AutoCAD users) and Sheet Models (or Paper Space for AutoCAD users). Design Models are where model files are developed or possibly where model files are assembled prior to creation of the Sheet Model (see the following section “Drawing Sheet Assembly”). Design Models contain graphic information in a model file format. For example, it may contain the entire Architectural Floor Plan model file for a building. It is this model file that is used as a reference for creating individual sheet files.

By contrast, a Sheet Model shows the presentation of model file graphics as they would appear on an individual drawing sheet. This assembly area would contain referenced individual model files, one of which would be a border sheet.

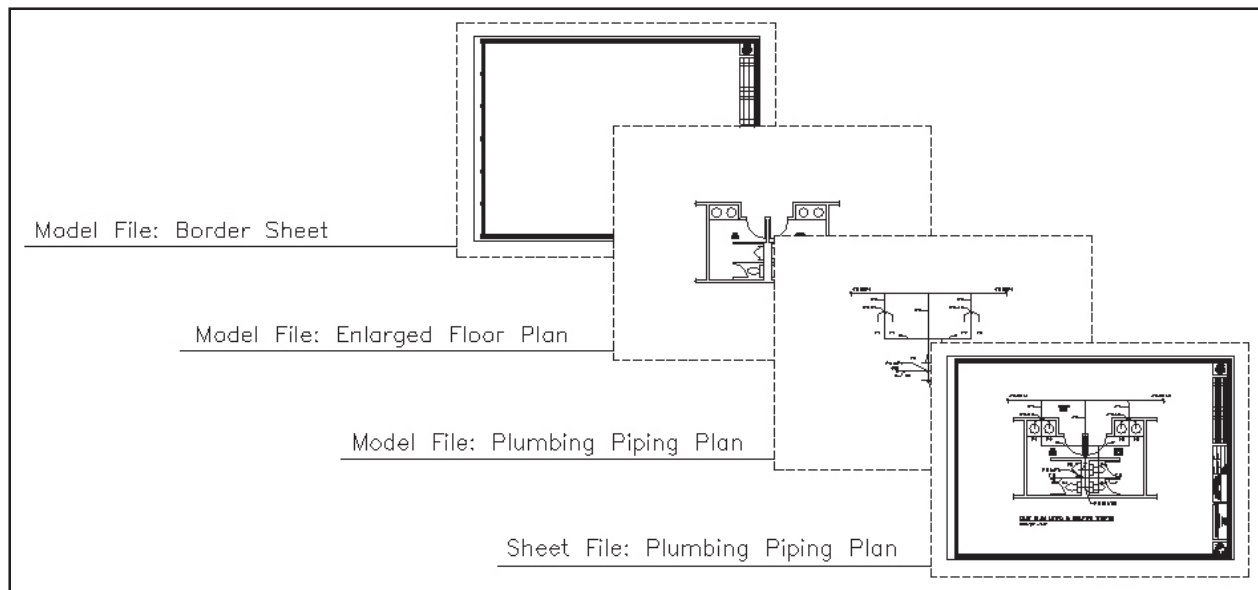


Figure 2-1. Sheet file composition.

Drawing Sheet Assembly - Use of Design Model and Sheet Model (1:1 border sheet)

The following method for drawing sheet assembly should be used. It involves assembling individual model files and a border sheet model file to create final plotted sheets.

Note: *Nested referenced border sheet model files are not allowed.*

This method consists of using a sheet file that contains a Design Model and a Sheet Model. The Design Model is used to assemble all the individual reference files necessary to display the graphics. This may include references to individual views of Design Models in other files, or even coincident references. The Design Model should also contain real-world graphics such as northing and easting coordinate values of points. The Sheet Model contains a reference to the project border sheet model file (at 1:1), plus a reference to the Design Model in the active sheet file, scaled to fit into the Sheet Model (Figure 2-2).

Electronic Drawing File Naming Conventions

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

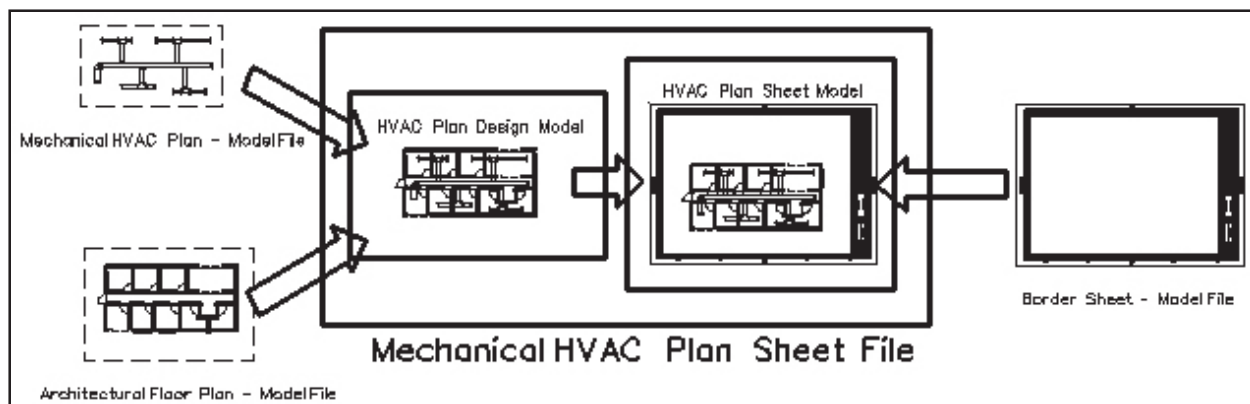


Figure 2-2. Sheet file composition using Design Model and Sheet Model.

Project code

The Model File naming convention and the Sheet File naming convention both allow for a Project Code (1- to 20-characters) at the beginning of the file name. The Project Code should be identified at the start of each project to ensure consistent file names within that project. Some examples of Project Codes are:

- The official agency project number
- The project number defined by the agency system manager for their record system

The use of Project Codes in file names prevents the same file name from existing in different directories. When this field is used, standard naming should consider use of a special character such as an underscore “_” for all model files so that folder sorting routines group like files together.

When a project includes multiple sites or buildings, it is important to identify each file with the appropriate feature. This should be done as a part of the Project Code. For example, a model file for project P123, building 2, could possibly use a Project Code of “_P123-Bldg2”.

Model file naming convention

The model file naming convention (Figure 2-3) has four mandatory fields. All fields must be used and in the correct sequence.

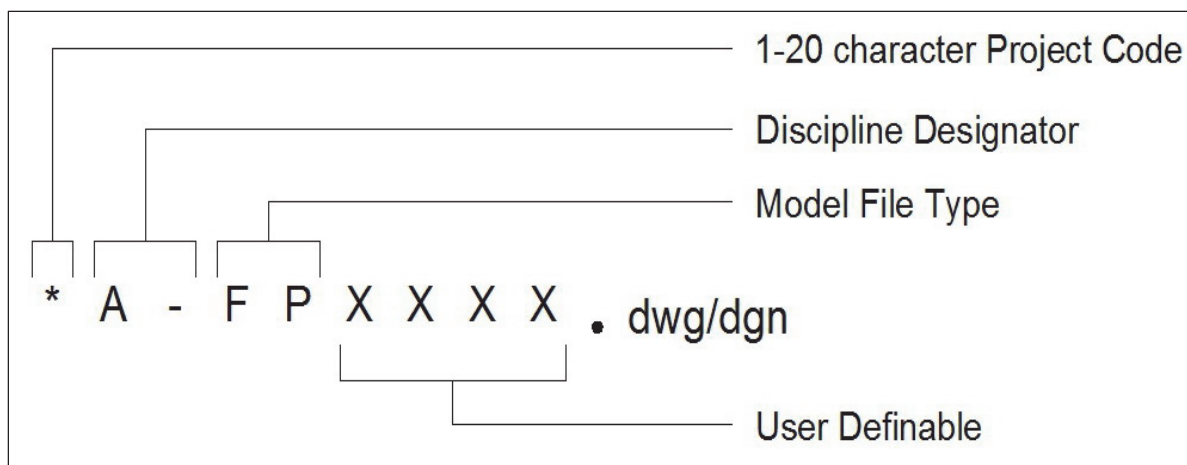


Figure 2-3. Model file naming convention.

Following the Project Code field, the first two-character field represents the Discipline Designator. The allowable characters for the first character in the Discipline Designator are listed in Table 2-1. The second character of the Discipline Designator field is either a hyphen “-” (the use of which results in this being referred to as a Level 1 Discipline Designator) or an alphabetical Level 2 Designator (Table 2-2). The next two-character field represents the Model File Type (Table 2-3). The final four-character field is User Definable.

Note: *In NCS V 5.0, user-defined Level 2 Designators are allowed “to differentiate among multiple buildings on a ‘campus’ or among multiple features on a large civil works project.” Should this option be chosen, Table 2-2 Level 2 Designators should not be used, in order to avoid confusion.*

Example. The model file name for a project at the U.S. Army Engineer Research and Development Center (ERDC), Building 8000, 1st floor, Architectural Floor Plan could be:

ERDC8000A-FPF1XX.dgn/dwg

where ERDC8000 is the Project Code, A- is the Discipline Designator, FP is the Model File Type (Floor Plan), and F1 is a user-definable set of characters for Floor 1. Since not all of the user-definable characters were used, the characters XX were used as placeholders.

Table 2-1. Discipline Designators.

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

Table 2-2. Discipline Designators with Level 2 Designators.

Discipline	Designator	Description	Content
General	G-	All General	All or any portion of subjects in the following Level 2 Designators
	GC	General Contract	Phasing, schedules, contractor staging areas, fencing, haul routes, erosion control, temporary and special requirements
	GI	General Information	Drawing index, code summary, symbol legend, orientation maps
	GR	General Resource	Photographs, soil borings
Hazardous Materials	H-	All Hazardous Materials	All or any portion of subjects in the following Level 2 Designators
	HA	Asbestos	Asbestos abatement, identification, or containment

Discipline	Designator	Description	Content
	HC	Chemicals	Toxic chemicals handling, removal, or storage
	HL	Lead	Lead piping or paint removal
	HP	PCB	PCB containment and removal
	HR	Refrigerants	Ozone depleting refrigerants
Survey/Mapping	V-	All Survey/Mapping	All or any portion of subjects in the following Level 2 Designators
	VA	Aerial Survey	Aerial surveyed points and features
	VC	Computed Points	Computed points and features
	VF	Field Survey	Field surveyed points and features
	VH*	Hydrographic Survey	
	VI	Digital Survey	Digitized points and features
	VN	Node Points	Node points and features
	VS	Staked Points	Staked points and features
	VU	Combined Utilities	
Geotechnical	B-	All Geotechnical	All or any portion of subjects in the following Level 2 Designators
	BB*	Boring Logs	Boring logs
	BS*	Stratigraphy	Stratigraphy profiles
Civil	C-	All Civil	All or any portion of subjects in the following Level 2 Designators
	CB*	Civil Beach Renourishment	Beach disposal and renourishment
	CD	Civil Demolition	Structure removal and site clearing
	CE*	Civil Ecosystem Restoration	Environmental restoration
	CF*	Civil Flood Control	Levees, spillways, pump stations
	CG	Civil Grading	Excavation, grading, drainage, erosion control, retention ponds
	CH*	Civil Shore Protection	Erosion protection structures on shoreline
	CI	Civil Improvements	Pavers, flagstone, exterior tile, furnishings, retaining walls, and water features
	CN	Civil Nodes	
	CN*	Civil Navigation	Navigation, harbors, dredging
	CO*	Civil Operation and Maintenance	Repair and upgrade to O&M structures
	CP	Civil Paving	Roads, driveways, parking lots
	CR*	Civil Recreation	Recreation facilities
	CS	Civil Site	Plats, topographic, dimension control

Discipline	Designator	Description	Content
	CT	Civil Transportation	Waterways, wharves, docks, trams, railways, airfields, and people movers
	CU	Civil Utilities	Water, sanitary sewer, storm sewer, power, communications, natural gas, and steam systems
	CX*	Civil Security	Security-related work
Landscape	L-	All Landscape	All or any portion of subjects in the following Level 2 Designators
	LD	Landscape Demolition	Protection and removal of existing landscape
	LG	Landscape Grading	Proposed contours and spot grades
	LI	Landscape Irrigation	Mainlines, valves, controllers, pumps, etc.
	LL	Landscape Lighting	
	LP	Landscape Planting	Landscape planting
	LR	Landscape Relocation	Vegetation relocation information
	LS	Landscape Site	All site hardscape and callouts
Structural	S-	All Structural	All or any portion of subjects in the following Level 2 Designators
	SB	Structural Substructure	Foundations, piers, slabs, and retaining walls
	SC*	Structural Components	Gates, armor, bulkheads, and railings
	SD	Structural Demolition	Protection and removal
	SF	Structural Framing	Floors and roofs
	SR*	Structural Reinforcement	Concrete reinforcement and anchors
	SS	Structural Site	
	ST*	Structural Superstructure	Walls, decks, abutments, gates, and weirs
Architectural	A-	All Architectural	All or any portion of subjects in the following Level 2 Designators
	AD	Architectural Demolition	Protection and removal
	AE	Architectural Elements	General architectural
	AF	Architectural Finishes	
	AG	Architectural Graphics	
	AI	Architectural Interiors	
	AS	Architectural Site	

Discipline	Designator	Description	Content
Interiors	I-	All Interiors	All or any portion of subjects in the following Level 2 Designators
	ID	Interior Demolition	
	IF	Interior Furnishings	
	IG	Interior Graphics	Murals and visuals
	IN	Interior Design	
Equipment	Q-	All Equipment	All or any portion of subjects in the following Level 2 Designators
	QA	Athletic Equipment	Gymnasium, exercise, aquatic, and recreational
	QB	Bank Equipment	Vaults, teller units, ATMs, drive-through
	QC	Dry Cleaning Equipment	Washers, dryers, ironing, and dry cleaning
	QD	Detention Equipment	Prisons and jails
	QE	Educational Equipment	Chalkboards, library
	QF	Food Service Equipment	Kitchen, bar, service, storage, and processing
	QH	Hospital Equipment	Medical, exam, and treatment
	QL	Laboratory Equipment	Science labs, planetariums, observatories
	QM	Maintenance Equipment	Housekeeping, window washing, and vehicle servicing
	QP	Parking Lot Equipment	Gates, ticket, and card access
	QR	Retail Equipment	Display, vending, and cash register
	QS	Site Equipment	Bicycle racks, benches, playgrounds
	QT	Theatrical Equipment	Stage, movie, rigging systems
	QV	Video/Photographic Equipment	Television, darkroom, and studio
	QY	Security Equipment	Access control and monitoring, surveillance
Fire Protection	F-	All Fire Protection	All or any portion of subjects in the following Level 2 Designators
	FA	Fire Detection and Alarm	
	FX	Fire Suppression	Fire extinguishing systems and equipment
Plumbing	P-	All Plumbing	All or any portion of subjects in the following Level 2 Designators
	PD	Plumbing Demolition	Protection, termination, and removal
	PL	Plumbing	Domestic water, sanitary and storm drainage, fixtures

Discipline	Designator	Description	Content
	PP	Plumbing Piping	Piping, valves, and insulation
	PQ	Plumbing Equipment	Pumps and tanks
	PS	Plumbing Site	Extensions and connections to Civil Utilities
Process	D-	All Process	All or any portion of subjects in the following Level 2 Designators
	DD	Process Demolition	Protection, termination, and removal
	DE	Process Electrical	Electrical exclusively associated with a process and not the facility
	DG	Process Gases	Gaseous process systems
	DI	Process Instrumentation	Instrumentation, measurement, recorders, devices, and controllers (electrical and mechanical)
	DL	Process Liquids	Liquid process systems
	DP	Process Piping	Piping, valves, insulation, tanks, pumps, etc.
	DQ	Process Equipment	Systems and equipment for thermal, electrical, materials handling, assembly and manufacturing, nuclear, power generation, chemical, refrigeration, and industrial processes
	DS	Process Site	Extension and connection to Civil Utilities
Mechanical	M-	All Mechanical	All or any portion of subjects in the following Level 2 Designators
	MD	Mechanical Demolition	Protection, termination, and removal
	MH	Mechanical HVAC	Ductwork, air devices, and equipment
	MI	Mechanical Instrumentation	Instrumentation and controls
	MP	Mechanical Piping	Chilled and heating water, steam
	MS	Mechanical Site	Utility tunnels and piping between facilities
	MY*	Mechanical Hydraulic Systems	Pump stations, spillways, slide gates
Electrical	E-	All Electrical	All or any portion of subjects in the following Level 2 Designators
	EA*	Electrical Airfield Lighting and Nav aids	Visual air navigation systems
	EC*	Electrical Cathodic Protection	Cathodic protection systems
	ED	Electrical Demolition	Protection, termination, and removal
	EG*	Electrical Grounding	Grounding, lightning protection devices
	EI	Electrical Instrumentation	Controls, relays, instrumentation, and measurement devices

Discipline	Designator	Description	Content
	EL	Electrical Interior Lighting	Interior lighting
	EP	Electrical Interior Power	Interior power
	ES	Electrical Site	Exterior electrical systems (power, lighting, auxiliary)
	ET	Electrical Telecommunications	Telephone, network, voice, and data cables
	EY	Electrical Interior Auxiliary Systems	Alarms, nurse call, security, CCTV, PA, music, clock, and program
Telecommunications	T-	All Telecommunications	All or any portion of subjects in the following Level 2 Designators
	TA	Audio Visual	Cable, music, and CCTV systems
	TC	Clock and Program	Time generators and bell program systems
	TD*	Telecommunications Demolition	Protection, termination, and removal
	TI	Intercom	Intercom and public address systems
	TM	Monitoring	Monitoring and alarm systems
	TN	Data Networks	Network cabling and equipment
	TS*	SCADA	Supervisory Control and Data Acquisition (SCADA) systems and equipment
	TT	Telephone	Telephone systems, wiring, and equipment
	TY	Security	Access control and alarm systems
Resource	R-	All Resource	All or any portion of subjects in the following Level 2 Designators
	RA	Resource Architectural	Existing facility architectural drawings
	RC	Resource Civil	Surveyor's information and existing civil drawings
	RE	Resource Electrical	Existing facility electrical drawings
	RM	Resource Mechanical	Existing facility mechanical drawings
	RR	Resource Real Estate	Real estate drawings
	RS	Resource Structural	Existing facility structural drawings
Other Disciplines	X		
Contractor/Shop Drawings	Z		
Operations	O		

* = Not in NCS 5.0

Table 2-3. Model File Types.

Discipline	Code	Definition
<i>General</i>	BS	Border Sheet
	CS	Cover Sheet
	KP	Key Plan
<i>Hazardous Materials</i>	DT	Detail
	EL*	Elevation
	LG	Legend
	PP	Pollution Prevention Plan
	QP*	Equipment Plan
	SC	Section
	XD*	Existing/Demolition Plan
<i>Survey/Mapping</i>	AL	Existing Airfield Lighting Plan
	CP	Existing Communication System Plan
	EU	Existing Electrical Utilities Plan
	HP	Existing Hydrographic Survey and Mapping Plan
	HT	Existing HTCW Utilities Plan
	LG	Legend
	PB	Property Boundary
	PR	Existing Profile
	SC	Existing Section
	SP	Survey and Mapping Plan
	UP	Existing Utilities Plan
<i>Geotechnical</i>	DT	Detail
	JP	Joint Layout Plan
	LB	Boring Log
	LG	Legend
	PV	Pavement Site Plan
	SC	Section
	SH*	Schedule
	SI	Subsurface Investigation Plan
<i>Civil</i>	AF	Airfield Plan
	BR	Beach Renourishment Plan
	DT	Detail
	EL	Elevation
	ER	Eco-Restoration Plan
	FC	Flood Control Plan

Discipline	Code	Definition
	GP	Grading Plan
	IP*	Installation Plan/Base Map
	JP	Joint Layout Plan
	KP*	Staking Plan
	LG	Legend
	NG	Navigation/Dredging Plan
	PL*	Project Location Map
	PR	Profile
	SC	Section
	SH*	Schedule
	SP	Site Plan
	TS	Transportation Site Plan
	UP	Utilities Plan
	XD*	Existing/Demolition Plan
<i>Landscape</i>	DT	Detail
	EL*	Elevation
	IP	Irrigation Plan
	LG	Legend
	LP	Landscape Plan
	SC*	Section
	SH*	Schedule
	XD*	Existing/Demolition Plan
<i>Structural</i>	3D	Isometric/3D
	BP	Bridge Plan
	CP*	Column Plan
	CW	Misc. Small Civil Works Structures
	DT	Detail
	EL	Elevation
	EP	Enlarged Plan
	FC	Flood Control Structures
	FP	Framing Plan
	LD	Locks and Dams Plan
	LG	Legend
	NP	Foundation Plan
	SC	Section
	SH	Schedule

Discipline	Code	Definition
	XD*	Existing/Demolition Plan
<i>Architectural</i>	3D*	Isometric/3D
	AC	Area Calculations/Occupancy Plan
	CP	Reflected Ceiling Plan
	DT	Detail
	EL	Elevation
	EP*	Enlarged Plan
	FP	Floor Plan
	LG	Legend
	QP	Equipment Plan
	RP	Roof Plan
	SC	Section
	SH*	Schedule
	XD*	Existing/Demolition Plan
<i>Interiors</i>	3D*	Isometric/3D
	DT	Detail
	EL	Elevation
	EP*	Enlarged Plan
	FL	Floor Patterns
	LG	Legend
	QP*	Equipment Plan
	RP	Furniture Plan
	SC*	Section
	SH*	Schedule
	SP	Signage Placement Plan
	WP	System Furniture Plan
	XD*	Existing/Demolition Plan
<i>Fire Protection</i>	3D*	Isometric/3D
	DG*	Diagram
	DT	Detail
	FA	Fire Alarm/Detection Plan
	FP	Fire Suppression Plan
	LG	Legend
	LP	Life Safety Plan
	SH*	Schedule
	XD*	Existing/Demolition Plan

Discipline	Code	Definition
<i>Plumbing</i>	3D*	Isometric/3D
	DG	Diagram
	DT	Detail
	EL*	Elevation
	EP*	Enlarged Plan
	LG	Legend
	PP	Piping Plan
	SH*	Schedule
	XD*	Existing/Demolition Plan
<i>Mechanical</i>	3D*	Isometric/3D
	DG	Diagram
	DT	Detail
	EL	Elevation
	EP*	Enlarged Plan
	HP	HVAC Plan
	HS	Hydraulic Systems
	HT	HTCW Utilities Plan
	LG	Legend
	MD	Machine Design Plan
	MH	Material Handling Plan
	QP*	Equipment Plan
	SC	Section
	SH*	Schedule
	SP	Specialty Piping Plan
	XD*	Existing/Demolition Plan
<i>Electrical</i>	AL	Airfield Lighting Plan
	AP*	Auxiliary Power Plan
	CP	Exterior Communication Systems Plan
	DG	Diagram
	DT	Detail
	EU	Electrical Utilities Plan
	GP	Grounding System Plan
	LG	Legend
	LP	Lighting Plan
	PP	Power Plan
	PS*	Panel Schedule

Discipline	Code	Definition
	SH*	Schedule
	SS	Special Systems Plan
	XD*	Existing/Demolition Plan
<i>Telecommunications</i>	DG	Diagram
	DT	Detail
	LG	Legend
	SH*	Schedule
	TP	Telephone/Data Plan
	XD*	Existing/Demolition Plan

* = No Model File Table available in Appendix A

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

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

Example. An architect has an existing as-built floor plan model file for Building 1000, 2nd floor. For the current project, walls will be demolished and new walls constructed on the 2nd floor. First, a copy would be made of the original as-built file (B1000A-FPF2XX.dgn/dwg), and the copy would be named B1000RENA-XDF2XX.dgn/dwg (B1000REN is the Project Code, A- is the Discipline Designator, XD is the Model File Type (Existing/Demolition Plan), and F2XX are user-definable characters (F2=Floor 2)). The architect would open this file and move all demolition items to demolition levels/layers (see Chapter 4, “Status (phase) levels/layers”). When the new items in the Floor Plan are drawn, the architect would open a new model file called something like B1000RENA-FPF2XX.dgn/dwg (B1000REN is the Project Code, A- is the Discipline Designator, FP is the Model File Type (Floor Plan), and F2XX are user-definable characters (F2=Floor 2)). The file

B1000RENA-XDF2XX.dgn/dwg

would be referenced in with the demolition levels/layers turned off. The architect would then use the Floor Plan active levels/layers to construct the new items for that project.

Sheet file naming convention

The sheet file naming convention (Figure 2-4) also has four mandatory fields. Similar to the format for model file naming, all fields must be used and in the correct sequence.

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

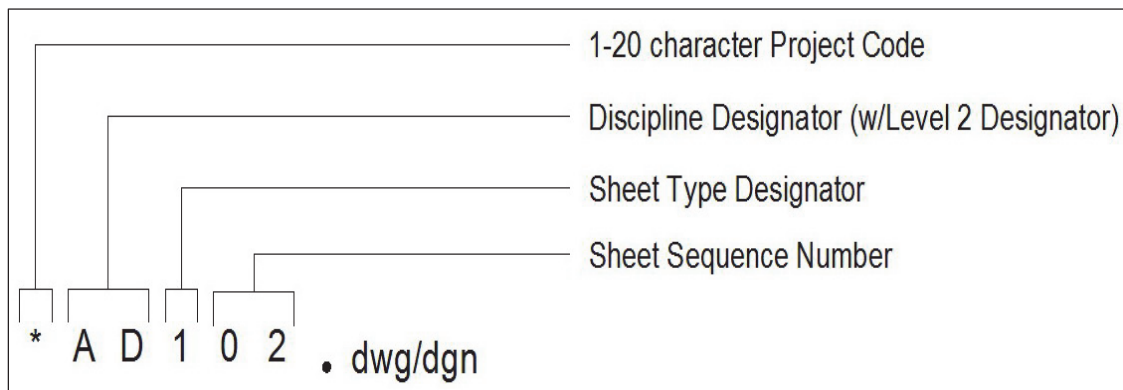


Figure 2-4. Sheet file naming convention.

Table 2-4. Sheet Type Designators.

Sheet Type	Designator
General (symbols legend, notes, etc.)	0
Plans (horizontal views)	1
Elevations (e.g., vertical views, profiles, etc.)	2
Sections (e.g., sectional views, cross sections, etc.)	3
Large Scale Views (plans, elevations, or sections that are not details)	4
Details	5
Schedules and Diagrams	6
User Defined	7
User Defined	8
3D Representations (isometrics, perspectives, photographs)	9

Note: If the sheet sequence number goes above 99 sheets for a particular discipline, the user might want to consider using the Level 2 Designator in the Discipline Designator to further subdivide the discipline (Table 2-2).

Note: According to the NCS: “Sheet Sequence Numbers need not be sequential, to permit future insertion of sheets during design.”

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

For example, the sheet file name for a project at ERDC, Building 8000, Architectural Floor Plan, sheet sequence 02 could be:

ERDC8000A-102.dgn/dwg

where ERDC8000 is the Project Code, A- is the Discipline Designator, 1 is the Sheet Type Designator (Plan), and 02 is the Sheet Sequence Number.

Adding a drawing sheet

If a sheet needs to be added between two sequential sheets, a Supplemental Drawing Designator may be appended to the end of a sheet file name (Figure 2-5). For example, if two sheets need to be added between sheets ERDC8000A-104 and ERDC8000A-105, then the sheet file names for the inserted sheets would be ERDC8000A104-A and ERDC8000A104-B. For more information on adding additional sheets, see “Adding or deleting drawing sheets and index sheet procedures” from Chapter 11 Drawing Revisions in ERDC/ITL TR-12-1 CAD Drafting Standard.

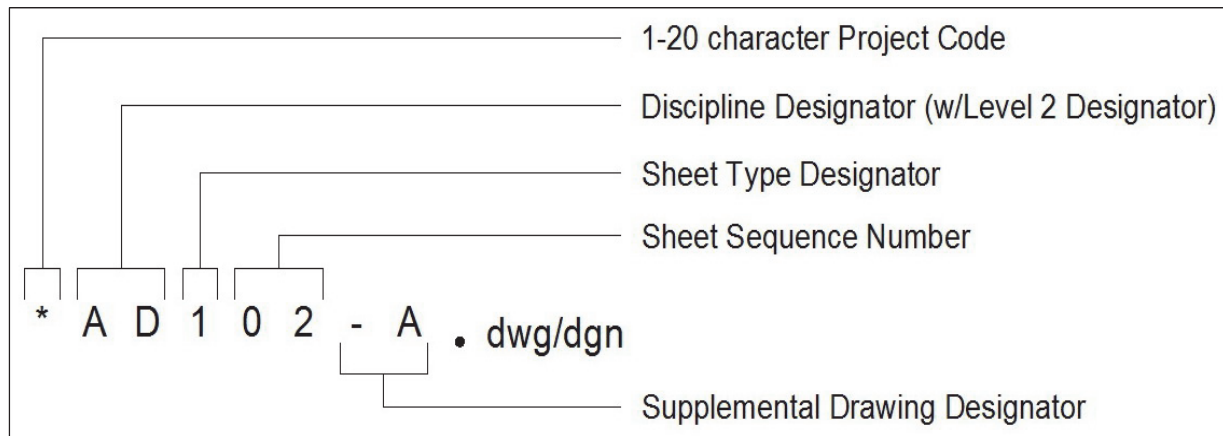


Figure 2-5. Supplemental drawing designator.

Coordination Between Sheet File Name and Sheet Identifier

In assigning a sheet identifier (for use in the sheet identification block, reference bubbles, etc.), the user should coordinate with the name assigned to the electronic sheet file. The sheet identifier should consist of the discipline designator, sheet type designator, and the sheet sequence number (Figure 2-6).

As far as the sequence of the discipline designators in a drawing set, the NCS mandates that the disciplines follow the order as shown in Table 2-1.

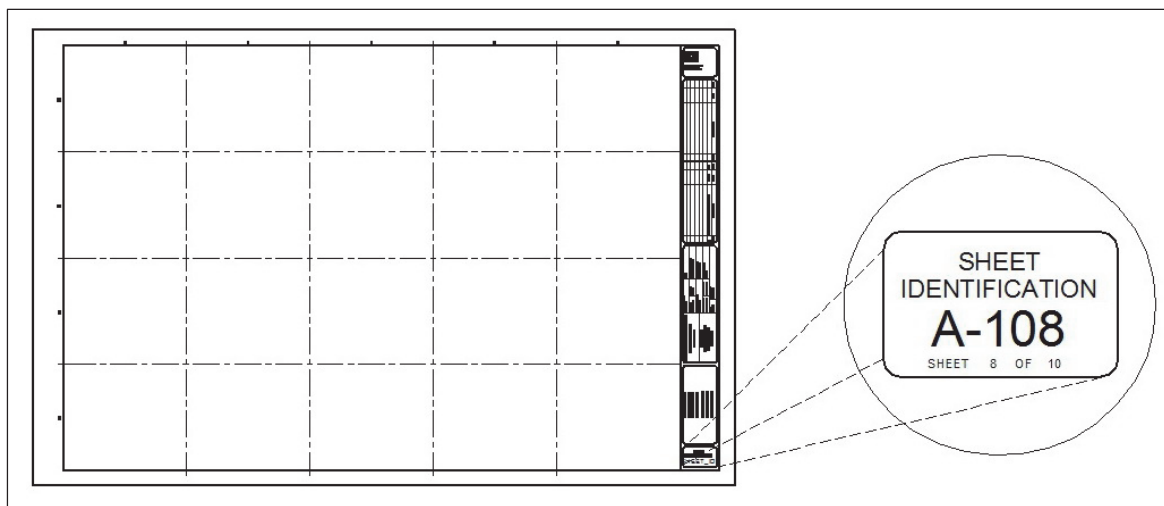


Figure 2-6. Typical border sheet title block with sheet identification block

3 Graphic Concepts

Presentation Graphics

The first step in establishing an effective CAD standard is the development of a uniform approach to presentation graphics. Presentation graphics typically consist of drawing elements such as lines, arcs, shapes, text, and their attributes (line color, line width, and line style). This chapter presents brief overviews of the characteristics of presentation graphics and the philosophy used to standardize them.

Line widths

Although “monowidth” line work is not contractually improper, varied line widths substantially improve readability. Most commercial CAD systems provide an extensive variety of line widths. However, for the majority of A/E/C drawings, the eight line widths defined in Table 3-1 are considered sufficient and should not be expanded unless an appreciable improvement in drawing clarity or contrast can be realized. Table 3-1 shows information about the various allowed line widths.

Table 3-1. Comparison of Line Widths.

Line Thickness	mm	in.	MicroStation Line Weight	Typical Use
Fine	0.18	0.007	wt = 0	Patterning and material indications
Thin	0.25	0.010	wt = 1	Dimension lines, leaders, extension lines, break lines, grid lines, schedule grid lines, hidden objects, center lines, and setback lines
Medium	0.35	0.014	wt = 2	Object lines, text, property lines, terminator marks, schedule grid accent lines
Wide	0.50	0.020	wt = 3	Major object lines, cut lines, section cutting plane lines, property lines, drawing block borders, and titles
Extra Wide	0.70	0.028	wt = 5	Minor title underlining, footprints, match lines, schedule outlines, sheet borders, large titles, and object lines requiring special emphasis
XX Wide	1.00	0.040	wt = 7	Major title underlining and separating portions of drawings
XXX Wide	1.40	0.055	wt = 10	Border sheet outlines and cover sheet line work
XXXX Wide	2.00	0.079	wt = 15	Border sheet outlines and cover sheet line work

Note: *The NCS does offer an Extra Fine (0.13 mm) line width. However, the legibility on printouts becomes more difficult when the line width goes below the Fine (0.18 mm) line width. The NCS even states “Use of Extra Fine line widths should be avoided if the drawing will be plotted half-size.”*

Line types/styles

The predominant line types/styles used in this standard are listed in Table 3-2 and are available as installed line types/styles in AutoCAD and MicroStation. The Center has also created custom line style files for MicroStation and AutoCAD, which include additional discipline line styles (see Appendix D). These files are available on the Center’s web site at <https://cadbim.usace.army.mil/cad>.

Table 3-2. Standard Line Types/Styles.

ID	Description	MicroStation Designator	AutoCAD Designator	Example
0	Continuous	0	Continuous	
1	Dotted	1	Dot	
2	Dashed	2	Hidden	
3	Dashed spaced	3	Dashed	
4	Dashed dotted	4	Dashdot	
6	Dashed double-dotted	6	Divide2	
7	Chain	7	Center	

Line color

The primary reason to use color in CAD drawings is to improve the clarity of the drawing on a computer monitor. The variety of colors available in a CAD application depends on the capabilities of the computer monitor and its video card. Today, most systems are capable of displaying up to 16.8 million colors. For consistency, this manual recommends that all A/E/C drawings be created using the basic colors presented in Table 3-3 whenever possible.

Note: *The recommended colors are best viewed on a monitor with a black background.*

Appendix C contains a 256-color map for the AutoCAD and MicroStation color palettes. The table maps AutoCAD's default color palette to MicroStation's default color palette. The color table is provided for those users who require more colors than the eight shown in Table 3-3.

Table 3-3. Screen Color Comparisons.

Color	Color Number		Ratios of RGB		
	AutoCAD	MicroStation	Red	Green	Blue
Blue	5	1	0	0	255
Gray	8	9	128	128	128
Green	3	2	0	255	0
Red	1	3	255	0	0
Yellow	2	4	255	255	0
Magenta	6	5	255	0	255
Cyan	4	7	0	255	255
White	7	0	255	255	255

Note: Color numbers for AutoCAD and MicroStation were taken from default color tables.

Screening

Screened images are created through a process in which the density and pattern of black and white dots are varied to simulate different shades of gray. Varying the intensity of gray scales allows users to distinguish different aspects of a drawing when it is plotted. For example, an area on a site designated for demolition can be assigned a color that has been assigned a screening percentage. When plotted, the area will be shown at a lighter shade compared with other elements in the drawing. This will allow the contractor to immediately identify the demolition area on the drawing.

Table 3-4 lists colors recommended to be used for screening along with a recommended screening percentage. Optionally, when variations in screening are not important, a single screening can be applied to all screened graphics.

Plotting

Printers and plotters are controlled by files called pen tables or feature tables. These files (tables) convert thicknesses and/or color in an electronic file to line thicknesses on a paper drawing.

Table 3-4. Screened Colors.

AutoCAD		MicroStation		Gray Scale Ratios (RGB)		
Color No.	Screen percent	Color No.	Screen percent	Red	Green	Blue
250	60	8	60	102	102	102
251	50	200	50	128	128	128
252	40	168	40	153	153	153
253	30	120	30	179	179	179
254	20	56	20	204	204	204

This manual standardizes presentation graphics as they relate to electronic drawing files (screen display) and not the final printed or plotted paper drawing. By employing pen tables, each agency can ensure that consistent drawings are produced from an electronic file regardless of the type of printer or plotter used. It is the responsibility of each field activity to develop pen tables based on the printer/plotter used at that activity.

Text

Text styles/fonts

Each of the two major CAD platforms contain sets of fonts that have been designed for use in CAD drawing presentation. MicroStation has various fonts stored in font resource files, with each resource file capable of containing multiple fonts. AutoCAD has individual fonts as shape files. In addition, each platform has the ability to support TrueType fonts that are installed on the individual computer. Each application also has the ability to create additional fonts for its use. Since projects designed in CAD are planned for use many years into the future and files will be used by many different individuals, use of any nonstandard font is not recommended. This includes fonts for symbology, logos, business titles, etc.

There is not a direct relationship between MicroStation resource files and AutoCAD shape files. Therefore, it is important that font use be reviewed at the start of a project and decisions made on fonts that are then used consistently throughout the project by all disciplines. Previous releases of the A/E/C CAD Standard allowed the use of various AutoCAD, MicroStation, and TrueType fonts. To improve the direct translation of fonts between applications, only TrueType fonts are now allowed in the A/E/C CAD Standard.

Contrasting text styles (or fonts) are used within a drawing to delineate types of information. In most A/E/C drawings, the fonts shown in Table 3-5 should be sufficient.

Table 3-5. Comparison of Font Types.

Font Type	TrueType
Monotext	Lucida Console ABCDEFGHIJKLMNOPQRST UVWXYZ abcdefghijklmnopqrst uvwxyz
Proportional	Arial ABCDEFGHIJKLMNOPQRST UVWXYZ abcdefghijklmnopqrst uvwxyz
Slanted	Arial (slanted by 21.8 degrees) <i>ABCDEFGHIJKLMNQRST UVWXYZ abcdefghijklmnopqrst uvwxyz</i>
Filled	Arial Black ABCDEFGHIJKLMNOPQRST UVWXYZ abcdefghijklmnopqrst uvwxyz
Symbology	Symbol ΑΒΧΔΕΦΓΗΙΘΚΑΜΝΟΠΡΣΤ ΥϚΩΞΨΖ αβγδεζηικλμνοπρστ υφωξψζ

- Monotext font. This font creates text characters that are evenly spaced. Monotext font should be used where text fields need to be aligned such as in schedules or, in some cases, title blocks.
- Proportional font. This font creates text where the characters are proportionally spaced. It is appropriate for general notes, labels, or title blocks.
- Slanted font. A slanted font is used where text needs to be easily distinguished from other text.

- Filled font. Filled fonts are used primarily for titles and on cover sheets.
- Symbology font. This font should be used in cases where Greek symbols are representations for technical information.

Text height

The NCS recommends that the minimum text height for plotted CAD files is 3/32 in. (2.4 mm). However, to maintain legibility in half-size drawings, most sites go no lower than 1/8 in. (3 mm) in text height for dimensions, notes, callouts, table/schedule text, and general text on full size drawings. Subtitles and titles shall be plotted equivalent to 3/16 in. (5 mm) and 1/4 in. (6 mm) lettering size, respectively. The text height and text width shall be assigned equal number values. Line spacing shall be equal to one half of the text height.

General text placement

Text shall never be placed over other text. Text shall not be placed over feature lines, hatching, or patterning. If text is placed in a hatched or patterned area, the hatching/patterning shall be clipped so the text can be clearly read.

Text justification depends upon the type of text being placed. For example, general numbered notes shall have upper left justification, elevation labels appearing to the left of a feature shall have bottom right justification, and elevation labels appearing to the right of a feature shall have bottom left justification. (**Note:** In MicroStation, text shall be placed using text nodes when more than one line of text is placed. Text node justification shall be set so that moving the node will not be required or will be minimal should the text require future editing.)

Abbreviations

Abbreviations for words or phrases frequently used in plans, sections, elevations, or details should follow the abbreviations as established in the NCS (UDS Module 5 – Terms and Abbreviations). When possible, the use of abbreviations should be kept to a minimum. Other abbreviations, particularly discipline-unique abbreviations, may be used but must not conflict with those established in the NCS.

Border Sheets

Sheet sizes

Typical A/E/C projects (contract documents) will be prepared on ANSI D sheets (ANSI E may be used for large maps (i.e., installation master plans and drawings for civil works projects)). For international projects, ISO A1 sheets are to be used (ISO A0 may be used for large maps). Other industry standard sizes may be used depending on specific customer requirements. Table 3-6 lists the standard sizes of all sheets.

Table 3-6. ANSI, Architectural, and ISO Sheet Size Comparison.

ANSI		Architectural		ISO	
Mark	Size in inches	Mark	Size in inches	Mark	Size in inches (mm)
F	28.0 x 40.0	F	30.0 x 42.0	NA	NA
E	34.0 x 44.0	E	36.0 x 48.0	A0	33.1 x 46.8 (841 x 1189 mm)
D	22.0 x 34.0	D	24.0 x 36.0	A1	23.4 x 33.1 (594 x 841 mm)
C	17.0 x 22.0	C	18.0 x 24.0	A2	16.5 x 23.4 (420 x 594 mm)
B	11.0 x 17.0	B	12.0 x 18.0	A3	11.7 x 16.5 (297 x 420 mm)
A	8.5 x 11.0	A	9.0 x 12.0	A4	8.3 x 11.7 (210 x 297 mm)

To develop the graphics for the sheet border, the following minimum sheet margin (defined by the NCS as “the space between the edge of the sheet and the sheet area”) guidelines are to be used:

- Top and bottom margin: 3/4 in. (20 mm)
- Left margin: 1-1/2 in. (40 mm)
- Right margin: 3/4 in. (20 mm)

Title block

The Center recommends the use of a vertical title block placed in the right-hand margin of the border sheet as shown in Figure 3-1. Use of the vertical title block provides the most usable drawing space on a sheet. The vertical title block also ensures that the most prevalent and pertinent information remains at the bottom right of the sheet. In compliance with the NCS (UDS Module 2–Sheet Organization), title block data will include the following:

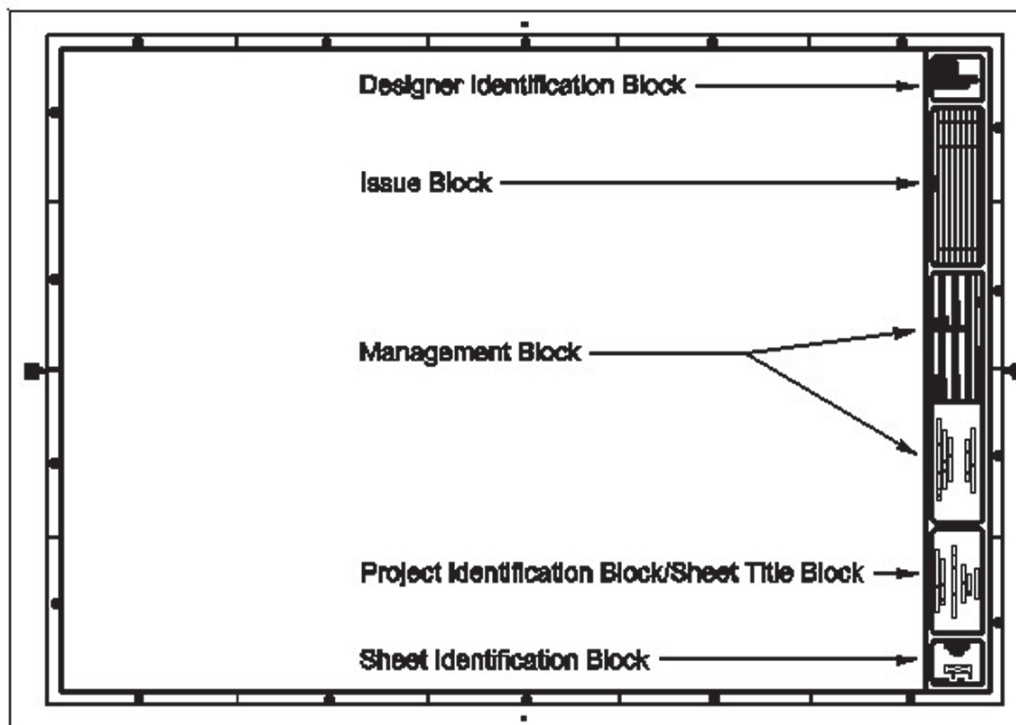


Figure 3-1. Vertical title block.

- Designer identification block
- Issue block
- Management block
- Project identification block/sheet title block
- Sheet identification block

Note: *Local standards may modify the content of the title block but should not alter its size or configuration if possible. See the NCS for additional recommendations.*

Designer identification block. The designer identification block (Figure 3-2) contains the logo or name of the agency that designed the sheet. This space could also be expanded by reducing the size of the issue block to accommodate professional seals when required.

Issue block. The issue block (Figure 3-3) contains a history of revisions, addenda, and/or clarifications to the sheet. The first entry should be placed on the lower left-hand line of the issue block and subsequent entries should be made above it.

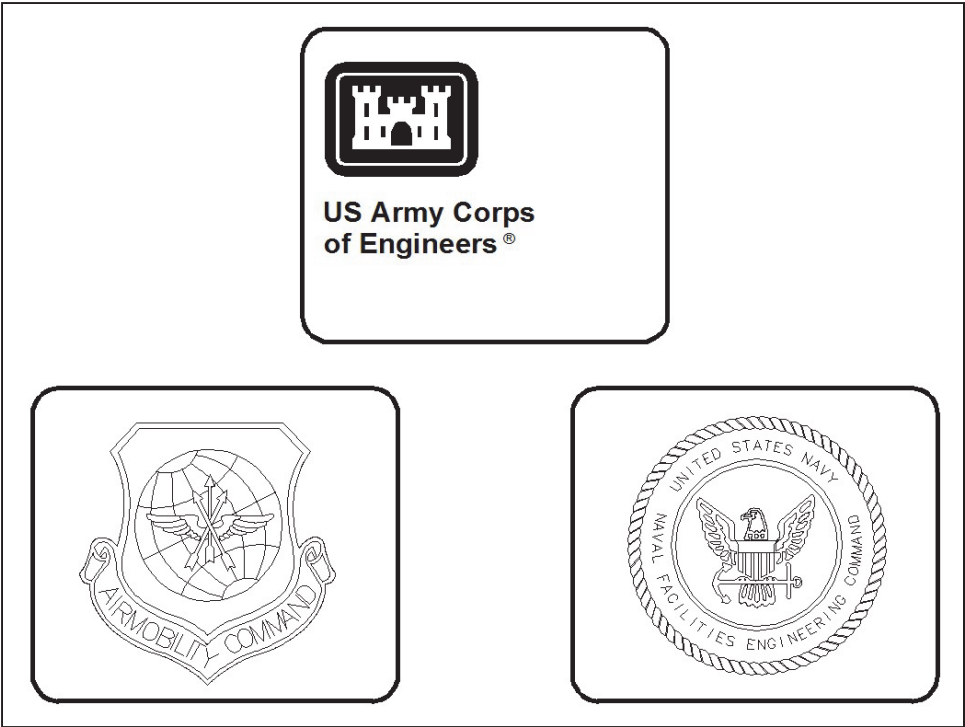


Figure 3-2. Designer identification block.

MARK	DESCRIPTION	DATE	APPR.

Figure 3-3. Issue block.

Management block. The management block (Figure 3-4) contains information about the designer, reviewer, and submitter. This block can also be used to maintain filing information about the drawing, such as the file name, plot scale, and drawing code (this information is sometimes plotted outside the drawing sheet cut line). If an A-E has developed the drawings, there is room for information about the firm in the lower left portion of the block.

U.S. ARMY CORPS OF ENGINEERS _____ DISTRICT CITY, STATE	DESIGNED BY:		DATE:
	DWN BY:	CKD BY:	SOLICITATION NO.:
DESIGN FIRM STREET ADDRESS CITY, STATE ZIP ADDRESS 4	SUBMITTED BY:		CONTRACT NO.:
	PLOT SCALE:	ISSUE DATE:	FILE NUMBER:
	SIZE:	FILE NAME:	

Figure 3-4. Management block.

The management block can also contain authorization block information. This is typically where the principals of the design agent would sign drawings, either for a whole project or by individual disciplines. Sometimes a disclaimer is included stating whether the project was designed by a Government agency or through a contract with a Government agency.

Project identification block/sheet title block. The project identification block/sheet title block (Figure 3-5) contains two sets of information. First, the project name is identified, possibly with the location or phase of the project identified. If small enough, a project logo can be presented in this block. The second set of information contains a description of the content of the sheet (e.g., Architectural Floor Plan). If more than one type of information is presented on the sheet (i.e., plans, schedules, details), the most important information is identified.

PROJECT TITLE 1
PROJECT TITLE 2
PROJECT TITLE 3
PROJECT TITLE 4
SHEET TITLE 1
SHEET TITLE 2
SHEET TITLE 3

Figure 3-5. Project identification block/sheet title block.

Sheet identification block. The sheet identification block (Figure 3-6) contains the sheet identifier. This sheet identifier is composed of the discipline designator, the sheet type designator, and the sheet sequence number described in the section, “Electronic Drawing File Naming Conventions” (Chapter 2). The “number of sheets” listing is optional and can contain either the total number of sheets for the entire project drawing set or the number of sheets for that particular discipline designator.

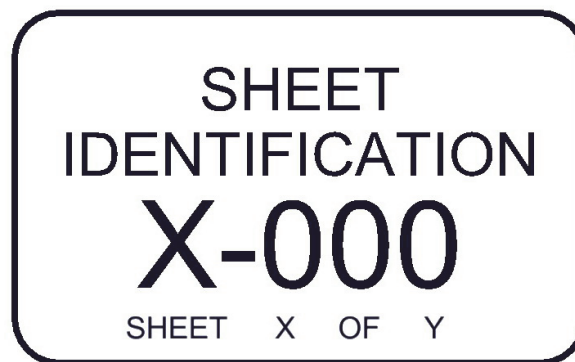


Figure 3-6. Sheet identification block.

Real Estate Border Sheets

A Real Estate border sheet is basically the same as border sheets described on the preceding pages. Real Estate contract documents are typically prepared on ANSI E size sheets. Because of the nature of information required for Real Estate, two additional information blocks are required:

- Project map block
- Index map block

Project map block

The project map block (Figure 3-7) contains detailed information about the project. In-depth information about the project location, transportation facilities available, audited acquisitions, and disposal data may be included as part of this block.

Index map block

The index map block (Figure 3-8) contains additional signatures not found in the designer identification block (e.g., Chief of Real Estate Division, Chief of Cadastral Section, etc.). Also, a specific Real Estate drawing number may be included in this block.

FINAL	
PROJECT MAP	
DEPT. OF THE	_____
ARMY SERVICE	_____
LOCATION OF PROJECT	
STATE	_____
COUNTY	_____
DIVISION	_____
DISTRICT	_____
ARMY AREA	_____
MILES OF	_____
MILES OF	_____
TRANSPORTATION FACILITIES	
RAILROADS	_____
STATE ROADS	_____
FEDERAL ROADS	_____
AIRLINES	_____
AUDITED ACQUISITION	
TOTAL ACRES ACQUIRED	_____
ACRES ACQUIRED PRIOR TO T-1-40	_____
CHANGING TIDELAND PRIOR TO T-1-40	_____
FEE ACQUIRED AFTER T-1-40	_____
TRANSFER (FEE)	_____
LEASE	_____
LEASEMENT (FEE)	_____
LEASE	_____
LEASEMENT RESERVED IN FEE DISPOSAL	_____
LESSOR INTERESTS	PERMITS (16) _____ PERMITS (27) _____ PERMITS (17) _____ PERMITS (20) _____ PERMITS (24) _____ PERMITS (25) _____
DISPOSAL	
TOTAL ACRES DISPOSED OF	_____
SOLD (FEE)	_____
EXCHANGE	_____
LEASEMENT	_____
SOLD PERMIT (F)	_____
TRANSFERRED (FEE)	_____
TRANSFERRED TIDELANDS (CHANGING)	_____
RETRANSFERRED	_____
LEASES TERMINATED	_____
LESSOR INTERESTS TERM.	PER (2) _____ PER (7) _____ PER (12) _____
REASSIGNED (FEE)	_____
TO G-24 (FEE)	_____
OTHER	_____
TO G-24 (LEASE)	_____
LEGEND	
EXCEPT FOR THE SPECIAL SYMBOLS SHOWN BELOW, USE SYMBOLS AND DEFINITIONS IN ARMY GUP SERVICE TECHNICAL MANUAL NO. 25	
RESERVATION LINE	_____
RESERVATION LINE (ACTUAL SURVEY)	_____
TRACT BOUNDARY LINE	_____
TRACT NUMBER	_____
DISPOSAL	_____

Figure 3-7. Project map block.

INDEX MAP	
DEPARTMENT OF THE ARMY - U. S. ARMY ENGINEER DISTRICT, _____ - CORPS OF ENGINEERS - _____ DIVISION	
DRAWN BY: _____	REAL ESTATE LOCATION MILITARY RESERVATION
TRACED BY: _____	
CHECKED BY: _____	
SUBMITTED BY: _____	
CHIEF, CADASTRAL SECTION	
RECOMMENDED BY: _____	APPROVED BY: _____ DATE _____
CHIEF, REAL ESTATE DIVISION	COLONEL, CORPS OF ENGINEERS, DISTRICT COMMANDER
US ARMY CORPS OF ENGINEERS, WASH DC 20314	
AUDITED	SCALE IN FEET _____
INSTALLATION OR PROJECT NO. _____	DRAWING NO. SE-RE-0905

Figure 3-8. Index map block.

Drawing Scales

Typical drawing scales for both inch-pound and SI measurements are indicated in Table 3-7. Table 3-8 lists recommended text sizes for common inch-pound scales, as well as line type scale factors for those scales. Table 3-9 lists recommended text sizes for common metric scales. (Note: The scales shown are not all-inclusive. Scales used should be limited to those commonly found on hand-held architectural, mechanical, and engineering scales.)

Dimensioning

As far as the appearance of dimensions, the NCS is very specific. Dimension text heights (see “Text height”, p.29) should match the size of the text in the rest of the drawing (i.e., notes and callouts) and the location of the dimension text should be at the midpoint and top of the dimension line (where possible). Dimension lines should be offset a minimum of 9/16 in. (14.5 mm) and extension lines should be offset a minimum of 1/16 in. (1.5 mm) from the element being dimensioned. Slashes or filled arrowheads are allowed by the NCS for dimension terminators. Filled arrowhead terminators should have an arrowhead width of $1.5 * TH$ (TH = dimension text height) and a height of $0.5 * TH$ (Figure 3-9). This achieves the NCS requirement of 3:1 filled arrowheads. Dimension terminator selection should be consistent across the entire set of drawings. Color and line width settings for dimensions should follow those shown in Figure 3-10 and Table 3-10.

Dimensioning in Metric (SI)

Methodologies for dimensioning metric (SI) drawings are based upon the recommendations of the former Construction Metrication Council of NIBS, Washington, DC. These recommendations comply with the American Society for Testing and Materials (ASTM) E 621-94 (ASTM 1999-withdrawn 2008).

Table 3-7. Typical Drawing Scales.

Drawing Type	Inch-Pound	Metric
Site Plans	1" = 20'	1:200
	1" = 30'	1:400
	1" = 40'	1:500
	1" = 50'	1:600
	1" = 60'	1:700
	1" = 100'	1:1000
	1" = 200'	1:2000
	1" = 400'	1:5000
	1" = 500'	1:6000
	1" = 1000'	1:10000
	1" = 2000'	1:20000
Floor Plan	1/4" = 1' - 0"	1:50
	1/8" = 1' - 0"	1:100
	3/32" = 1' - 0"	----
	1/16" = 1' - 0"	1:200
Roof Plan	1/16" = 1' - 0"	1:200
Exterior elevations	1/8" = 1' - 0"	1:100
	3/32" = 1' - 0"	----
	1/16" = 1' - 0"	1:200
Interior Elevations	1/4" = 1' - 0"	1:50
	1/8" = 1' - 0"	1:100
Cross sections	1/4" = 1' - 0"	1:50
	1/8" = 1' - 0"	1:100
	3/32" = 1' - 0"	----
	1/16" = 1' - 0"	1:200
Wall sections	1/2" or 3/4" = 1' - 0"	1:20
Stair details	1" or 1-1/2" = 1' - 0"	1:10
Details	3" = 1' - 0"	1:5
	1" or 1-1/2" = 1' - 0"	1:10

Table 3-8. Inch-pound Text Sizes and Line Type Scales.

Scale	Text Size	Line Type Scale
12" = 1' - 0" or Full Size	0.125"	1
6" = 1'-0"	0.25"	2
3" = 1' - 0"	0.50"	4
1-1/2" = 1' - 0"	1"	8
1" = 1' - 0"	1.5"	12
3/4" = 1' - 0"	2"	16
1/2" = 1' - 0"	3"	24
3/8" = 1' - 0"	4"	32
1/4" = 1' - 0"	6"	48
3/16" = 1' - 0"	8"	64
1/8" = 1' - 0"	12"	96
3/32" = 1' - 0"	16"	128
1/16" = 1' - 0"	24"	192
1/32" = 1' - 0"	48"	384
1" = 5'	7.5"	60
1" = 10'	1.25'	120
1" = 20'	2.5'	240
1" = 30'	3.75'	360
1" = 40'	5'	480
1" = 50'	6.25'	600
1" = 60'	7.5'	720
1" = 100'	12.5'	1200
1" = 200'	25'	2400
1" = 400'	50'	4800
1" = 500'	62.5'	6000
1" = 1000'	125'	12000
1" = 2000'	250'	24000

Table 3-9. Metric Text Sizes and Line Type Scales.

Scale	Text Size	Line Type Scale
1:1 or Full Size	3 mm	1
1:2.5	7.5 mm	2.5
1:5	15 mm	5
1:10	30 mm	10
1:20	60 mm	20
1:30	90 mm	30
1:40	120 mm	40
1:50	150 mm	50
1:60	180 mm	60
1:100	300 mm	100
1:200	600 mm	200
1:400	1.2 m	400
1:500	1.5 m	500
1:600	1.8 m	600
1:700	2.1 m	700
1:1000	3.0 m	1000
1:2000	6.0 m	2000
1:5000	15 m	5000
1:6000	18 m	6000
1:10000	30 m	10000
1:20000	60 m	20000

Millimeters

The preferred unit of measure for most A/E/C work is millimeters. Unit notations are unnecessary and should not be used. The dimension is provided as a whole number as shown in Figure 3-11. Also, a note should be added to the drawing stating, “All dimensions and/or dimensions shown in callouts/notes are in millimeters unless otherwise noted.”

When meter measurements are included on the same sheet, the meter dimension is provided as a real number taken to three places past the decimal point (Figure 3-12). Again, unit notations are unnecessary.

Note: *In circumstances where very small dimensions are used (e.g., machine details), it is permissible to use real numbers for millimeter dimensions. A note should be placed on the detail regarding this fact.*

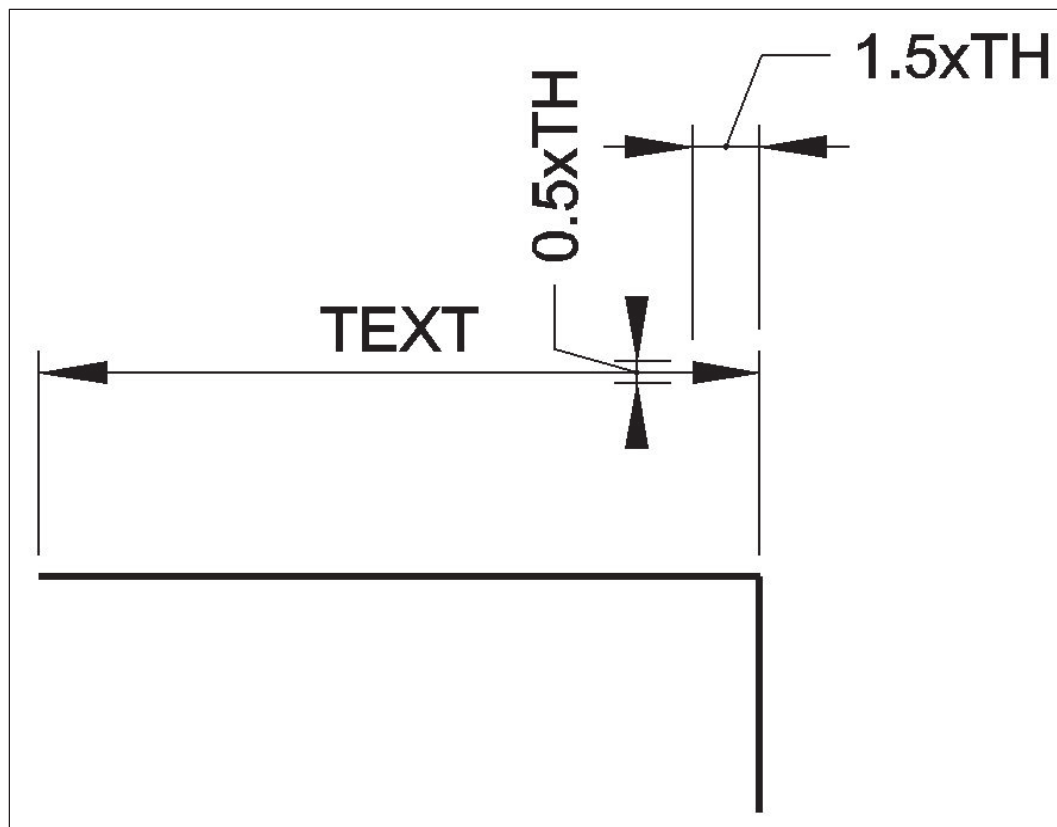


Figure 3-9. Filled arrowhead terminator sizes.

Meters

For site plans or other drawings drawn to scales over 1:200, the unit of measure is typically meters. Where greater accuracy is required, show dimensions to three decimal places (Figure 3-12). A note should be added to the drawing stating, “All dimensions and/or dimensions shown in callouts/notes are in meters unless otherwise noted.”

Large units of measure

Commas shall not be used when providing large units of measure; instead, a space replaces the traditional comma in numbers containing five or more digits (e.g., the number 45,000 is displayed as 45 000). In numbers containing four digits, no space is necessary (e.g., 5000). These methods are shown in Figures 3-13 and 3-14.

Note: *The automatic dimensioning features of AutoCAD do not allow users to replace commas with spaces in dimension text. The dimension text will presently have to be edited to provide the spacing required by ASTM E 621-94 (ASTM 1999).*

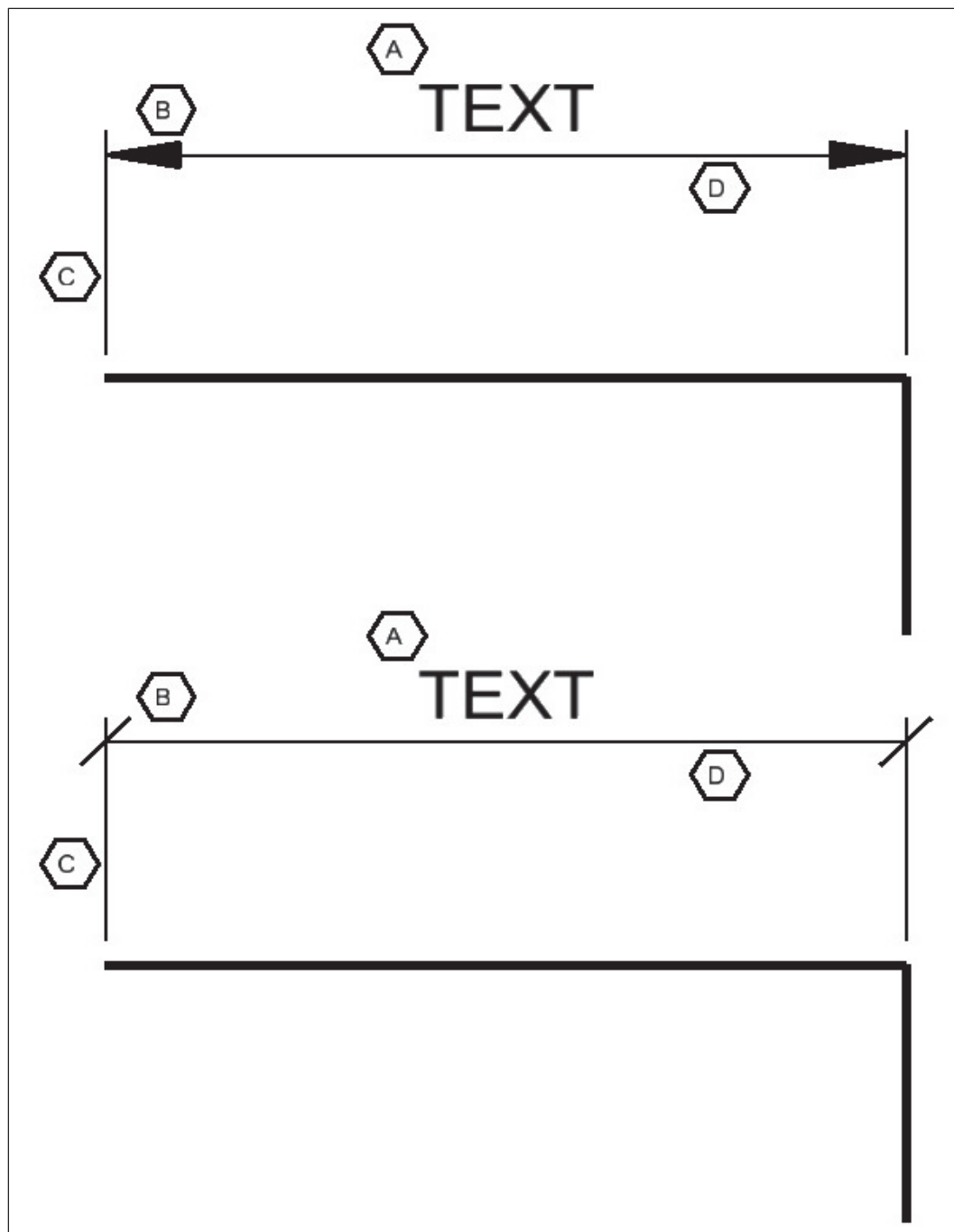


Figure 3-10. Dimension element settings.

Table 3-10. Dimension Element Settings.

Identifier	Dimension Element	NCS Line Width (mm)	Recommended Color
A	Dimension Text	0.35	Yellow
B	Terminators	0.35	Red
C	Extension Lines	0.25	Red
D	Dimension Lines	0.25	Red

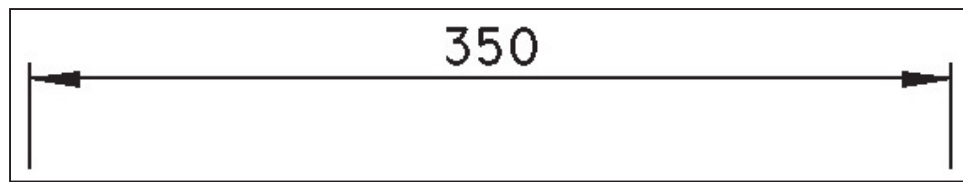


Figure 3-11. Dimension in millimeters. Always shown as a whole number.

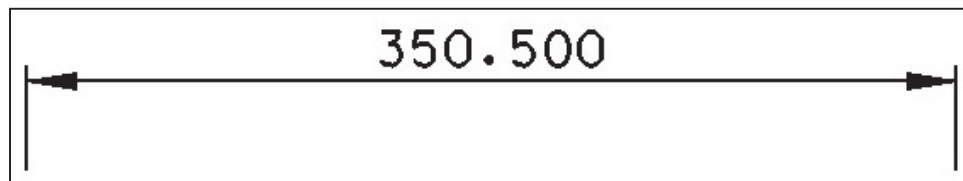


Figure 3-12. Dimension in meters. Always shown as a real number (with decimal).

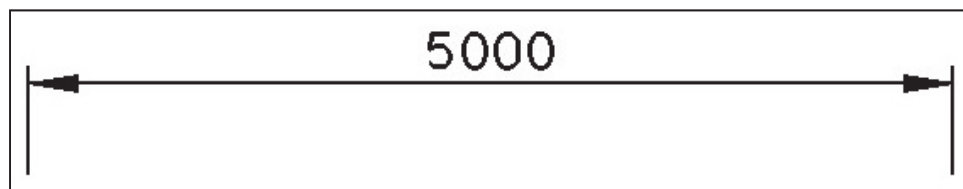


Figure 3-13. Proper dimension presentations for metric measurements with four or fewer digits.

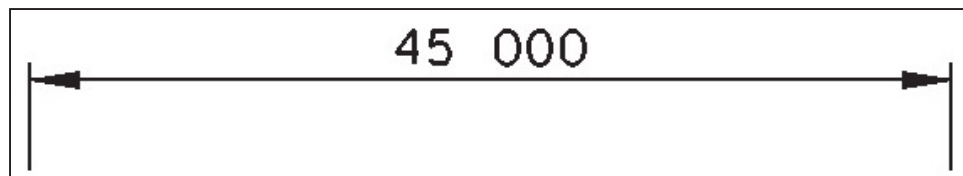


Figure 3-14. Proper dimension presentations for metric measurements with five or more digits.

Dual units

To avoid confusion, dual units (both inch-pound and metric) should not be used. As stated in Construction Metrication Council (1998), the use of dual units “increases dimensioning time, doubles the chance for errors, makes drawings more confusing, and only postpones the (metric) learning process.”

Exceptions to this include certain “standard building designs” where dual dimensions ensure that the design can be used in either SI or inch-pound projects and in situations where products/components used in an SI project are available only as inch-pound products.

4 Level/Layer Assignments

Level/Layer Naming Convention

CAD levels or layers are analogous to overlays in manual drafting systems and serve to separate graphic elements (lines, shapes, and text) according to the design discipline they represent (Figure 4-1).

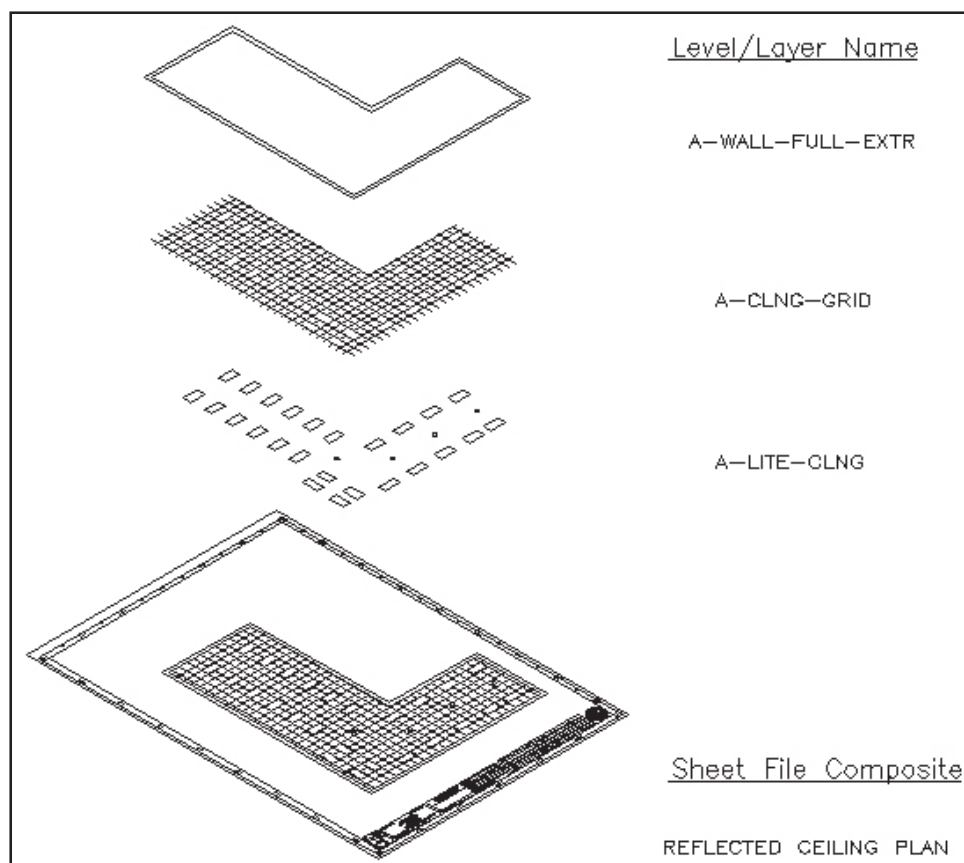


Figure 4-1. Typical levels/layers contained in a sheet file.

The types of information represented by individual levels/layers can be grouped into two primary types: model file-specific information and sheet file-specific information (Figure 4-2). Sheet file-specific information can then be broken down into two secondary types: design model-specific and sheet model-specific.

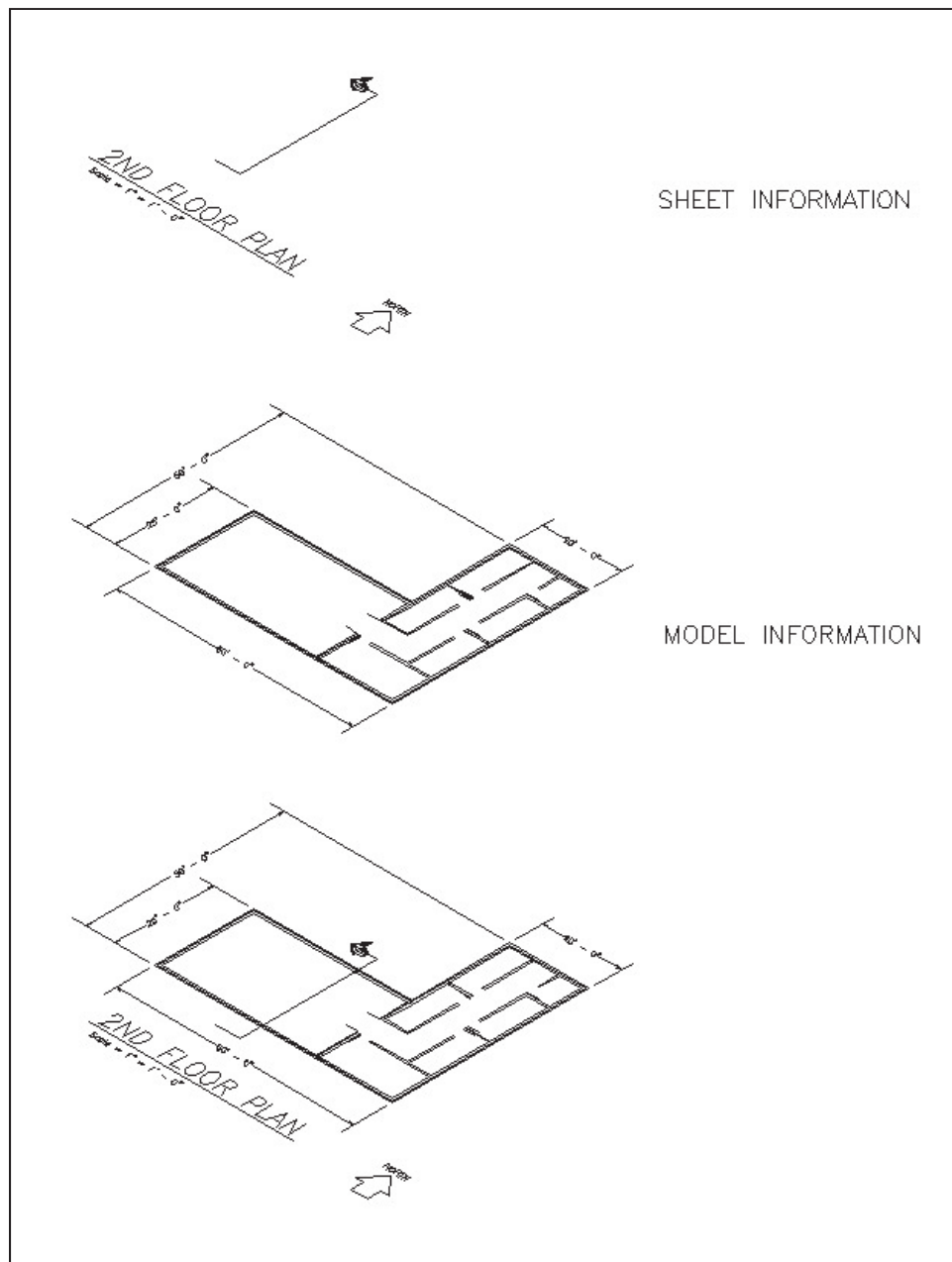


Figure 4-2. Sheet- and model-specific information.

- Model file-specific information represents the physical form of a site, a building, or objects composing a building. This information is often shared between CAD files (both model file and sheet file) through the use of reference files. Examples include walls, doors, light fixtures, and room numbers. Model file-specific information may be either literal (e.g., walls) or symbolic (e.g., electrical outlets).
- Sheet file-specific information may include notes, annotative symbols, and titles. This type of information is usually not shared between CAD

files or drawings. Design models inside a sheet file contain graphic information that would relate to real-world information (e.g., point coordinates), or information that would be sectioned off into multiple sheets (e.g., a floor plan that may take three sheets to present because of its size). Sheet model-specific information would include items specific for the presentation of that sheet. This is one reason that sheet models should never be used as a reference file to other files.

A third type of information exists for BIM. The files created in BIM are different from model files and sheet files because they are not directly referenced as graphics in the generation of drawings. Information from BIM is extracted and used to create the traditional models used in CAD generation of drawings.

To use and manipulate model file- and sheet file-specific information effectively, every level/layer must be defined (standardized) by its name and its use.

The reuse of graphic information reduces drawing time and improves project coordination. The level/layer is the basic tool used in CAD for managing graphic information (Figure 4-3). The levels/layers defined within this standard are based on the recommendations set forth in “AIA CAD Layer Guidelines” (AIA 2011).

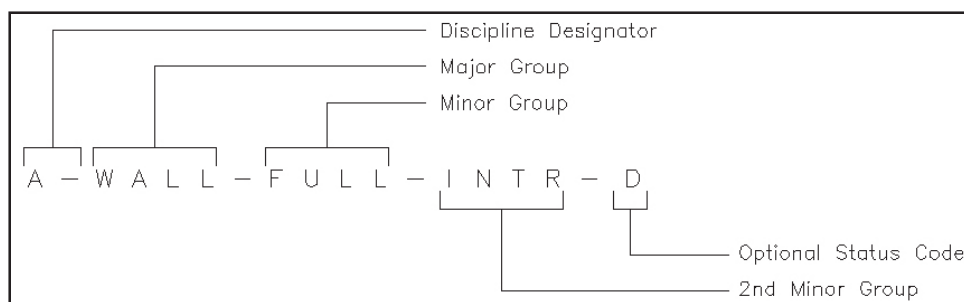


Figure 4-3. Level/layer naming format.

A basic level/layer name consists of a two-character Discipline Designator (e.g., “A-“ for Architectural, “E-“ for Electrical), a four-character Major Group (e.g., “A-DOOR” for Doors, “E-LITE” for Lighting), and a four-character Minor Group (e.g., “A-WALL-CNTR” for wall center lines, “E-LITE-CLNG” for ceiling lights). For further differentiation, another four-character Minor Group may be used (e.g., “A-WALL-FULL-EXTR” for exterior full-height walls versus “A-WALL-FULL-INTR” for interior full-

height walls). An optional item to indicate Status or Phase can also be added to every level/layer name (See “Status (Phase) levels/layers” later in this chapter).

Model Files

As mentioned in Chapter 2, model files represent full-size drawings of building elements, systems, or information (e.g., the mechanical HVAC system, the architectural floor plan, details, or sections), and sheet files represent final plotted sheets. Model files are used as components in creating plotted sheet files. The information contained within a model file for a discipline may be referenced by other disciplines to create the particular model files or sheet files for that discipline.

A model file can be considered a work in progress. For instance, a mechanical engineer may reference the architect’s floor plan model file to begin development of the HVAC ductwork layout model file. Meanwhile, the architect can continue developing the floor plan to meet new requirements. Any changes to the floor plan would be immediately accessible to the mechanical engineer. The viewing of real-time updates eliminates a great deal of frustration for other disciplines because it allows for on-the-spot rather than after-the-fact modifications.

Level/layer assignment tables

The level/layer assignment tables in Appendix A present the following (Figure 4-4 presents an excerpt):

- The levels/layers assigned to each model file.
- An AIA format level/layer name for each level/layer.
- A detailed description for each level/layer.
- The recommended presentation graphics associated with each level/layer. This includes the line style, line width, and color. (Note: The recommended presentation graphics may be changed to aid in drawing clarity (e.g., to show hidden objects). However, the recommended presentation graphics should be adhered to as much as possible to maintain drawing consistency.)
- The various model files that levels/layers can be created in.

Discipline: Architectural

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types							
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Floor Plan	Reflected Ceiling Plan	Roof Plan	Equipment Plan	Area Calculations/Occupancy Plan	Elevations	Sections	Details
AIA Format	Level/Layer Description												
General Information													
A-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X	X	X
A-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X
A-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16	X	X	X	X	X	X	X	X
A-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X
A-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X	X	X
A-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X	X	X
A-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X
A-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X	X	X
A-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X	X	X
A-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X
Area Information													
A-AREA-IDEN	Room numbers, tenant identifications, area calculations	0	0.35	2	4					X			
A-AREA-LINE	Architected area calculation boundary lines	0	0.50	4	7					X			
A-AREA-OCCP	Occupant or employee names	0	0.35	2	4					X			
A-AREA-PATT	Area cross hatching	0	0.18	8	9					X			

Figure 4-4. Model file level/layer assignment table.

Annotation levels/layers. The function of annotation levels/layers is to contain model-specific information that might not be required by other disciplines. These levels/layers are as follows with ** representing a Discipline Designator (e.g., A-, C-):

****ANNO-DIMS**

Witness/extension lines, dimension terminators, and dimension text.

****ANNO-KEYN**

Reference keynotes with associated leaders.

****ANNO-MASK**

Text/shape mask for use with photo backgrounds

****ANNO-NOTE**

General notes and remarks.

****ANNO-NPLT**

Non-plotting graphic information.

****ANNO-PATT**

Patterning, poche, shading, and hatching.

****ANNO-SYMB**

Miscellaneous symbols.

****ANNO-TEXT**

Miscellaneous text and callouts with associated leaders.

****ANNO-RDME**

Read-me information.

****ANNO-REFR**

Reference files and raster attachments.

Status (Phase) levels/layers. In some cases, levels/layers may be modified to show the status of a particular item in the drawing (e.g., to be demolished, to be moved, future work, etc.). In these cases, levels/layers may have a Status code appended to them as shown in Figure 4-3. See Table 4-1 for the Status (Phase) codes.

Table 4-1. Status (Phase) Codes.

Code	Description
A	Abandoned
D	Existing to demolish
E	Existing to remain
F	Future work
M	Items to be moved
N	New work
T	Temporary work
X	Not in contract
1-9	Phase numbers

The use of the Status (Phase) code should be limited, since it can significantly increase the number of levels/layers in a model file. Most items can be shown through referenced model files or changing the line style of items. For instance, in a “New Work” model file, “Existing to Remain” items can be shown through a screened reference file. “Not in Contract” items and “Future Items” could be shown with a dashed line style. Therefore, it is up to the user to determine whether the use of the Status (Phase) code in level/layer names increases the readability of the model file.

Border sheet model files

As mentioned before, a model file contains information that can be referenced by other disciplines to create other model files or final sheet files. Border sheets are referenced by all disciplines to create sheet files; therefore, border sheets are model files. A border sheet model file contains border sheet linework, the title block, and project-specific symbols and text. Typically, each discipline will use the same border sheet and fill in sheet-specific information within the title block or revision block prior to printing the final sheet file (e.g., sheet number, designer names).

Reference files (XREFs)

Reference files (external references or XREFs) enable designers to share drawing information electronically, eliminating the need to exchange hard copy drawings between the design disciplines. With the use of reference files, the structural engineer need not wait for the architect to complete the architectural floor plans before beginning the structural framing plan model file.

Referencing electronic drawing information makes any changes later made by the architect apparent to the structural designer. This real-time access to the work of others ensures accuracy and consistency within a set of drawings and helps promote concurrent design efforts. No longer does one discipline have to wait until another discipline is nearly finished before they begin their drawings.

However, the use of level/layer assignments is a key component in the successful use of reference files. Proper use of levels/layers allows others to use the information in various model files efficiently by allowing levels/layers to be turned on only for the desired graphics.

Sheet Files

Sheet files are the final project sheets that are ready to be plotted. A sheet file contains sheet-specific information (e.g., north arrows, scales, section cuts, title block information) in a sheet model (i.e., Paper Space for AutoCAD users). A design model inside the sheet file contains the model information assembled as it would be displayed on a sheet. This model would have real-world spatial alignment and would be used as the primary

model for graphical information to be displayed and presented in the sheet model. (See Chapter 2 for more on drawing assembly.)

Level/layer assignment tables

The level/layer assignment tables in Appendix B present the following (Figure 4-5):

Discipline: Architectural					
Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
A-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
A-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
A-ANNO-LEGN	Legends and symbol keys	0	V	V	V
A-ANNO-MATC	Match lines	0	0.70	7	0
A-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
A-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
A-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
A-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
A-ANNO-REDL	Redlines	0	0.25	1	3
A-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
A-ANNO-REVC	Revision clouds	0	0.35	4	7
A-ANNO-REVS	Revision indicators and text	0	0.35	4	7
A-ANNO-SCHD	Schedules	0	V	V	V
A-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
A-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Figure 4-5. Sheet file level/layer assignment table.

- The levels/layers assigned to each sheet file.
- An AIA format level/layer name for each level/layer.
- A detailed definition for each level/layer.
- The recommended presentation graphics associated with each level/layer. This includes the line style, line width, and color.

Users should note that the first 15 levels/layers of the sheet file type for every discipline are the same, with the exception that the Discipline Designator changes depending on the discipline for that sheet file type. The unique function of these Annotation levels/layers is to contain sheet-specific information. These levels/layers are as follows with ** representing a Discipline Designator (e.g., A-, C-):

**ANNO-DIMS

Sheet-specific witness/extension lines, dimension terminators, and dimension text.

****ANNO-KEYN**

Sheet-specific keynotes with associated leaders.

****ANNO-LEGN**

Legends and symbol keys.

****ANNO-MATC**

Matchlines.

****ANNO-NOTE**

Sheet-specific notes and general remarks.

****ANNO-NPLT**

Non-plotting graphic information.

****ANNO-PATT**

Sheet-specific patterning and hatching (e.g., keyplan patterning).

****ANNO-RDME**

Read-me information.

****ANNO-REDL**

Redlines.

****ANNO-REFR**

Reference files and raster attachments

****ANNO-REVC**

Revision clouds.

****ANNO-REVS**

Revision indicators and text.

****ANNO-SCHD**

Schedules.

****ANNO-SYMB**

Sheet-specific symbols (e.g., north arrow, scales).

****ANNO-TEXT**

Sheet-specific text and callouts with associated leaders.

Development of sheet files

As mentioned previously, referenced model files are used in the construction of sheet files. The user opens the sheet file type from Appendix B that is appropriate to his/her discipline, then references existing model files into a design model. This design model is used to generate the sheet model for that file. At this point, information can be placed on the annotation layers for the model that has been assembled.

For example, after the designer assembles the model files and creates the sheet model as described previously in Chapter 2, the designer would have to “turn off” levels/layers within each referenced model file to achieve the desired sheet file. Design model-specific annotations can be placed in the design model. When a border sheet and the design model are referenced together to form the sheet model, the designer could then place sheet-specific annotations in the sheet model. Once the final sheet file is achieved, the resulting file is saved (with all reference files attached).

5 Standard Symbolology

Introduction

A “cell” in MicroStation and a “block” in AutoCAD are groups of graphical elements that can be manipulated as a single entity. Examples of typical cells/blocks are windows, doors, graphic scale keys, furniture, etc. The use of such symbology enhances CAD productivity and provides an excellent opportunity for CAD standardization.

Electronic Version of the Symbology/Elements

Deliverables

Within the electronic deliverables available as part of the A/E/C CAD Standard, the following symbology is provided:

- MicroStation cells contained in cell libraries (.cel) and custom line styles contained in resource files (.rsc).

Note: *Even though the symbols are provided in cell libraries, for MicroStation a cell library is nothing more than a specialized design file with an individual model for each symbol. The extension .cel is simply used to differentiate a cell library from a standard design (.dgn) file.*

- AutoCAD blocks, each in an individual drawing (.dwg) file, patterns in a pattern library file (.pat), multilines in a multiline library file (.mln), and custom line styles in a line type library file (.lin).

Line styles

Line style definitions determine the particular dash-dot sequence and relative length of dashes, blank spaces, and the characteristics of any included text or shapes. Working with line styles provides a means of distinguishing the purpose of one line from another.

AutoCAD and MicroStation both provide a set of standard line styles, as well as allowing the user to define custom line styles. In AutoCAD these custom line styles are defined in a line type library file (.lin) and a

multiline library file (.mln). In MicroStation, custom line styles are contained in resource files (.rsc) (see Chapter 3, “Line types/styles” for more information).

Note: *Custom line styles do not readily translate between systems; therefore, users should anticipate that translated custom line styles may revert into their primitive graphics.*

Tabulated Version of the Symbology/Elements

Graphical presentations of the entire symbology library are shown in Appendix D, “A/E/C CAD Standard Symbology.”

The symbology library contains four types of elements: Lines, Patterns, Symbols, and Objects. Lines are defined as a graphical representation of linear drawing features (e.g., utility lines, fence lines, contours). Patterns are defined as repeated drawing elements (e.g., lines, dots, circles) within a defined area. Symbols are defined as MicroStation cells or AutoCAD blocks that are representative of objects (e.g., electrical outlets, smoke detectors). Objects are defined as MicroStation cells or AutoCAD blocks that retain their actual size no matter the scale of the drawing (e.g., 30- by 50-in. desk, 3'-0" door).

References

- Air Force Logistics Command. 1989. Architectural and engineering services for CADD implementation within Air Force Logistics Command.
- American Institute of Architects. 2000. *Architectural graphic standards*. 10th ed. New York: John Wiley and Sons.
- American National Standards Institute. 1972. Graphic symbols for electrical wiring and layout diagrams used in architect and building construction. ANSI Y32.9-1972, Institute of Electrical and Electronics Engineers, New York.
- American Society for Testing and Materials. 1999 (withdrawn 2008). Standard practice for the use of metric (SI) units in building design and construction (Committee E-6 Supplement to E380). ASTM E 621-94. Philadelphia, PA.
- American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. 1997. 1997 ASHRAE fundamentals handbook. Atlanta, GA.
- American Society of Mechanical Engineers. 1995. Decimal inch drawing sheet size and format. ASME Y14.1-1995. New York.
- _____. 1995. Metric drawing sheet size and format. ASME Y14.1M-1995. New York.
- American Society of Plumbing Engineers. 1998. Data book Volume 1: Fundamentals of plumbing engineering. Chicago, IL.
- Construction Metrication Council. 1998. *Construction metrication*. Vol 7, Issue 1. Washington, DC: National Institute of Building Sciences.
- Department of Commerce/Department of Defense. 1997. *United States of America nautical chart symbols, abbreviations, and terms*. 10th ed. Washington, DC: Department of Commerce.
- Headquarters, U.S. Army Corps of Engineers. 1990. Standards manual for U.S. Army Corps of Engineers Computer-Aided Design and Drafting (CADD) systems. Engineer Manual 1110-1-1807. Washington, DC.
- International Organization for Standardization. 1982. Technical drawings — General principles of presentation. ISO 128. Switzerland.
- _____. 1998. Technical product documentation - Organization and naming of layers for CAD - Part 2: Concepts, format and codes used in construction documentation. ISO 13567-2. Switzerland.
- National Fire Protection Association. 2006. Standard for fire safety and emergency symbols. NFPA 170. Quincy, MA.
- National Institute of Building Sciences. 2011. United States National CAD Standard. Washington, DC.

Naval Facilities Engineering Command. 1993. Policy and procedures for electronic deliverables of facilities computer-aided design and drafting (CADD) systems. MIL-HNDBK-1006/7. Alexandria, VA.

Sheet Metal and Air Conditioning Contractors' National Association. 1995. *HVAC duct construction standards-metal and flexible*. 2nd ed. Chantilly, VA.

Appendix A

Model File Level/Layer Assignment Tables

This appendix provides the model file level/layer assignment tables:

General.....	A3
Hazardous Materials	A4
Survey/Mapping.....	A6
Geotechnical	A19
Civil	A23
Landscape	A33
Structural.....	A34
Architectural	A41
Interiors.....	A44
Fire Protection.....	A46
Plumbing.....	A48
Mechanical.....	A50
Electrical	A56
Telecommunications	A60

NOTE: With the movement toward designing "green" and requiring Leadership in Energy and Environmental Design (LEED) certification for buildings, new layers/levels to cover green materials/technologies are going to be required. Before creating new layers/levels, please consult the latest version of the U.S. National CAD Standard to see if such layers/levels already exist.

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Discipline: General
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Border Sheet	Cover Sheet	Key Plan
AIA Format	Level/Layer Description							
General Information								
G-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V			X
G-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16	X	X	
G-ANNO-MATC	Match lines	0	0.70	6	5			X
G-ANNO-NOTE	General notes and general remarks	0	0.35	2	4			X
G-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X
G-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9			X
G-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X
G-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA			X
G-ANNO-SYMB	Miscellaneous symbols	V	0.35	6	5	X	X	X
G-ANNO-TEXT	Miscellaneous text	0	V	V	V	X	X	X
G-ANNO-TTLB	Border and titleblock linework	V	V	V	V	X	X	
G-ANNO-TTLB-GRID	Grid lines inside border	7	0.18	5	1	X		
Grid Lines								
G-GRID-COOR	X-Y coordinate grid lines	0	0.25	7	0			X
G-GRID-COOR-IDEN	X-Y coordinate grid lines annotation	0	0.25	7	0			X
G-GRID-EXTR	Column grid outside building	7	0.18	5	1			X
G-GRID-IDEN	Column grid tags	0	0.25	1	3			X
Floor Information								
G-PLAN-OTLN	Floor outline/perimeter/building footprint	0	0.35	6	5			X
Coordinate Information								
G-COOR-LALO	Latitude/longitude coordinate grid ticks	0	0.25	2	4	X		
G-COOR-LALO-IDEN	Latitude/longitude coordinate text	0	0.25	2	4	X		
G-COOR-STAT	State plane coordinate grid ticks	3	0.25	2	4	X		
G-COOR-STAT-IDEN	State plane coordinate text	0	0.25	2	4	X		
Site Information								
G-SITE-OTLN	Site plan - key map	0	0.35	6	5			X

Note: V = Varies, NA = Not Applicable

Discipline: Hazardous Materials

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Pollution Prevention Plan	Sections	Details
AIA Format	Level/Layer Description							
General Information								
H-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X
H-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X
H-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X
H-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X
H-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X
H-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X
H-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X
H-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X
H-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X
Buildings								
H-BLDG-IDEN	Annotation	0	0.35	2	4	X		
H-BLDG-OTLN	Command posts, information centers	0	0.35	2	4	X		
Decontamination								
H-DECN-EQPM	Decontamination equipment	0	0.25	1	3	X		
H-DECN-IDEN	Annotation	0	0.35	6	5	X		
Disposal Areas								
H-DISP-HAZW	Hazardous waste	0	0.18	5	1	X		
H-DISP-IDEN	Annotation	0	0.35	6	5	X		
H-DISP-MUNT	Munitions	0	0.18	5	1	X		
H-DISP-TANK	Spill containment tanks	0	0.35	6	5	X		
Emergency Fixtures								
H-FIXT-EYEW	Emergency eyewashes	0	0.25	3	2	X		
H-FIXT-SHWR	Emergency showers	0	0.25	3	2	X		
Monitoring Stations								
H-MNST-AIRQ	Air quality	0	0.25	3	2	X		
H-MNST-GWTR	Ground water	0	0.25	3	2	X		
H-MNST-IDEN	Annotation	0	0.25	3	2	X		
H-MNST-LAND	Landfill gas	0	0.25	3	2	X		
H-MNST-SOIL	Soil gas	0	0.25	3	2	X		
H-MNST-SWTR	Surface water	0	0.25	3	2	X		
Pollution Areas								
H-POLL-CONC	Polluted area of concern	0	0.35	2	4	X		
H-POLL-IDEN	Annotation	0	0.35	2	4	X		
H-POLL-ORIG	Point of pollution origin	0	0.35	2	4	X		
H-POLL-POTN	Potential spill, emission, or release source	0	0.35	2	4	X		
Sample Points								
H-SAMP-AIRS	Air samples	0	0.25	1	3	X		
H-SAMP-BIOL	Biological samples	0	0.25	1	3	X		
H-SAMP-BLDG	Building material samples (e.g., asbestos, lead, PCBs, etc.)	0	0.25	1	3	X		
H-SAMP-GWTR	Ground water samples	0	0.25	1	3	X		
H-SAMP-IDEN	Annotation	0	0.25	1	3	X		
H-SAMP-MAGN	Magnetometer location points	0	0.25	1	3	X		
H-SAMP-SEDI	Sediment samples	0	0.25	1	3	X		
H-SAMP-SOIL	Soil samples	0	0.25	1	3	X		
H-SAMP-SOLI	Solid material samples	0	0.25	1	3	X		
H-SAMP-SWTR	Surface water samples	0	0.25	1	3	X		

Discipline: Hazardous Materials

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Pollution Prevention Plan	Sections	Details
AIA Format	Level/Layer Description							
H-SAMP-WAST	Waste samples	0	0.25	1	3	X		
Storage Facilities								
H-STOR-HAZM	Hazardous materials	0	0.35	6	5	X		
H-STOR-HAZW	Hazardous waste	0	0.35	6	5	X		
H-STOR-IDEN	Annotation	0	0.35	6	5	X		
Wells								
H-WELL-INJN	Injection well	0	0.25	5	1	X		
H-WELL-XTRA	Extraction well	0	0.25	5	1	X		
Sections								
H-SECT-IDEN	Component identification numbers	0	0.35	2	4		X	
H-SECT-MBND	Material beyond section cut	0	0.18	5	1		X	
H-SECT-MCUT	Material cut by section	0	0.50	4	7		X	
H-SECT-PATT	Textures and hatch patterns	0	0.18	8	9		X	
Detail Information								
H-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V			X

Note: V = Varies, NA = Not Applicable

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
Level/Layer Description															
General Information															
V-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X	X	X	X	X
V-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X
V-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16	X	X	X	X	X	X	X	X	X	X
V-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X	X	X
V-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X
V-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X	X	X	X	X
V-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X
V-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X	X	X	X	X
V-ANNO-SYMB	Reference symbols	V	V	6	5	X	X	X	X	X	X	X	X	X	X
V-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X
Aerial Survey															
V-AERI-BNDY	Aerial photography boundaries	0	0.35	6	5	X									
V-AERI-BNDY-NEAT	Neat model boundary	0	0.35	2	4	X									
V-AERI-FLYS	Fly station	0	0.35	6	5	X									X
V-AERI-IDEN	Aerial annotation	0	0.35	2	4	X									
V-AERI-INDX	Aerial photo index	0	0.70	7	0	X									
V-AERI-PATH	Aerial flight lines/paths	6	0.35	22	22	X									
V-AERI-PHOT	Photo center (exposure station)	0	0.35	22	22	X									
V-AERI-PNPT	Panel points	0	0.35	6	5	X									X
Airfields															
V-AFLD-BCNS-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	203	45								X		
V-AFLD-BCNS-MISC	Miscellaneous nav aids - windcones and beacons	0	0.35	203	45								X		
V-AFLD-BCNS-STRB	Strobe beacons	0	0.35	203	45								X		
V-AFLD-CIRC-CTRL	Control and monitoring circuits	0	0.35	163	41								X		
V-AFLD-CIRC-IDEN	Circuit identifier tags, symbol modifier, and text	0	0.25	2	4								X		
V-AFLD-CIRC-MULT	Multiple circuits	0	0.35	23	46								X		
V-AFLD-CIRC-SERS	Series circuits	0	0.35	203	45								X		
V-AFLD-DEVC	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	0	0.35	23	46								X		
V-AFLD-DBNK	Ductbanks	EUDUCX	0.25	83	42								X		
V-AFLD-IDEN	Airfield annotation	0	0.35	2	4								X		
V-AFLD-JBOX	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	0	0.35	23	46								X		
V-AFLD-LITE-APPR	Approach lights	0	0.35	203	45								X		
V-AFLD-LITE-DIST	Distance and arresting gear markers	0	0.35	203	45								X		
V-AFLD-LITE-LANE	Hoverlane, taxilane, and helipad lights	0	0.35	203	45								X		
V-AFLD-LITE-OBST	Obstruction lights	0	0.35	203	45								X		
V-AFLD-LITE-RUNW	Runway lights	0	0.35	203	45								X		
V-AFLD-LITE-SIGN	Taxiway guidance signs	0	0.35	203	45								X		
V-AFLD-LITE-TAXI	Taxiway lights	0	0.35	203	45								X		
V-AFLD-LITE-THRS	Threshold lights	0	0.35	203	45								X		
V-AFLD-VALT	Airfield lighting vaults	0	0.35	203	45								X		
Alignments															
V-ALGN-DATA	Alignment coordinates and curve data	0	0.25	3	2	X	X				X	X		X	X
V-ALGN-LINE	Alignments	4	0.25	2	4	X	X				X	X		X	X
V-ALGN-MAJR	Alignment major stationing and tick marks	0	0.25	1	3	X	X				X	X		X	X
V-ALGN-MARK	Alignment tick marks	0	0.25	3	2	X	X				X	X		X	X
V-ALGN-MINR	Alignment minor stationing and tick marks	0	0.18	6	5	X	X				X	X		X	X

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
V-ALGN-STAT	Alignment stationing	0	0.25	3	2	X	X				X	X		X	X
V-ALGN-SYMB	Alignment symbols (PIs)	0	0.25	6	5	X	X				X	X		X	X
V-ALGN-TEXT	Alignment text, annotation with associated leaders	0	0.25	2	4	X	X				X	X		X	X
Aprons															
V-APRN-CNTR	Apron centerlines	7	0.18	1	3	X									
V-APRN-CNTR-IDEN	Apron centerline annotation	0	0.25	2	4	X									
V-APRN-GRND	Grounding points	0	0.25	2	4	X									
V-APRN-HOLD	Holding position markings	0	0.18	1	3	X									
V-APRN-IDEN	Airfield apron - annotation	0	0.25	2	4	X								X	X
V-APRN-MOOR	Mooring points	0	0.25	2	4	X									
V-APRN-MRKG	Apron markings	0	0.35	4	7	X									
V-APRN-OTLN	Airfield apron - outlines	0	0.35	4	7	X								X	X
V-APRN-SECU	Security zone markings	0	0.18	1	3	X									
V-APRN-SHLD	Shoulders with annotation	0	0.25	2	4	X									
V-APRN-SHLD-MRKG	Shoulder stripes	0	0.25	2	4	X									
Beach Renourishment															
V-BECH-BANK-TOP~	Beach top of bank	0	0.18	6	5	X									X
V-BECH-BKLN	Beach breakline	2	0.25	5	1	X									X
V-BECH-BNCH	Beach bench	6	0.25	22	22	X									X
V-BECH-CNTR	Beach centerline	7	0.18	5	1	X									X
V-BECH-LIMIT	Beach limit lines	0	0.35	4	7	X									X
V-BECH-OHWM	Ordinary high water marks	0	0.25	2	4	X									X
V-BECH-OTLN	Beach outline	0	0.18	2	4	X									X
V-BECH-SLOP-IDEN	Beach slope indicator with annotation	0	0.18	7	0	X									X
V-BECH-SLOP-TOP~	Beach top of slope	2	0.25	22	22	X									X
V-BECH-SYMB	Beach symbols	0	0.18	6	5	X									X
V-BECH-TOE~	Beach toe	3	0.35	5	1	X									X
V-BECH-TOE~IDEN	Beach toe annotation	0	0.18	7	0	X									X
Buildings and Primary Structures															
V-BLDG-DECK	Outdoor decks (attached, no roof overhead)	0	0.35	4	7	X		X						X	X
V-BLDG-DOCK	Loading docks	0	0.35	4	7	X		X						X	X
V-BLDG-FTPT	Building footprints	0	0.50	7	0	X		X						X	X
V-BLDG-IDEN	Building and other structure annotation	0	0.25	2	4	X		X						X	X
V-BLDG-OVHD	Building overhangs	0	0.35	4	7	X		X						X	X
V-BLDG-PRCH	Porches (attached, roof overhead)	0	0.35	4	7	X		X						X	X
Borings															
V-BORE-GENL-LOCN	General boring X,Y location marker	0	0.35	6	5	X	X								
V-BORE-GENL-NAME	General boring name	0	0.35	6	5	X	X								
V-BORE-GENL-NOTE	General boring notes	0	0.35	6	5	X	X								
V-BORE-GPRO-LOCN	GeoProbe X,Y location marker	0	0.35	6	5	X	X								
V-BORE-GPRO-NAME	GeoProbe boring name	0	0.35	6	5	X	X								
V-BORE-GPRO-NOTE	GeoProbe boring notes	0	0.35	6	5	X	X								
V-BORE-UNDS-LOCN	Undisturbed boring X,Y location marker	0	0.35	6	5	X	X								
V-BORE-UNDS-NAME	Undisturbed boring name	0	0.35	6	5	X	X								
V-BORE-UNDS-NOTE	Undisturbed boring notes	0	0.35	6	5	X	X								
V-BORE-VCOR-LOCN	Vibra-Core X,Y location marker	0	0.35	6	5	X	X								
V-BORE-VCOR-NAME	Vibra-Core name	0	0.35	6	5	X	X								

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming	Level/Layer Description	Graphic Defaults				Model File Types									
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
AIA Format	Level/Layer Description														
V-BORE-VCOR-NOTE	Vibra-Core notes	0	0.35	6	5	X	X								
Borrow Areas															
V-BORW-IDEN	Borrow/spoil area annotation	0	0.25	2	4	X	X								
V-BORW-LINE	Borrow/spoil area	2	0.25	2	4	X	X								
Bridges															
V-BRDG-CHRD-LOW~	Low chord	0	0.35	4	7									X	
V-BRDG-CNTR	Bridge centerlines	7	0.18	1	3	X									
V-BRDG-CTLJ	Control joints	0	0.18	4	7	X									
V-BRDG-DECK	Bridge deck	0	0.35	4	7	X								X	
V-BRDG-IDEN	Bridge annotation	0	0.25	2	4	X									
V-BRDG-OTLN	Bridge outlines	0	0.35	4	7	X									
V-BRDG-RLG~	Bridge railing	0	0.18	4	7	X								X	
Cathodic Protection System															
V-CATH-ANOD	Sacrificial anode system	0	0.35	83	42				X						
V-CATH-CURR	Impress current system	0	0.35	83	42				X						
V-CATH-IDEN	Identifier tags, symbol modifier, and text	0	0.25	83	42				X						
V-CATH-TEST	Test stations	0	0.35	83	42				X						
Channels															
V-CHAN-BANK-IDEN	Channel/canal top of bank annotation	0	0.25	2	4		X							X	X
V-CHAN-BANK-TOP~	Channel/canal top of bank	0	0.25	2	4		X							X	X
V-CHAN-BNCH	Channel/canal bench design feature lines (breaklines form DTMs)	0	0.25	2	4		X							X	X
V-CHAN-BWTR	Breakwaters	0	0.25	6	5	X	X								X
V-CHAN-CNTR	Channel centerline and survey report lines	7	0.18	5	1	X	X								X
V-CHAN-CNTR-IDEN	Channel centerline and survey report lines - annotation	0	0.25	5	1	X	X								X
V-CHAN-DACL	De-authorized channel limits, anchorages, etc.	0	0.25	3	2	X	X								X
V-CHAN-DACL-IDEN	De-authorized channel limits, anchorages, etc. - annotation	0	0.25	3	2	X	X								X
V-CHAN-DOCK	Docks, decks, floats, piers, and mooring facilities	0	0.25	6	5	X	X							X	X
V-CHAN-LIMIT	Channel limits, anchorages, turning basins, disposal areas, etc.	0	0.25	6	5	X	X							X	X
V-CHAN-LIMIT-IDEN	Channel limits, anchorages, turning basins, disposal areas, etc. - annotation	0	0.25	6	5	X	X							X	X
V-CHAN-NAID	Navigation aids and text	0	0.25	2	4	X	X								X
V-CHAN-SLOP-LINE	Channel cut/fill slope (Indicates cut and fill lines)	0	0.25	2	4	X	X								X
V-CHAN-SPOL	Spoil limits	0	0.35	4	7	X	X								X
V-CHAN-SYMB	Channel/canal symbols	0	0.25	6	5	X	X								X
V-CHAN-TEXT	Channel/canal text, annotation with associated leaders	0	0.25	2	4	X	X								X
V-CHAN-TOE~	Channel/canal toe	3	0.35	5	1	X	X							X	X
V-CHAN-TOE~-IDEN	Channel/canal toe annotation	0	0.25	6	5	X	X								X
V-CHAN-TURN	Turning points	0	0.25	2	4	X	X								X
V-CHAN-WIDE	Channel/canal widener	3	0.35	4	7	X	X								X
Communications															
V-COMM-EQPM	Other communications distribution equipment	0	0.35	23	46				X						
V-COMM-JBOX	Communication junction boxes, pull boxes, handholes, pedestals, and splices	0	0.35	23	46				X						
V-COMM-MHOL	Manholes	0	0.35	23	46				X						
V-COMM-OVHD	Overhead communications/telephone lines	COMARX	0.35	4	7	X		X	X					X	X
V-COMM-OVHD-IDEN	Identifier tags, symbol modifier and text	0	0.25	4	7	X		X	X					X	X
V-COMM-POLE	Poles	0	0.35	203	45	X		X	X					X	X
V-COMM-POLE-GUYS	Guying equipment	0	0.35	203	45	X		X	X					X	X
V-COMM-POLE-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	203	45	X		X	X					X	X

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
V-COMM-UGND	Underground communications/telephone lines	COMUGX	0.35	4	7	X		X		X				X	X
V-COMM-UGND-IDEN	Identifier tags, symbol modifier and text	0	0.25	4	7	X		X		X				X	X
Control Points															
V-CTRL-BMRK	Benchmarks	0	0.35	6	5	X	X								X
V-CTRL-GRID	Grid	0	0.25	3	2	X	X								X
V-CTRL-HORZ	Horizontal control points	0	0.35	6	5	X	X								X
V-CTRL-HVPT	Horizontal/vertical control points	0	0.35	6	5	X	X								X
V-CTRL-IDEN	Control point annotation	0	0.35	2	4	X	X								X
V-CTRL-TRAV	Transverse points	0	0.35	6	5	X	X								X
V-CTRL-VERT	Vertical control points	0	0.35	6	5	X	X								X
Domestic Water															
V-DOMW-DEVC	Connectors, faucets, reducers, regulators, vents, intake points, taps, backflow preventers, and valves	0	0.25	6	5					X					
V-DOMW-FIRE	Fire lines	FIRE	0.25	1	3					X					
V-DOMW-FTTG	Caps, cleanouts, crosses, and tees	0	0.25	6	5					X					
V-DOMW-HYDT	Hydrants	0	0.25	1	3	X		X		X					
V-DOMW-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X		X				X	X
V-DOMW-MAIN-PIPE	Main domestic water piping	WATRX	0.25	6	5	X		X		X					
V-DOMW-METR	Meters	0	0.25	3	2					X					
V-DOMW-NPW--HYDT	Non-potable hydrants/flushing hydrants	0	0.25	1	3					X					
V-DOMW-NPW--PIPE	Non-potable water piping	NONPOT	0.25	6	5					X					
V-DOMW-PITS-VENT	Vent pits	0	0.25	3	2					X					
V-DOMW-PITS-VALV	Valve pits/vaults	0	0.25	3	2	X		X		X					
V-DOMW-SERV-PIPE	Domestic water service piping	0	0.25	6	5					X				X	X
V-DOMW-SIGN	Surface markers/signs	0	0.25	1	3					X					
V-DOMW-STNS-PUMP	Booster pump stations	0	0.25	6	5					X					
V-DOMW-STNS-REDU	Pressure reducing stations	0	0.25	6	5					X					
V-DOMW-TANK	Water storage tanks	0	0.25	1	3	X		X		X					
V-DOMW-WELL	Water well houses	0	0.25	1	3					X					
Ditches or Washes															
V-DTCH-BOTM	Bottom of ditch or wash	6, DITCH	0.18	5	1	X								X	X
V-DTCH-CNTR	Centerline of ditch or wash	7	0.18	5	1	X								X	X
V-DTCH-EWAT	Edge of water	0	0.18	4	7	X								X	X
V-DTCH-IDEN	Ditches and washes annotation	0	0.25	3	2	X								X	X
V-DTCH-TOP~	Top of ditch or wash	0	0.18	3	2	X								X	X
Underground Ductbanks (to be used when multiple systems are in one ductbank system)															
V-DBNK-MULT	Ductbank	EUDUCX	0.35	83	42	X		X	X	X				X	X
V-DBNK-MULT-IDEN	Identifier tags, symbol modifier and text	0	0.25	83	42	X		X	X	X				X	X
Habitats/Landforms															
V-ECCO-BURR	Burrow	0	0.35	4	7	X									
V-ECCO-DENS	Den	0	0.35	4	7	X									
V-ECCO-GATR	Gator hole	2	0.25	6	5	X									
V-ECCO-HUMK	Hummocks	0	0.25	6	5	X									
V-ECCO-IDEN	Habitat annotation	0	0.25	2	4	X									
V-ECCO-NEST	Nest, nesting tree	0	0.35	4	7	X									
V-ECCO-PRCH	Perch/nesting hole	0	0.35	4	7	X									
Flood Hazard Area															
V-FLHA-025Y	25 year mark	6	0.25	6	5	X									

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
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V-FLHA-050Y	50 year mark	3	0.25	2	4	X									
V-FLHA-100Y	100 year mark	0	0.25	6	5	X									
V-FLHA-200Y	200 year mark	2	0.25	2	4	X									
V-FLHA-500Y	500 year mark	7	0.25	6	5	X									
V-FLHA-IDEN	Flood hazard area annotation	0	0.25	2	4	X									
Floodwalls															
V-FLOD-BASE	Floodwall base of wall	0	0.35	20	6	X									
V-FLOD-BASE-IDEN	Floodwall base of wall annotation	0	0.25	20	6	X									
V-FLOD-CNTR	Floodwall centerline	7	0.18	20	6	X									X
V-FLOD-CNTR-IDEN	Floodwall centerline annotation	0	0.25	20	6	X									X
V-FLOD-DRNS	Floodwall toe drain	0	0.25	6	5	X								X	X
V-FLOD-DRNS-IDEN	Floodwall toe drain annotation	0	0.25	6	5	X								X	X
V-FLOD-PILE	Floodwall sheet piling	0	0.35	22	22	X								X	X
V-FLOD-PILE-IDEN	Floodwall sheet piling annotation	0	0.25	22	22	X								X	X
V-FLOD-TOE~	Floodwall toe outline	0	0.25	4	7	X								X	X
V-FLOD-TOP~	Floodwall top of wall	0	0.35	2	4	X								X	X
V-FLOD-TOP~-IDEN	Floodwall top of wall annotation	0	0.25	20	6	X								X	X
Liquid Fuel															
V-FUEL-BERM	Berms for retaining fuel in case of major tank/line rupture	0	0.25	6	5					X					
V-FUEL-DEFL-PIPE	Defueling piping	0	0.25	6	5					X					
V-FUEL-DEVC	Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves	0	0.25	6	5					X					
V-FUEL-FLOW	Flow direction arrows	0	0.25	6	5					X					
V-FUEL-FTTG	Caps, crosses, and tees	0	0.25	6	5					X					
V-FUEL-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X		X				X	X
V-FUEL-JBOX	Junction boxes, manholes, handholes, test boxes	0	0.25	1	3	X		X		X				X	X
V-FUEL-MAIN-PIPE	Main fuel piping	LIQPET	0.25	6	5	X		X		X				X	X
V-FUEL-METR	Meters	0	0.25	3	2					X					
V-FUEL-PITS-HYDT	Hydrant control pits	0	0.25	3	2					X					
V-FUEL-PITS-VENT	Vent pits	0	0.25	3	2					X					
V-FUEL-PITS-VALV	Valve pits	0	0.25	3	2					X					
V-FUEL-SERV-PIPE	Service piping	0	0.25	6	5					X					
V-FUEL-STNS-PUMP	Booster pump stations	0	0.25	6	5					X					
V-FUEL-TANK	Fuel tanks	0	0.25	3	2	X		X		X					
V-FUEL-TRCH	Fuel line trench	0	0.25	3	2					X					
Grade Linework															
V-GRAD-AFTR	After dredge depth	0	0.35	2	4		X							X	X
V-GRAD-EXST	Existing grade, ground line	3	0.35	6	5									X	X
V-GRAD-EXST-BASE	Base survey	2	0.18	22	22		X							X	X
V-GRAD-EXST-SYR1	Survey year one or area one	4	0.18	6	5									X	X
V-GRAD-EXST-SYR2	Survey year two or area two	1	0.18	2	4									X	X
V-GRAD-EXST-SYR3	Survey year three or area three	6	0.18	3	2									X	X
V-GRAD-EXST-SYR4	Survey year four or area four	3	0.18	113	16									X	X
V-GRAD-IDEN	Grade annotation	0	0.25	2	4		X							X	X
V-GRAD-PRED	Pre-dredge	0	0.35	2	4		X							X	X
V-GRAD-SCLN	Stability control line	7	0.35	5	1									X	X
Grid Lines															

Discipline: Survey/Mapping
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
AIA Format	Level/Layer Description														
V-GRID-FRAM	Frame	0	0.35	4	7									X	X
V-GRID-MAJR	Major grid lines	1	0.25	8	9									X	X
V-GRID-MINR	Minor grid lines	1	0.18	8	9									X	X
V-GRID-TEXT	Border text, annotation	0	0.25	2	4									X	X
Geothermal Heat Pump System															
V-GTHP-EQPM	Geothermal heat pump system equipment	0	0.25	203	45							X			
V-GTHP-IDEN	Geothermal heat pump annotation	0	0.35	2	4							X			
V-GTHP-RETN-PIPE	Geothermal heat pump system return piping	0	0.35	203	45							X			
V-GTHP-SUPP-PIPE	Geothermal heat pump system supply piping	0	0.35	203	45							X			
High Temperature/Chilled Water System															
V-HTCW-CWTR-MAIN	Main chilled water piping	0	0.25	163	41							X			
V-HTCW-CWTR-PLNT	Chilled water plant	0	0.25	163	41							X			
V-HTCW-CWTR-SERV	Chilled water service piping	0	0.18	163	41							X			
V-HTCW-DEVC	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and	0	0.25	6	5							X			
V-HTCW-FLOW	Flow direction arrows	0	0.18	3	2							X			
V-HTCW-FTTG	Caps and flanges	0	0.25	6	5							X			
V-HTCW-HWTR-MAIN	Main high temperature piping	0	0.25	113	16							X			
V-HTCW-HWTR-PLNT	High temperature water plant	0	0.25	113	16							X			
V-HTCW-HWTR-SERV	High temperature service piping	0	0.18	113	16							X			
V-HTCW-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X				X		X	X
V-HTCW-JBOX	Junction boxes, manholes, handholes, test boxes	0	0.18	1	3	X		X				X			
V-HTCW-LWTR-MAIN	Main low temperature piping	0	0.25	1	3							X			
V-HTCW-LWTR-SERV	Low temperature service piping	0	0.18	1	3							X			
V-HTCW-PITS	Valve pits/vaults, steam pits	0	0.18	3	2							X			
V-HTCW-RETN-PIPE	Return for all HTCW lines	0	0.18	5	1							X			
V-HTCW-STEM-MAIN	Main steam piping	0	0.25	113	16	X		X				X		X	X
V-HTCW-STEM-SERV	Steam service piping	0	0.18	113	16							X			
V-HTCW-STNS-PUMP	Pump stations	0	0.25	6	5							X			
Hydrosurveys															
V-HYDS-BKLN	Breaklines	4	0.35	7	0	X	X								X
V-HYDS-BKLN-COMM	Subsurface utilities communications breakline	COMUGX	0.35	7	0	X	X								X
V-HYDS-BKLN-DOMW	Subsurface utilities water breakline	WATRX	0.35	7	0	X	X								X
V-HYDS-BKLN-ELEC	Subsurface utilities electric breakline	EPUGX	0.35	7	0	X	X								X
V-HYDS-BKLN-FUEL	Subsurface utilities liquid fuel breakline	LIQPET	0.35	7	0	X	X								X
V-HYDS-BKLN-NGAS	Subsurface utilities natural gas breakline	NTGASX	0.35	7	0	X	X								X
V-HYDS-BKLN-SSWR	Subsurface utilities sanitary sewer breakline	SSWAFX	0.35	7	0	X	X								X
V-HYDS-BKLN-STRM	Subsurface utilities storm sewer breakline	STRAFX	0.35	7	0	X	X								X
V-HYDS-BNDY-EXTR	Surface exterior boundary	0	0.18	3	2	X	X								X
V-HYDS-BNDY-INTR	Surface interior boundary	2	0.18	1	3	X	X								X
V-HYDS-BORE	Boring locations and text	0	0.25	6	5	X	X								X
V-HYDS-COOR	Coordinate grid text annotation	0	0.25	122	23	X	X								X
V-HYDS-COOR-LALO	Latitude and longitude grid ticks	0	0.18	3	2	X	X								X
V-HYDS-COOR-STAT	State Plane coordinate ticks	0	0.18	3	2	X	X								X
V-HYDS-COOR-UTM	UTM coordinate ticks	0	0.18	3	2	X	X								X
V-HYDS-DTMO	DTM obscure area boundary	0	0.25	6	5	X	X								X
V-HYDS-DTMP	DTM points	0	0.25	6	5	X	X								X
V-HYDS-DTMT	DTM triangles	0	0.25	22	22	X	X								X

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
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V-HYDS-MAJR	Major contours	0	0.25	2	4	X	X								X
V-HYDS-MAJR-IDEN	Major contours - annotation	0	0.25	2	4	X	X								X
V-HYDS-MINR	Minor contours	0	0.18	3	2	X	X								X
V-HYDS-MINR-IDEN	Minor contours - annotation	0	0.18	3	2	X	X								X
V-HYDS-PERI	Surface perimeter	0	0.18	3	2	X	X								X
V-HYDS-SHAP	Inroads generated shapes/lines	0	0.18	1	3										X
V-HYDS-SHOR	Shorelines, land features, and references	0	0.25	4	7	X	X								X
V-HYDS-SLOP-FILL	Cut/fill slopes	0	0.25	2	4	X	X								X
V-HYDS-SLOP-IDEN	Cut/fill slope, top/toe slope annotation	0	0.25	2	4	X									X
V-HYDS-SLOP-TOPT	Top/toe slopes	0	0.25	6	5	X									X
V-HYDS-SOUN	Soundings and overbanks	0	0.18	V	V		X								X
V-HYDS-SPOT	Spot elevations	0	0.25	2	4	X	X								X
V-HYDS-VOID	Surface void region	0	0.18	1	3	X	X								X
V-HYDS-WATR	Water level reference (e.g., LWRP, after-grading LWRP, SWP, etc.)	0	0.35	V	V	X	X								X
Industrial Waste Water															
V-INDW-DEVC	Grit chambers, meters, flumes, neutralizers, oil/water separators, ejectors, tanks, and valves	0	0.25	6	5						X				
V-INDW-FLOW	Flow direction arrows	0	0.25	6	5						X				
V-INDW-FTTG	Caps and cleanouts	0	0.25	6	5						X				
V-INDW-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X			X			X	X
V-INDW-JBOX	Junction boxes and manholes	0	0.25	1	3	X		X			X				
V-INDW-LAGN	Lagoons	0	0.25	6	5	X		X			X				
V-INDW-MAIN-PIPE	Main industrial waste water piping	IWASTE	0.25	6	5	X		X			X			X	X
V-INDW-PLNT	Treatment plants	0	0.25	6	5						X				
V-INDW-SERV-PIPE	Industrial waste water service piping	0	0.25	1	3						X				
V-INDW-SIGN	Surface markers/signs	0	0.25	1	3						X				
V-INDW-STNS-LIFT	Lift stations	0	0.25	6	5	X		X			X				
Irrigation															
V-IRRG-EQPM	Irrigation equipment (e.g., controllers, valves, etc.)	0	0.25	6	5	X	X				X				
V-IRRG-IDEN	Irrigation annotation	0	0.25	2	4	X	X				X			X	X
V-IRRG-PIPE	Irrigation piping	0	0.25	6	5	X	X				X			X	X
V-IRRG-WELL	Irrigation wells	0	0.18	3	2						X				
Joints															
V-JNTS-CNSL	Construction joints - longitudinal	0	0.25	6	5	X									
V-JNTS-CNST	Construction joints - transverse	0	0.25	6	5	X									
V-JNTS-CNTL	Contraction joints - longitudinal	0	0.25	2	4	X									
V-JNTS-CNTT	Contraction joints - transverse	0	0.25	2	4	X									
V-JNTS-EDGE	Thickened edges	0	0.25	4	7	X									
V-JNTS-EXP	Expansion joints	0	0.25	12	27	X									
V-JNTS-IDEN	Joint annotation	0	0.25	2	4	X									
Levees															
V-LEVE-BANK-IDEN	Levee top of bank annotation	0	0.25	20	6	X									X
V-LEVE-TOPB	Levee top of bank	0	0.25	20	6	X									X
V-LEVE-BERM	Existing berms	0	0.25	6	5	X									X
V-LEVE-BNCH	Levee bench design feature lines (breaklines form DTMs)	0	0.25	20	6	X									X
V-LEVE-BNCH-IDEN	Levee bench annotation	0	0.18	2	4	X									X
V-LEVE-BRRW	Borrow limits	0	0.35	4	7	X									X
V-LEVE-CNTR	Levee centerline	7	0.18	20	6	X									X

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
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V-LEVE-CNTR-IDEN	Levee centerline annotation	0	0.25	20	6	X									X
V-LEVE-IDEN	Levee annotation	0	0.25	2	4	X									X
V-LEVE-OTLN	Levee outline	0	0.35	4	7	X									X
V-LEVE-SLOP	Levee slope indicator with annotation	0	0.25	2	4	X									X
V-LEVE-STAN	Levee stationing	0	0.25	2	4	X									X
V-LEVE-TOE~	Levee toe	2	0.25	20	6	X									X
V-LEVE-TOE~-IDEN	Levee toe annotation	0	0.18	20	6	X									X
Lights															
V-LITE-EXTR	Exterior lights	0	0.35	203	45			X	X						
V-LITE-EXTR-IDEN	Exterior light identifier tags, symbol modifiers, and text	0	0.25	203	45			X	X						
Military Ranges															
V-MILR-BATP	Battle positions	0	0.35	4	7	X									
V-MILR-CAMS	Range cameras	0	0.25	6	5	X									
V-MILR-FOXH	Fox holes and pits	0	0.25	6	5	X									
V-MILR-MATS	Moving army targets	0	0.35	4	7	X									
V-MILR-MITS	Moving infantry targets	0	0.35	4	7	X									
V-MILR-MITS-IDEN	Moving infantry targets annotation	0	0.25	2	4	X									
V-MILR-PUTS	Pop up targets	0	0.35	4	7	X									
V-MILR-PUTS-IDEN	Pop up targets annotation	0	0.25	2	4	X									
V-MILR-SATS	Stationary army targets	0	0.35	4	7	X									
V-MILR-SATS-IDEN	Stationary army targets annotation	0	0.25	2	4	X									
V-MILR-SITS	Stationary infantry targets	0	0.35	4	7	X									
V-MILR-SITS-IDEN	Stationary infantry targets annotation	0	0.25	2	4	X									
Natural Gas															
V-NGAS-EQPM	Equipment (pumps, motors, etc.)	0	0.25	6	5						X				
V-NGAS-FLOW	Flow direction arrows	0	0.25	6	5						X				
V-NGAS-FTTG	Caps, crosses, and tees	0	0.25	6	5						X				
V-NGAS-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X			X			X	X
V-NGAS-INST	Instrumentation (meters, valves, etc.)	0	0.25	3	2						X				
V-NGAS-MHOL	Manholes	0	0.25	6	5	X		X			X			X	X
V-NGAS-PIPE	Natural gas piping	NTGASX	0.25	6	5	X		X			X			X	X
V-NGAS-PITS-VENT	Vent pits	0	0.25	3	2						X				
V-NGAS-PITS-VALV	Valve pits/boxes	0	0.25	3	2						X				
V-NGAS-SIGN	Surface markers/signs	0	0.25	1	3						X				
V-NGAS-STNS-PUMF	Compressor stations	0	0.25	6	5						X				
V-NGAS-STNS-REDC	Reducing stations	0	0.25	6	5						X				
V-NGAS-TANK	Tanks	0	0.18	3	2	X		X			X				
Obstructions															
V-OBST-AIRS	Airspace obstructions	0	0.25	3	2										X
V-OBST-AIRS-IDEN	Airspace obstruction annotation	0	0.25	2	4										X
V-OBST-UWTR	Underwater obstructions (e.g., sunken ship, barge, etc.)	2	0.25	1	3		X								X
V-OBST-UWTR-IDEN	Underwater obstruction annotation	0	0.25	2	4		X								X
Overrun Areas															
V-OVRN-CNTR	Centerlines	7	0.18	1	3										X
V-OVRN-CNTR-IDEN	Centerline annotation	0	0.25	2	4										X
V-OVRN-IDEN	Airfield overrun area - annotation	0	0.25	2	4									X	X
V-OVRN-OTLN	Airfield overrun area - outlines	0	0.25	4	7									X	X

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
AIA Format	Level/Layer Description														
V-OVRN-SHLD-MRKG	Shoulder markings	0	0.25	4	7										X
Pads (Arm/Disarm/Calibration, etc.)															
V-PADS-CNTR	Centerlines	7	0.18	1	3										X
V-PADS-CNTR-IDEN	Centerline annotation	0	0.25	2	4										X
V-PADS-IDEN	Pads - annotation	0	0.25	2	4									X	X
V-PADS-OTLN	Pad - outlines	0	0.25	4	7									X	X
V-PADS-SHLD	Shoulders with annotation	0	0.18	2	4										X
Power															
V-POWR-DEVC	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	0	0.35	23	46				X						
V-POWR-IDEN	Power annotation	0	0.25	2	4	X		X	X						
V-POWR-JBOX	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	0	0.35	83	42				X						
V-POWR-POLE	Power poles	0	0.35	203	45	X		X	X						
V-POWR-POLE-GUYS	Guying equipment	0	0.35	203	45				X						
V-POWR-POLE-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	203	45				X						
V-POWR-SBST	Substation equipment	0	0.35	23	46				X						
V-POWR-SWCH	Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle	0	0.35	163	41				X						
V-POWR-XFMR-PADM	Pad mounted transformers	0	0.35	23	46				X						
V-POWR-XFMR-POLM	Pole mounted transformers	0	0.35	23	46				X						
Primary Electrical Cables															
V-PRIM-OVHD	Overhead electrical utility lines	EPARX	0.35	4	7	X		X	X					X	X
V-PRIM-OVHD-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	4	7	X		X	X					X	X
V-PRIM-UGND	Underground electrical utility lines	EPUGX	0.35	4	7	X		X	X					X	X
V-PRIM-UGND-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	4	7	X		X	X					X	X
Parking Lots															
V-PRKG-CNTR	Parking lot centerlines	7	0.18	1	3	X		X							
V-PRKG-CNTR-IDEN	Parking lot centerline annotation	0	0.18	1	3	X		X							
V-PRKG-CURB	Curbs and gutters	0	0.25	3	2	X		X							
V-PRKG-DRAIN	Drainage slope indications	0	0.25	1	3	X		X							
V-PRKG-FIXT	Parking lot fixtures (e.g., wheel stops, parking meters)	0	0.25	91	106	X		X						X	X
V-PRKG-FLNE	Fire lanes	0	0.18	1	3	X		X						X	X
V-PRKG-IDEN	Parking lot annotation	0	0.25	6	5	X		X						X	X
V-PRKG-MRKG	Pavement markings	0	0.25	2	4	X		X							
V-PRKG-OTLN	Parking lot outlines	0	0.35	4	7	X		X							
V-PRKG-SIGN	Signs	0	0.25	2	4	X		X							
Property															
V-PROP-BRNG	Bearings and distance labels	0	0.35	6	5	X		X							X
V-PROP-ESMT	Easements	CONEMT	0.50	7	0	X		X							X
V-PROP-IDEN	Property annotation	0	0.25	6	5	X		X							X
V-PROP-LINE	Property lines (Existing recorded plats)	PROPL	0.35	2	4	X		X							X
V-PROP-QTRS	Quarter lines	1	0.35	6	5	X		X							X
V-PROP-RWAY	Right of ways	6	0.50	7	0	X		X							X
V-PROP-SBCK	Setback lines	3	0.18	7	0	X		X							X
V-PROP-SECT	Section lines	7	0.35	6	5	X		X							X
V-PROP-SECT-IDEN	Section lines annotation	0	0.25	6	5	X		X							X
V-PROP-SUBD	Subdivision (interior) lines	0	0.25	1	3	X		X							X
V-PROP-SXTS	Sixteenth lines (40 lines)	16THLN	0.35	6	5	X		X							X
V-PROP-TSHP	Township/range lines	4	0.35	6	5	X		X							X

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
AIA Format	Level/Layer Description														
V-PROP-TSHP-IDEN	Township/range lines annotation	0	0.25	6	5	X		X							X
Pavements															
V-PVMT-ASPH	Pavement pattern - asphalt	0	0.18	8	9	X									
V-PVMT-CONC	Pavement pattern - concrete	0	0.18	8	9	X									
V-PVMT-GRVL	Pavement pattern - gravel	0	0.18	8	9	X									
V-PVMT-IDEN	Road, parking lot, railroad, airfield pavement annotation	0	0.25	2	4	X								X	X
V-PVMT-MRKG	Pavement markings	0	0.35	2	4	X									
V-PVMT-PATT	Joint patterns, text and dimensions	0	0.18	8	9	X									
Railroads															
V-RAIL-CNTR	Railroad track centerlines	7	0.18	1	3	X		X						X	X
V-RAIL-CNTR-IDEN	Railroad track centerline annotation	0	0.25	1	3	X		X						X	X
V-RAIL-EQPM	Railroad equipment (e.g., gates, signals)	0	0.25	91	106	X		X						X	X
V-RAIL-IDEN	Railroad - annotation	0	0.25	2	4	X		X						X	X
V-RAIL-TRAK	Railroad tracks	RAILRD	0.25	2	4	X		X						X	X
Rivers															
V-RIVR-BOTM	River bottom	0	0.25	5	1	X	X							X	X
V-RIVR-CNTR	Centerline of river	7	0.18	1	3	X	X							X	X
V-RIVR-EDGE	River edge	0	0.35	5	1	X	X							X	X
V-RIVR-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	2	4	X	X							X	X
V-RIVR-TOPB	Top of river bank	0	0.25	5	1	X	X							X	X
Roads, Streets, and Highways															
V-ROAD-ASPH	Road outlines - asphalt surface	0	0.18	8	9	X		X							X
V-ROAD-CNTR	Road centerlines	7	0.18	1	3	X		X							X
V-ROAD-CNTR-IDEN	Road centerline annotation	0	0.18	1	3	X		X							X
V-ROAD-CONC	Road outlines - concrete surface	0	0.18	7	0	X		X							X
V-ROAD-CURB	Curbs and gutters	0	0.25	6	5	X		X							X
V-ROAD-GRAL	Guard rails	GUARD	0.25	6	5	X		X							X
V-ROAD-GRVL	Road outlines - gravel surface	0	0.18	20	6	X		X							X
V-ROAD-IDEN	Road, street, highway annotation	0	0.25	6	5	X		X						X	X
V-ROAD-MRKG	Pavement markings	0	0.25	2	4	X		X							X
V-ROAD-OTLN	Road outlines	0	0.25	4	7	X		X							X
V-ROAD-PATT	Joint patterns, text and dimensions	0	0.18	8	9	X									X
V-ROAD-SHLD	Roadway shoulders	0	0.25	6	5	X		X							X
V-ROAD-SIGN	Signs	0	0.18	1	3	X									X
V-ROAD-UPVD	Road outlines - unpaved surface	0	0.18	3	2	X									X
Riprap and Other Permanent Erosion Control Items															
V-RRAP-GABN	Gabions	V	0.18	1	3	X	X								
V-RRAP-MATS	Articulated concrete mats	V	0.18	3	2	X	X								
V-RRAP-RVMT	Revetments	V	0.18	1	3	X	X								
V-RRAP-WEIR	Weirs	V	0.18	3	2	X	X								
Runways															
V-RUNW-BLST	Blast pad and stopway markings	0	0.25	1	3	X								X	X
V-RUNW-CNTR	Centerlines	7	0.18	1	3	X									
V-RUNW-CNTR-MRKG	Centerline markings	0	0.25	1	3	X									
V-RUNW-DISP	Displaced threshold markings	0	0.25	1	3	X									
V-RUNW-DIST	Fixed distance markings	0	0.25	1	3	X									
V-RUNW-EDGE	Airfield runway edges	0	0.25	6	5	X									

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
V-RUNW-IDEN	Airfield runway annotation	0	0.25	2	4	X								X	X
V-RUNW-SHLD	Shoulder markings	0	0.25	6	5	X									
V-RUNW-SIDE	Side stripes	0	0.25	4	7	X									
V-RUNW-TDZM	Touchdown zone markers	0	0.25	6	5	X									
V-RUNW-THRS	Threshold markers	0	0.25	6	5	X									
Secondary Electrical Cables															
V-SECD-OVHD	Overhead electrical utility lines	ESARX	0.35	163	41	X		X	X					X	X
V-SECD-OVHD-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	163	41	X		X	X					X	X
V-SECD-UGND	Underground electrical utility lines	ESUGX	0.35	163	41	X		X	X					X	X
V-SECD-UGND-IDEN	Identifier tags, symbol modifiers, and text	0	0.25	163	41	X		X	X					X	X
Site Features															
V-SITE-EWAT	Edge of water	0	0.35	162	33	X		X							
V-SITE-FENC	Fences and handrails	FENCE	0.25	6	5	X		X							
V-SITE-FENC-IDEN	Fence, handrail, ramp, and trail annotation	0	0.25	6	5	X		X							
V-SITE-FLDS	Stump fields	0	0.25	1	3		X								
V-SITE-IDEN	Existing site feature/structure annotation	0	0.25	6	5	X	X	X						X	X
V-SITE-OTLN	Existing site features (play structures, bike racks, benches, recreational equipment)	0	0.50	4	7	X		X						X	X
V-SITE-ROCK	Rock and rock outcroppings, boulders and cobble	0	0.25	1	3	X		X							
V-SITE-STRC	Structures (bridges, sheds, foundation pads, footings, etc.)	0	0.25	22	22	X		X						X	X
V-SITE-STRS	Stairs and ramps	0	0.25	6	5	X		X							
V-SITE-VEGE	Existing treelines and vegetation	TREEL	0.35	82	18	X		X							
V-SITE-VEGE-IDEN	Existing treelines and vegetation - identification	0	0.35	82	18	X		X							
V-SITE-WALK	Walks, trails, and bicycle paths	0	0.25	2	4	X		X							
V-SITE-WATR	Water features	0	0.35	162	33	X		X							
Special Systems															
V-SPCL-SYST	Special systems (UMCS, EMCS, CATV, etc.)	0	0.35	203	45				X						X
V-SPCL-SYST-IDEN	Special systems (UMCS, EMCS, CATV, etc.) identifier tags, symbol modifier, and text	0	0.25	203	45				X						X
V-SPCL-TRAF	Traffic signal system	0	0.35	203	45				X						X
V-SPCL-TRAF-IDEN	Traffic signal identifier tags, symbol modifier, and text	0	0.25	203	45				X						X
Sanitary Sewer															
V-SSWR-DEVC	Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves	0	0.25	6	5						X				
V-SSWR-FILT	Filtration beds	0	0.25	3	2						X				X
V-SSWR-FLOW	Flow direction arrows	0	0.25	6	5						X				X
V-SSWR-FTTG	Caps and cleanouts	0	0.25	6	5						X				X
V-SSWR-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X			X			X	X
V-SSWR-JBOX	Junction boxes and manholes	0	0.25	1	3	X		X			X				X
V-SSWR-LAGN	Lagoons	0	0.25	3	2	X		X			X				X
V-SSWR-LEAC	Leach field	0	0.25	3	2					X					X
V-SSWR-MAIN-PIPE	Sanitary sewer piping	SSWAFX	0.25	6	5	X		X			X			X	X
V-SSWR-NITF	Nitrification drain fields	0	0.25	3	2	X		X			X				X
V-SSWR-PLNT	Treatment plants	0	0.25	6	5	X		X			X				X
V-SSWR-SERV-PIPE	Sanitary sewer service piping	0	0.25	1	3						X				X
V-SSWR-SIGN	Surface markers/signs	0	0.25	1	3						X				X
V-SSWR-STNS-PUMP	Booster pump stations	0	0.25	6	5	X		X			X				X
V-SSWR-TANK	Septic tanks	0	0.25	3	2	X		X			X				X
Storm Sewer															
V-STRM-AFFF	AFFF lagoon/detention pond	0	0.25	3	2						X				X

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
V-STRM-CHUT	Chutes and concrete erosion control structures	0	0.25	1	3						X				X
V-STRM-CULV	Culverts	CULVRT	0.25	3	2	X		X			X				X
V-STRM-DEVC	Downspouts, flumes, oil/water separators, and flap gates	0	0.25	6	5						X				X
V-STRM-FLOW	Flow direction arrows	0	0.25	6	5						X				X
V-STRM-FMON	Flow monitoring station	0	0.25	6	5						X				X
V-STRM-FTTG	Caps and cleanouts	0	0.25	6	5						X				X
V-STRM-HWAL	Headwalls and endwalls	0	0.35	7	0	X		X			X				X
V-STRM-IDEN	Identifier tags, symbol modifier, and text	0	0.25	2	4	X		X			X			X	X
V-STRM-INLT	Inlets (curb, surface, and catch basins)	0	0.25	3	2	X		X			X				X
V-STRM-MAIN-PIPE	Storm sewer piping	STRAFX	0.25	6	5	X		X			X			X	X
V-STRM-MHOL	Manholes	0	0.25	1	3	X		X			X				X
V-STRM-POND	Retention ponds, lagoons, watersheds, and basins	0	0.25	3	2	X		X			X				X
V-STRM-ROOF	Roof drain line	0	0.25	3	2						X				X
V-STRM-SERV-PIPE	Storm sewer service piping	0	0.25	1	3	X		X			X				X
V-STRM-SIGN	Surface markers/signs	0	0.25	1	3						X				X
V-STRM-STNS-PUMP	Pump stations	0	0.25	6	5						X				X
V-STRM-SUBS-PIPE	Subsurface drain piping	0	0.25	3	2						X				X
Survey															
V-SURV-DATA	Survey data (benchmarks and horizontal control points or monuments)	0	0.25	6	5	X	X	X							X
V-SURV-IDEN	Survey, baseline, and control line annotation	0	0.25	6	5	X	X	X							X
V-SURV-LINE	Survey, baseline, and control line	2	0.25	4	7	X	X	X							X
V-SURV-SYMB	Survey line symbol (PIs)	0	0.35	2	4	X	X	X							X
Taxiways															
V-TAXI-CNTR	Centerlines	7	0.18	1	3	X									
V-TAXI-CNTR-IDEN	Centerline annotation	0	0.25	2	4	X									
V-TAXI-CNTR-MRKG	Centerline markings	0	0.18	1	3	X									
V-TAXI-EDGE	Edge markings	0	0.25	4	7	X									
V-TAXI-HOLD	Holding lines	0	0.25	2	4	X									
V-TAXI-IDEN	Taxiway - annotation	0	0.25	2	4	X								X	X
V-TAXI-OTLN	Taxiway - outlines	0	0.25	4	7	X								X	X
V-TAXI-SHLD	Shoulders with annotation	0	0.25	2	4	X									
Topography															
V-TOPO-BKLN	Breaklines	4	0.35	7	0	X	X								X
V-TOPO-BKLN-COMM	Subsurface utilities communications breakline	COMUGX	0.35	7	0	X	X								X
V-TOPO-BKLN-DOMW	Subsurface utilities water breakline	WATRFX	0.35	7	0	X	X								X
V-TOPO-BKLN-ELEC	Subsurface utilities electric breakline	EPUGX	0.35	7	0	X	X								X
V-TOPO-BKLN-FUEL	Subsurface utilities liquid fuel breakline	LIQPET	0.35	7	0	X	X								X
V-TOPO-BKLN-NGAS	Subsurface utilities natural gas breakline	NTGASX	0.35	7	0	X	X								X
V-TOPO-BKLN-SSWR	Subsurface utilities sanitary sewer breakline	SSWAFX	0.35	7	0	X	X								X
V-TOPO-BKLN-STRM	Subsurface utilities storm sewer breakline	STRAFX	0.35	7	0	X	X								X
V-TOPO-BNDY-EXTR	Surface exterior boundary	0	0.18	3	2	X	X								X
V-TOPO-BNDY-INTR	Surface interior boundary	2	0.18	1	3	X	X								X
V-TOPO-BORE	Boring locations and text	0	0.25	6	5	X	X								X
V-TOPO-COOR	Coordinate grid text annotation	0	0.25	122	23	X	X								X
V-TOPO-COOR-LALO	Latitude and longitude grid ticks	0	0.18	3	2	X	X								X
V-TOPO-COOR-STAT	State Plane coordinate ticks	0	0.18	3	2	X	X								X
V-TOPO-COOR-UTM	UTM coordinate ticks	0	0.18	3	2	X	X								X

Discipline: Survey/Mapping

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Survey and Mapping Plan	Existing Hydrographic Survey & Mapping Plan	Property Boundary	Existing Electrical Utilities Plan	Existing Communication System Plan	Existing Utilities Plan	Existing HTCW Utilities Plan	Existing Airfield Lighting Plan	Existing Profiles	Existing X-Sections
V-TOPO-DTMO	DTM obscure area boundary	0	0.25	6	5	X	X								X
V-TOPO-DTMP	DTM points	0	0.25	6	5	X	X								X
V-TOPO-DTMT	DTM triangles	0	0.25	22	22	X	X								X
V-TOPO-MAJR	Major contours	0	0.25	2	4	X	X								X
V-TOPO-MAJR-IDEN	Major contours - annotation	0	0.25	2	4	X	X								X
V-TOPO-MINR	Minor contours	0	0.18	3	2	X	X								X
V-TOPO-MINR-IDEN	Minor contours - annotation	0	0.18	3	2	X	X								X
V-TOPO-PERI	Surface perimeter	0	0.18	3	2	X	X								X
V-TOPO-SHAP	Application generated shapes/lines	0	0.18	1	3										X
V-TOPO-SHOR	Shorelines, land features, and references	0	0.25	4	7	X	X								X
V-TOPO-SLOP-FILL	Cut/fill slopes	0	0.25	2	4	X	X								X
V-TOPO-SLOP-IDEN	Cut/fill slope, top/toe slope annotation	0	0.25	2	4	X									X
V-TOPO-SLOP-TOPT	Top/toe slopes	0	0.25	6	5	X									X
V-TOPO-SOUN	Soundings and overbanks	0	0.18	V	V		X								X
V-TOPO-SPOT	Spot elevations	0	0.25	2	4	X	X								X
V-TOPO-VOID	Surface void region	0	0.18	1	3	X	X								X
V-TOPO-WATR	Water level reference (e.g., LWRP, after-grading LWRP, SWP, etc.)	0	0.35	V	V	X	X								X
Airfield Traffic Areas															
V-TRAF-IDEN	Airfield traffic area annotation	0	0.25	2	4	X									
V-TRAF-TYPA	Type A traffic area	4	0.35	4	7	X									
V-TRAF-TYPB	Type B traffic area	6	0.35	4	7	X									
V-TRAF-TYPC	Type C traffic area	1	0.35	4	7	X									
Wetlands															
V-WETL-BOGS	Bogs	0	0.25	6	5	X									X
V-WETL-FENS	Fens	0	0.25	2	4	X									X
V-WETL-IDEN	Wetland annotation	0	0.25	2	4	X									X
V-WETL-MRSH	Fresh water marshes	0	0.25	162	33	X									X
V-WETL-MRSH-SALT	Tidal saltwater marshes	0	0.25	162	33	X									X
V-WETL-MRSH-TIDL	Tidal freshwater marsh	0	0.25	162	33	X									X
V-WETL-PCSN	Pocosins	0	0.25	6	5	X									X
V-WETL-PHOL	Vernal pools, playas, prairie potholes, wet meadows, and wet prairies	0	0.25	6	5	X									X
V-WETL-RPRN	Riparian forested wetlands	0	0.25	162	33	X									X
V-WETL-SLGH	Sloughs	0	0.25	162	33	X									X
V-WETL-SWMP	Swamps	0	0.25	162	33	X									X
Sections															
V-SECT-IDEN	Component identification numbers	0	0.35	2	4										X
V-SECT-MBND	Material beyond section cut	0	0.18	5	1										X
V-SECT-MCUT	Material cut by section	0	0.50	4	7										X
V-SECT-PATT	Textures and hatch patterns	0	0.18	8	9										X

Note: V = Varies, NA = Not Applicable

Discipline: Geotechnical

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types					
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Subsurface Investigation Plan	Boring Log	Joint Layout Plan *	Pavement Site Plan	Sections	Details
AIA Format	Level/Layer Description										
General Information											
B-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X		X	X	X	X
B-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X		X	X	X	X
B-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X
B-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X
B-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X		X	X
B-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X
B-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X		X	X	X	X
B-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X		X	X	X	X
B-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X
Buildings											
B-BLDG-FTPT	Building footprints	0	0.50	7	0	X		X	X		
B-BLDG-IDEN	Building and other structure annotation	0	0.25	2	4	X		X	X		
Geophysical Borings											
B-BORE-CONE	Cone penetrometer test location	0	0.35	162	33	X					
B-BORE-HOLE	Geophysical boring locations	0	0.35	162	33	X					
B-BORE-IDEN	Geophysical location identification	0	0.35	2	4	X					
B-BORE-LINE	Geophysical transect lines	0	0.50	4	7	X					
B-BORE-PUSH	Direct push test location	0	0.35	162	33	X					
B-BORE-STRK	Geophysical strike line	0	0.35	162	33	X					
Consolidation Curve											
B-CONS-DATA	Consolidation curve data	0	0.25	6	5	X					
B-CONS-DATA-TEXT	Consolidation curve data text	0	0.25	6	5	X					
B-CONS-FRAM	Consolidation curve frame	0	0.50	4	7	X					
B-CONS-GRID	Consolidation curve grid	0	0.25	1	3	X					
B-CONS-GRID-TEXT	Consolidation curve grid text	0	0.25	2	4	X					
Excavations											
B-EXCV-EXST	Existing excavation	2	0.25	1	3	X		X	X		
B-EXCV-FUTR	Future excavation	1	0.35	5	1	X		X	X		
B-EXCV-PROP	Proposed excavation	0	0.35	3	2	X		X	X		
Grouting											
B-GROU-ALGN	Grout hole alignments	4	0.25	2	4	X					
B-GROU-HOLE	Borehole made specifically for grouting	0	0.35	8	9	X					
B-GROU-PRIM	Primary grout holes	0	0.35	3	2	X					
B-GROU-QUAT	Quaternary grout holes	0	0.35	4	7	X					
B-GROU-SECD	Secondary grout holes	0	0.35	1	3	X					
B-GROU-TERT	Tertiary grout holes	0	0.35	5	1	X					
Water Content											
B-H2OC-ATTB-DATA	Water content Atterberg limits	0	0.25	3	2	X					
B-H2OC-ATTB-TEXT	Water content Atterberg limits text	0	0.25	3	2	X					
B-H2OC-GRID-MAJR	Water content major grid	0	0.25	1	3	X					
B-H2OC-GRID-MINR	Water content minor grid	1	0.18	8	9	X					
B-H2OC-GRID-TEXT	Water content grid text	0	0.25	2	4	X					
B-H2OC-MOIS-DATA	Water content moisture content points and lines	0	0.25	6	5	X					
B-H2OC-MOIS-TEXT	Water content moisture content text	0	0.25	6	5	X					
Instrumentation											
B-INST-EXTN	Extensometers	0	0.35	200	13	X					

Discipline: Geotechnical

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types					
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Subsurface Investigation Plan	Boring Log	Joint Layout Plan *	Pavement Site Plan	Sections	Details
AIA Format	Level/Layer Description										
B-INST-EXTN-IDEN	Extensometer identification	0	0.35	200	13	X					
B-INST-GAGE	Pressure gages	0	0.35	200	13	X					
B-INST-GAGE-IDEN	Pressure gage identification	0	0.35	200	13	X					
B-INST-INCL	Inclinometers	0	0.35	200	13	X					
B-INST-INCL-IDEN	Inclinometer identification	0	0.35	200	13	X					
B-INST-SETL	Settlement monuments	0	0.35	200	13	X					
B-INST-SETL-IDEN	Settlement monument identification	0	0.35	200	13	X					
Joints											
B-JNTS-CNTJ-LONG	Construction joints - longitudinal	0	0.35	6	5			X			
B-JNTS-CNTJ-TRAV	Construction joints - transverse	0	0.35	6	5			X			
B-JNTS-CTRJ-LONG	Contraction joints - longitudinal	0	0.35	2	4			X			
B-JNTS-CTRJ-TRAV	Contraction joints - transverse	0	0.35	2	4			X			
B-JNTS-EDGE	Thickened edges	0	2.00	4	7			X			
B-JNTS-EXPJ	Expansion joints	0	0.35	12	27			X			
Logs											
B-LOGS-FDTA	Field data	0	0.25	3	2		X				
B-LOGS-FORM	Bore log form	0	V	V	V		X				
B-LOGS-FRAM	Frame for boring log and associated test data	0	0.50	4	7		X				
B-LOGS-FRAM-TEXT	Text associated with boring log frame	0	0.25	2	4		X				
B-LOGS-LDTA	Laboratory data	0	0.25	1	3		X				
B-LOGS-PATT	Soil/rock patterns	0	0.18	8	9		X				
Monitoring Points											
B-MONP-SEEP	Seepage monitoring point	0	0.35	5	1	X					
B-MONP-WEIR	Weirs	0	0.35	4	7	X					
Normal Stress											
B-NORM-DATA	Normal stress data	0	0.25	6	5	X					
B-NORM-DATA-TEXT	Normal stress data text	0	0.25	6	5	X					
B-NORM-GRID-MAJR	Normal stress major grid	0	0.25	1	3	X					
B-NORM-GRID-MINR	Normal stress minor grid	1	0.18	8	9	X					
B-NORM-GRID-TEXT	Normal stress grid text	0	0.25	2	4	X					
Plasticity Chart											
B-PLAS-DATA	Plasticity chart data	0	0.25	6	5	X					
B-PLAS-DATA-TEXT	Plasticity chart data text	0	0.25	6	5	X					
B-PLAS-FRAM	Plasticity chart frame	0	0.50	4	7	X					
B-PLAS-GRID	Plasticity chart grid	0	V	V	V	X					
B-PLAS-GRID-TEXT	Plasticity chart grid text	0	V	V	V	X					
Pavements											
B-PVMT-MISM	Mismatched pavement joint	0	0.35	6	5				X		
B-PVMT-OTLN-AGSC	Outline - aggregate surface course and gravel	0	0.35	195	13				X		
B-PVMT-OTLN-HMAC	Outline - hot mix, asphaltic concrete	0	0.35	6	5				X		
B-PVMT-OTLN-PCCP	Outline - Portland cement, concrete pavement	0	0.35	2	4				X		
B-PVMT-PATT-AGSC	Pattern - aggregate surface course and gravel	0	0.18	8	9				X		
B-PVMT-PATT-HMAC	Pattern - hot mix, asphaltic concrete	0	0.18	8	9				X		
B-PVMT-PATT-PCCP	Pattern - Portland cement, concrete pavement	0	0.18	8	9				X		
B-PVMT-REIN	Reinforced pavement	0	0.35	6	5				X		
Sample Locations											
B-SAMP-AUGR	Auger sample location	0	0.35	17	67	X					

Discipline: Geotechnical

Model File Layers/Levels

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AIA Format	Level/Layer Description										
B-SAMP-CORE	Core sample location	0	0.35	17	67	X					
B-SAMP-DRVE	Drive sample (shelby split spoon) location	0	0.35	17	67	X					
B-SAMP-GRAB	Grab sample location	0	0.35	17	67	X					
B-SAMP-IDEN	Sample location identification	0	0.35	2	4	X					
B-SAMP-PERC	Percolation test hole	0	0.50	83	42	X					
B-SAMP-PITS	Test pit sample location	0	0.50	83	42	X					
B-SAMP-VERT	Vertical core hole location	0	0.35	122	23	X					
B-SAMP-WASH	Wash bored hole location	0	0.35	122	23	X					
Shear Strength vs. Normal Stress											
B-SSNS-DATA	Shear strength vs. normal stress data	0	0.25	6	5	X					
B-SSNS-DATA-TEXT	Shear strength vs. normal stress data text	0	0.25	6	5	X					
B-SSNS-FRAM	Shear strength vs. normal stress frame	0	0.50	4	7	X					
B-SSNS-GRID	Shear strength vs. normal stress grid	0	0.25	1	3	X					
B-SSNS-GRID-TEXT	Shear strength vs. normal stress grid text	0	V	2	4	X					
Shear Strength											
B-SSTR-1TST-DATA	Shear strength 1 Point Q test data	0	0.25	4	7	X					
B-SSTR-1TST-TEXT	Shear strength 1 Point Q test text	0	0.25	4	7	X					
B-SSTR-GRID-MAJR	Shear strength major grid	0	0.25	1	3	X					
B-SSTR-GRID-MINR	Shear strength minor grid	1	0.18	8	9	X					
B-SSTR-GRID-TEXT	Shear strength grid text	0	0.25	2	4	X					
B-SSTR-QTST-DATA	Shear strength Q test data	0	0.25	6	5	X					
B-SSTR-QTST-TEXT	Shear strength Q test text	0	0.25	6	5	X					
B-SSTR-RTST-DATA	Shear strength R test data	0	0.25	2	4	X					
B-SSTR-RTST-TEXT	Shear strength R test text	0	0.25	2	4	X					
B-SSTR-STST-DATA	Shear strength S test data	0	0.25	5	1	X					
B-SSTR-STST-TEXT	Shear strength S test text	0	0.25	5	1	X					
B-SSTR-UTST-DATA	Shear strength UCT test data	0	0.25	3	2	X					
B-SSTR-UTST-TEXT	Shear strength UCT test text	0	0.25	3	2	X					
B-SSTR-VTST-DATA	Shear strength Vane shear test data	0	0.25	7	0	X					
B-SSTR-VTST-TEXT	Shear strength Vane shear test text	0	0.25	7	0	X					
Tabular Test											
B-TABT-DATA	Tabular test data	0	0.25	6	5	X					
B-TABT-DATA-TEXT	Tabular test data text	0	0.25	6	5	X					
B-TABT-FRAM	Tabular test data frame	0	0.50	4	7	X					
B-TABT-GRID	Tabular test data grid	0	0.25	1	3	X					
B-TABT-GRID-TEXT	Tabular test data grid text	0	V	2	4	X					
Wells											
B-WELL-ASR-	ASR wells	0	0.35	82	18	X					
B-WELL-HORZ	Horizontal drain	0	0.35	82	18	X					
B-WELL-MONT	Monitoring wells	0	0.35	82	18	X					
B-WELL-PIZO	Piezometers	0	0.35	82	18	X					
B-WELL-VERT	Vertical drain	0	0.35	82	18	X					
Wet Density											
B-WETD-DATA	Wet density data	0	0.25	6	5	X					
B-WETD-DATA-TEXT	Wet density data text	0	0.25	6	5	X					
B-WETD-GRID-MAJR	Wet density major grid	0	0.25	1	3	X					
B-WETD-GRID-MINR	Wet density minor grid	1	0.18	8	9	X					

Discipline: Geotechnical

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types					
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AIA Format	Level/Layer Description										
B-WETD-GRID-TEXT	Wet density grid text	0	0.25	2	4	X					
Sections											
B-SECT-IDEN	Component identification numbers	0	0.35	2	4					X	
B-SECT-MBND	Material beyond section cut	0	0.18	5	1					X	
B-SECT-MCUT	Material cut by section	V	V	V	V					X	
B-SECT-PATT	Textures and hatch patterns	0	0.18	8	9					X	
B-SECT-SLOG	Stick log graphics	0	0.35	3	2					X	
B-SECT-STRA	Stratigraphy	0	0.18	8	9					X	
Detail Information											
B-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V						X

Note: V = Varies, NA = Not Applicable

* = Check to see if a Civil Joint Layout Plan has been developed, to avoid duplication

Discipline: Civil
Model File Layers/Levels

Level/Layer Naming	Level/Layer Description	Graphic Defaults				Model File Types													
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Site Plan	Grading Plan	Eco-Restoration Plan	Beach Renourishment Plan	Navigation/Dredging Plan	Flood Control Plan	Transportation Site Plan	Joint Layout Plan	Airfield Plan	Utilities Plan	Profiles	Elevations	X-Sections	Details
AIA Format	Level/Layer Description																		
General Information																			
C-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X
C-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Alignments																			
C-ALGN-DATA	Alignment coordinates and curve data	0	0.35	3	2	X	X			X		X		X	X	X			
C-ALGN-LINE	Alignments	4	0.35	2	4	X	X	X	X	X	X			X	X	X			
C-ALGN-MAJR	Alignment major stationing and tick marks	0	0.35	1	3	X	X			X		X		X	X				
C-ALGN-MARK	Alignment tick marks	0	0.35	3	2	X	X					X		X	X	X			
C-ALGN-MINR	Alignment minor stationing and tick marks	0	0.18	6	5	X	X			X		X		X	X				
C-ALGN-STAT	Alignment stationing and tick marks, alignment PI stations	0	0.35	3	2	X	X			X		X		X	X	X			
C-ALGN-SYMB	Alignment symbols (PIs)	0	0.35	6	5	X	X			X		X		X	X	X			
C-ALGN-TEXT	Alignment text, annotation with associated leaders	0	0.35	2	4	X	X	X	X	X	X			X	X	X			
Aprons																			
C-APRN-CNTR	Apron centerlines	7	0.25	1	3									X					
C-APRN-CNTR-IDEN	Apron centerline annotation	0	0.35	2	4									X					
C-APRN-GRND	Grounding points	0	0.35	2	4									X					
C-APRN-HOLD	Holding position markings	0	0.25	1	3									X					
C-APRN-IDEN	Airfield apron - annotation	0	0.35	2	4									X		X		X	
C-APRN-MOOR	Mooring points	0	0.35	2	4									X					
C-APRN-MRKG	Apron markings	0	0.50	4	7									X					
C-APRN-OTLN	Airfield apron - outlines	0	0.50	4	7									X		X		X	
C-APRN-SECU	Security zone markings	0	0.25	1	3									X					
C-APRN-SHLD	Shoulders with annotation	0	0.35	2	4									X					
C-APRN-SHLD-MRKG	Shoulder stripes	0	0.35	2	4									X					
Beach Renourishment																			
C-BECH-BANK-TOP~	Beach top of bank	0	0.25	6	5			X	X										
C-BECH-BKLN	Beach breakline	2	0.35	5	1			X	X										
C-BECH-BLIN	Beach baseline and control line	0	0.50	4	7			X	X										
C-BECH-BLIN-IDEN	Beach baseline and control line annotation	0	0.25	4	7			X	X										
C-BECH-BNCH	Beach bench	6	0.35	22	22			X	X										
C-BECH-CNTR	Beach centerline	7	0.25	5	1			X	X										
C-BECH-CNTR-IDEN	Beach centerline annotation	0	0.25	6	5			X	X										
C-BECH-ELIN	Beach erosion control line	0	0.50	4	7			X	X										
C-BECH-ELIN-IDEN	Beach erosion control line annotation	0	0.25	6	5			X	X										
C-BECH-LIMT	Beach limit lines	0	0.50	4	7			X	X										
C-BECH-OHWM	Ordinary high water marks	0	0.35	2	4			X	X										
C-BECH-OTLN	Beach outline	0	0.25	2	4			X	X										
C-BECH-SLOP-IDEN	Beach slope indicator with annotation	0	0.25	7	0			X	X										
C-BECH-SLOP-TOP~	Beach top of slope	2	0.35	22	22			X	X										
C-BECH-SYMB	Beach symbols	0	0.18	6	5			X	X										
C-BECH-TOE~	Beach toe	3	0.50	5	1			X	X										
C-BECH-TOE~IDEN	Beach toe annotation	0	0.25	7	0			X	X										
Buildings and Primary Structures																			
C-BLDG-DECK	Outdoor decks (attached, no roof overhead)	0	0.50	4	7	X	X	X	X	X	X								
C-BLDG-DOCK	Loading docks	0	0.50	4	7	X	X	X	X	X	X								

Discipline: Civil
Model File Layers/Levels

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		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Site Plan	Grading Plan	Eco-Restoration Plan	Beach Renourishment Plan	Navigation/Dredging Plan	Flood Control Plan	Transportation Site Plan	Joint Layout Plan	Airfield Plan	Utilities Plan	Profiles	Elevations	X-Sections	Details
AIA Format	Level/Layer Description																		
C-BLDG-FTPT	Building footprints	0	0.70	7	0	X	X	X	X	X	X					X		X	
C-BLDG-IDEN	Building and other stucture annotation	0	0.35	2	4	X	X	X	X	X	X					X		X	
C-BLDG-OVHD	Building overhangs	0	0.50	4	7	X	X	X	X	X	X								
C-BLDG-PRCH	Porches (attached, roof overhead)	0	0.50	4	7	X	X	X	X	X	X								
Borrow Areas																			
C-BORW-IDEN	Borrow/spoil area annotation	0	0.35	2	4	X	X		X	X	X								
C-BORW-LINE	Borrow/spoil area	2	0.35	2	4	X	X		X	X	X								
Bridges																			
C-BRDG-CHRD-LOW~	Low chord	0	0.50	4	7												X		X
C-BRDG-CNTR	Bridge centerlines	7	0.25	1	3	X				X	X	X							
C-BRDG-CTLJ	Control joints	0	0.25	4	7	X				X	X	X							
C-BRDG-DECK	Bridge deck	0	0.50	4	7	X				X	X	X				X		X	
C-BRDG-IDEN	Bridge annotation	0	0.35	2	4	X				X	X	X							
C-BRDG-OTLN	Bridge outlines	0	0.50	4	7	X				X	X	X							
C-BRDG-RLG~	Bridge railing	0	0.25	4	7	X				X	X	X				X		X	
Channels																			
C-CHAN-BANK-IDEN	Channel/canal top of bank annotation	0	0.35	2	4	X				X	X								
C-CHAN-BANK-TOP~	Channel/canal top of bank	0	0.35	2	4	X				X	X					X		X	
C-CHAN-BNCH	Channel/canal bench design feature lines (breaklines form DTMs)	0	0.35	2	4	X				X	X					X		X	
C-CHAN-BWTR	Breakwaters	0	0.35	6	5	X				X	X								
C-CHAN-CNTR	Channel centerline and survey report lines	7	0.25	5	1	X				X	X					X		X	
C-CHAN-CNTR-IDEN	Channel centerline and survey report lines - annotation	0	0.35	5	1	X				X	X								
C-CHAN-DACL	De-authorized channel limits, anchorages, etc.	0	0.35	3	2	X				X	X								
C-CHAN-DACL-IDEN	De-authorized channel limits, anchorages, etc. - annotation	0	0.35	3	2	X				X	X								
C-CHAN-DOCK	Docks, decks, floats, piers, and mooring facilities	0	0.35	6	5	X				X	X								
C-CHAN-LIMIT	Channel limits, anchorages, turning basins, disposal areas, etc.	0	0.35	6	5	X				X	X								
C-CHAN-LIMIT-IDEN	Channel limits, anchorages, turning basins, disposal areas, etc. - annotation	0	0.35	6	5	X				X	X								
C-CHAN-NAID	Navigation aids and text	0	0.35	V	V	X			X	X	X								
C-CHAN-SLOP-LINE	Channel cut/fill slope (Indicates cut and fill lines)	0	0.35	2	4	X			X	X	X								
C-CHAN-SPOL	Spoil limits	0	0.50	4	7	X				X	X								
C-CHAN-SYMB	Channel/canal symbols	0	0.35	6	5	X				X	X								
C-CHAN-TEXT	Channel/canal text, annotation with associated leaders	0	0.35	2	4	X				X	X								
C-CHAN-TOE~	Channel/canal toe	3	0.50	5	1	X				X	X					X		X	
C-CHAN-TOE~-IDEN	Channel/canal toe annotation	0	0.35	6	5	X				X	X								
C-CHAN-TURN	Turning points	0	0.35	2	4	X				X	X								
C-CHAN-WIDE	Channel/canal widener	3	0.50	4	7	X				X	X								
Domestic Water																			
C-DOMW-DEVC	Connectors, faucets, reducers, regulators, vents, intake points, taps, backflow preventers, and valves	0	0.35	6	5					X	X				X				
C-DOMW-FIRE	Fire lines	FIRE	0.35	1	3					X	X				X				
C-DOMW-FTTG	Caps, cleanouts, crosses, and tees	0	0.35	6	5					X	X				X				
C-DOMW-HYDT	Hydrants	0	0.35	1	3	X				X	X				X	X		X	
C-DOMW-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X				X	X				X	X		X	
C-DOMW-MAIN-PIPE	Main domestic water piping	WATERL	0.35	6	5	X				X	X				X	X		X	
C-DOMW-METR	Meters	0	0.35	3	2					X	X				X				
C-DOMW-NPW~-HYDT	Non-potable hydrants/flushing hydrants	0	0.35	1	3					X	X				X				
C-DOMW-NPW~-PIPE	Non-potable water piping	NONPOT	0.35	6	5					X	X				X				
C-DOMW-PITS-VENT	Vent pits	0	0.35	3	2					X	X				X				
C-DOMW-PITS-VALV	Valve pits/vaults	0	0.35	3	2					X	X				X	X		X	
C-DOMW-SERV-PIPE	Domestic water service piping	0	0.35	6	5					X	X				X				
C-DOMW-SIGN	Surface markers/signs	0	0.35	1	3					X	X				X				
C-DOMW-STNS-PUMP	Booster pump stations	0	0.35	6	5	X				X	X				X				
C-DOMW-STNS-REDC	Pressure reducing stations	0	0.35	6	5	X				X	X				X				
C-DOMW-TANK	Water storage tanks	0	0.35	1	3	X				X	X				X				

Discipline: Civil
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
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AIA Format	Level/Layer Description																		
C-DOMW-WELL	Water well houses	0	0.35	1	3	X					X								
Dredging																			
C-DRED-IDEN	Dredging annotation	0	0.35	2	4	X			X	X	X								
C-DRED-LIMT	Dredge limit lines	0	0.50	4	7	X			X	X	X								
C-DRED-OHWM	Ordinary high water marks	0	0.35	2	4	X			X	X	X								
Ditches or Washes																			
C-DTCH-BOTM	Bottom of ditch or wash	6, DITCH	0.25	5	1	X					X								
C-DTCH-CNTR	Centerline of ditch or wash	7	0.25	5	1	X					X								
C-DTCH-EWAT	Edge of water	0	0.25	4	7	X					X								
C-DTCH-IDEN	Ditches and washes annotation	0	0.35	3	2	X					X								
C-DTCH-TOP~	Top of ditch or wash	0	0.25	3	2	X					X								
Habitats/Landforms																			
C-ECCO-BURR	Burrow	0	0.50	4	7			X											
C-ECCO-DENS	Den	0	0.50	4	7			X											
C-ECCO-GATR	Gator hole	2	0.35	6	5			X											
C-ECCO-HUMK	Hummocks	0	0.35	6	5			X											
C-ECCO-IDEN	Habitat annotation	0	0.35	2	4			X											
C-ECCO-NEST	Nest, nesting tree	0	0.50	4	7			X											
C-ECCO-PRCH	Perch/nesting hole	0	0.50	4	7			X											
Erosion and Sediment Control (Temporary/Construction)																			
C-EROS-CIPR	Culvert inlet protection	V	0.25	3	2	X	X				X								
C-EROS-CNTE	Construction entrance	V	0.35	6	5	X	X				X								
C-EROS-DDIV	Drainage divides	0	0.50	4	7	X	X				X								
C-EROS-DVDK	Diversion dike	0	0.50	4	7	X	X				X								
C-EROS-IDEN	Erosion and sediment control annotation	0	0.35	3	2	X	X				X								
C-EROS-INPR	Inlet protection	V	0.25	3	2	X	X				X								
C-EROS-SILT	Silt fence	SILT	0.35	2	4	X	X				X								
C-EROS-SILT-CHCK	Silt check	0	0.35	2	4	X	X				X								
C-EROS-SILT-TRAP	Silt trap	0	0.35	2	4	X	X				X								
C-EROS-SSLT	Super silt fence	SSILT	0.35	2	4	X	X				X								
Flood Hazard Area																			
C-FLHA-025Y	25 year mark	6	0.35	6	5	X					X								
C-FLHA-050Y	50 year mark	3	0.35	2	4	X					X								
C-FLHA-100Y	100 year mark	0	0.35	6	5	X					X								
C-FLHA-200Y	200 year mark	2	0.35	2	4	X					X								
C-FLHA-500Y	500 year mark	7	0.35	6	5	X					X								
C-FLHA-IDEN	Flood hazard area annotation	0	0.35	2	4	X					X								
Floodwalls																			
C-FLOD-BASE	Floodwall base of wall	0	0.50	20	6	X					X								
C-FLOD-BASE-IDEN	Floodwall base of wall annotation	0	0.35	20	6	X					X								
C-FLOD-CNTR	Floodwall centerline	7	0.25	20	6	X					X								X
C-FLOD-CNTR-IDEN	Floodwall centerline annotation	0	0.35	20	6	X					X								X
C-FLOD-DRNS	Floodwall toe drain	0	0.35	6	5	X					X					X			X
C-FLOD-DRNS-IDEN	Floodwall toe drain annotation	0	0.35	6	5	X					X					X			X
C-FLOD-PILE	Floodwall sheet piling	0	0.50	22	22	X					X					X			X
C-FLOD-PILE-IDEN	Floodwall sheet piling annotation	0	0.35	22	22	X					X					X			X
C-FLOD-TOE~	Floodwall toe outline	0	0.35	4	7	X					X					X			X
C-FLOD-TOP~	Floodwall top of wall	0	0.50	2	4	X					X					X			X
C-FLOD-TOP~-IDEN	Floodwall top of wall annotation	0	0.35	20	6	X					X					X			X
Liquid Fuel																			
C-FUEL-BERM	Berms for retaining fuel in case of major tank/line rupture	0	0.35	6	5										X				
C-FUEL-DEFL-PIPE	Defueling piping	0	0.35	6	5										X				

Discipline: Civil
Model File Layers/Levels

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C-FUEL-DEVC	Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves	0	0.35	6	5										X				
C-FUEL-FLOW	Flow direction arrows	0	0.35	6	5										X				
C-FUEL-FTTG	Caps, crosses, and tees	0	0.35	6	5										X				
C-FUEL-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X				X					X	X		X	
C-FUEL-JBOX	Junction boxes, manholes, handholes, test boxes	0	0.35	1	3										X				
C-FUEL-MAIN-PIPE	Main fuel piping	LIQPET	0.35	6	5					X					X	X		X	
C-FUEL-METR	Meters	0	0.35	3	2										X				
C-FUEL-PITS-HYDT	Hydrant control pits	0	0.35	3	2					X					X	X		X	
C-FUEL-PITS-VENT	Vent pits	0	0.35	3	2										X				
C-FUEL-PITS-VALV	Valve pits	0	0.35	3	2					X					X	X		X	
C-FUEL-SERV-PIPE	Service piping	0	0.35	6	5										X				
C-FUEL-STNS-PUMP	Booster pump stations	0	0.35	6	5										X				
C-FUEL-TANK	Fuel tanks	0	0.35	3	2	X									X	X		X	
C-FUEL-TRCH	Fuel line trench	0	0.35	3	2										X				
Grade Linework																			
C-GRAD-ALOW	Allowable over depth	0	0.35	6	5					X								X	
C-GRAD-BNCH	Bench cut	0	0.35	6	5											X		X	
C-GRAD-DSGN	Design grade (proposed)	0	0.35	3	2	X		X	X	X	X					X		X	
C-GRAD-EXCV	Excavation grade	0	0.50	4	7											X		X	
C-GRAD-EXST	Existing grade, ground line	3	0.35	6	5	X		X	X	X	X					X	X	X	
C-GRAD-FNSH	Finished grade	0	0.50	4	7	X				X	X					X		X	
C-GRAD-FNSH-PRP1	Proposed Surface #1	0	0.35	8	9	X				X	X					X		X	
C-GRAD-FNSH-PRP2	Proposed Surface #2	0	0.35	8	9	X				X	X					X		X	
C-GRAD-FNSH-PRP3	Proposed Surface #3	0	0.35	8	9	X				X	X					X		X	
C-GRAD-FNSH-PRP4	Proposed Surface #4	0	0.35	8	9	X				X	X					X		X	
C-GRAD-GTXL	Geotextile placement grade	0	0.25	1	3	X				X	X					X		X	
C-GRAD-IDEN	Grade annotation for cross sections and profiles	0	0.35	2	4	X				X	X					X		X	
C-GRAD-REQD	Required depth	0	0.35	6	5					X								X	
C-GRAD-SCLN	Stability control line	7	0.50	5	1	X				X	X					X		X	
C-GRAD-WATR	Water surface in section view	0	0.35	2	4	X				X	X					X		X	
Grid Lines																			
C-GRID-FRAM	Frame	0	0.50	4	7											X		X	
C-GRID-MAJR	Major grid lines	1	0.35	8	9											X		X	
C-GRID-MINR	Minor grid lines	1	0.18	8	9													X	
C-GRID-TEXT	Border text, annotation	1	0.35	2	4											X		X	
Heliports																			
C-HELI-BLST	Blast pad and stopway markings	0	0.35	1	3									X		X		X	
C-HELI-CNTR	Centerline markings	0	0.35	1	3									X					
C-HELI-DISP	Displaced threshold markings	0	0.35	1	3									X					
C-HELI-DIST	Fixed distance markings	0	0.35	1	3									X					
C-HELI-IDEN	Heliport numbers and letters	0	0.35	2	4									X		X		X	
C-HELI-SHLD	Shoulder markings	0	0.35	6	5									X					
C-HELI-SIDE	Side stripes	0	0.50	4	7									X					
C-HELI-TDZM	Touchdown zone markers	0	0.35	6	5									X					
C-HELI-THRS	Threshold markers	0	0.35	6	5									X					
Industrial Waste Water																			
C-INDW-DEVC	Grit chambers, meters, flumes, neutralizers, oil/water separators, ejectors, tanks, and valves	0	0.35	6	5										X				
C-INDW-FLOW	Flow direction arrows	0	0.35	6	5										X				
C-INDW-FTTG	Caps and cleanouts	0	0.35	6	5										X				
C-INDW-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X				X	X				X	X		X	
C-INDW-JBOX	Junction boxes and manholes	0	0.35	1	3										X				
C-INDW-LAGN	Lagoons	0	0.35	6	5										X				

Discipline: Civil
Model File Layers/Levels

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AIA Format	Level/Layer Description																		
C-INDW-MAIN-PIPE	Main industrial waste water piping	IWASTE	0.35	6	5	X				X					X	X		X	
C-INDW-PLNT	Treatment plants	0	0.35	6	5										X				
C-INDW-SERV-PIPE	Industrial waste water service piping	0	0.35	1	3										X				
C-INDW-SIGN	Surface markers/signs	0	0.35	1	3										X				
C-INDW-STNS-LIFT	Lift stations	0	0.35	6	5										X				
Irrigation																			
C-IRRG-EQPM	Irrigation equipment (e.g., controllers, valves, etc.)	0	0.35	6	5	X		X							X				
C-IRRG-IDEN	Irrigation annotation	0	0.35	2	4	X		X							X	X	X	X	X
C-IRRG-PIPE	Irrigation piping	0	0.35	6	5	X		X							X	X	X	X	X
C-IRRG-WELL	Irrigation wells	0	0.25	3	2										X				
Joints																			
C-JNTS-CNSL	Construction joints - longitudinal	0	0.35	6	5								X						
C-JNTS-CNST	Construction joints - transverse	0	0.35	6	5								X						
C-JNTS-CNTL	Contraction joints - longitudinal	0	0.35	2	4								X						
C-JNTS-CNTT	Contraction joints - transverse	0	0.35	2	4								X						
C-JNTS-EDGE	Thickened edges	0	0.35	4	7								X						
C-JNTS-EXPJ	Expansion joints	0	0.35	12	27								X						
C-JNTS-IDEN	Joint annotation	0	0.35	2	4								X						
Levees																			
C-LEVE-BANK-IDEN	Levee top of bank annotation	0	0.25	20	6	X				X	X								
C-LEVE-TOPB	Levee top of bank	0	0.35	2	4	X				X	X					X		X	
C-LEVE-BERM	Levee berm outline	0	0.35	6	5	X				X	X					X		X	
C-LEVE-BNCH	Levee bench design feature lines (breaklines form DTMs)	0	0.35	20	6	X				X	X					X		X	
C-LEVE-BNCH-IDEN	Levee bench annotation	0	0.25	2	4	X				X	X							X	
C-LEVE-BRRW	Borrow limits	0	0.50	4	7	X				X	X							X	
C-LEVE-CNTR	Levee centerline	7	0.25	20	6	X				X	X					X		X	
C-LEVE-CNTR-IDEN	Levee centerline annotation	0	0.35	20	6	X				X	X							X	
C-LEVE-IDEN	Levee annotation	0	0.35	2	4	X				X	X							X	
C-LEVE-OTLN	Levee outline	0	0.50	4	7	X				X	X							X	
C-LEVE-SLOP	Levee slope indicator with annotation	0	0.35	2	4	X				X	X							X	
C-LEVE-STAN	Levee stationing	0	0.35	2	4	X				X	X							X	
C-LEVE-TOE~	Levee toe	2	0.35	20	6	X				X	X					X		X	
C-LEVE-TOE--IDEN	Levee toe annotation	0	0.25	20	6	X				X	X							X	
Military Ranges																			
C-MILR-BATP	Battle positions	0	0.50	4	7	X													
C-MILR-CAMS	Range cameras	0	0.35	6	5	X													
C-MILR-FOXH	Fox holes and pits	0	0.35	6	5	X													
C-MILR-MATS	Moving army targets	0	0.50	4	7	X													
C-MILR-MITS	Moving infantry targets	0	0.50	4	7	X													
C-MILR-MITS-IDEN	Moving infantry targets annotation	0	0.35	2	4	X													
C-MILR-PUTS	Pop up targets	0	0.50	4	7	X													
C-MILR-PUTS-IDEN	Pop up targets annotation	0	0.35	2	4	X													
C-MILR-SATS	Stationary army targets	0	0.50	4	7	X													
C-MILR-SATS-IDEN	Stationary army targets annotation	0	0.35	2	4	X													
C-MILR-SITS	Stationary infantry targets	0	0.50	4	7	X													
C-MILR-SITS-IDEN	Stationary infantry targets annotation	0	0.35	2	4	X													
Natural Gas																			
C-NGAS-EQPM	Equipment (pumps, motors, etc.)	0	0.35	6	5										X				
C-NGAS-FLOW	Flow direction arrows	0	0.35	6	5										X				
C-NGAS-FTTG	Caps, crosses, and tees	0	0.35	6	5										X				
C-NGAS-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X				X					X	X		X	
C-NGAS-INST	Instrumentation (meters, valves, etc.)	0	0.35	3	2										X				
C-NGAS-MHOL	Manholes	0	0.35	6	5	X				X					X	X		X	

Discipline: Civil
Model File Layers/Levels

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AIA Format	Level/Layer Description																		
C-NGAS-PIPE	Natural gas piping	NTGASN	0.35	6	5	X				X					X	X		X	
C-NGAS-PITS-VENT	Vent pits	0	0.35	3	2										X				
C-NGAS-PITS-VALV	Valve pits/boxes	0	0.35	3	2	X				X					X	X		X	
C-NGAS-SIGN	Surface markers/signs	0	0.35	1	3										X				
C-NGAS-STNS-PUMP	Compressor stations	0	0.35	6	5										X				
C-NGAS-STNS-REDC	Reducing stations	0	0.35	6	5										X				
C-NGAS-TANK	Tanks	0	0.25	3	2	X									X				
Obstructions																			
C-OBST-AIRS	Airspace obstructions	0	0.35	3	2										X				
C-OBST-AIRS-IDEN	Obstruction annotation	0	0.35	2	4										X				
Overrun Areas																			
C-OVRN-CNTR	Centerlines	7	0.25	1	3										X				
C-OVRN-CNTR-IDEN	Centerline annotation	0	0.35	2	4										X				
C-OVRN-IDEN	Airfield overrun area - annotation	0	0.35	2	4										X		X		X
C-OVRN-OTLN	Airfield overrun area - outlines	0	0.35	4	7										X		X		X
C-OVRN-SHLD-MRKG	Shoulder markings	0	0.35	4	7										X				
Pads (Arm/Disarm/Calibration, etc.)																			
C-PADS-CNTR	Centerlines	7	0.25	1	3										X				
C-PADS-CNTR-IDEN	Centerline annotation	0	0.35	2	4										X				
C-PADS-IDEN	Pads - annotation	0	0.35	2	4										X		X		X
C-PADS-OTLN	Pad - outlines	0	0.35	4	7										X		X		X
C-PADS-SHLD	Shoulders with annotation	0	0.25	2	4										X				
Parking Lots																			
C-PRKG-CARS	Graphic illustration of cars	0	0.35	2	4						X	X							
C-PRKG-CNTR	Parking lot centerlines	7	0.25	1	3						X	X							
C-PRKG-CNTR-IDEN	Parking lot centerline annotation	0	0.25	1	3						X	X							
C-PRKG-CURB	Curbs and gutters	0	0.35	3	2						X	X							
C-PRKG-DRAIN	Drainage slope indications	0	0.35	1	3						X	X							
C-PRKG-FIXT	Parking lot fixtures (e.g., wheel stops, parking meters)	0	0.35	91	106						X	X							
C-PRKG-FLNE	Fire lanes	0	0.25	1	3						X	X							
C-PRKG-IDEN	Parking lot annotation	0	0.35	6	5						X	X				X		X	
C-PRKG-MRKG	Pavement markings	0	0.35	2	4						X	X							
C-PRKG-OTLN	Parking lot outlines	0	0.50	4	7						X	X				X		X	
C-PRKG-SIGN	Signs	0	0.35	2	4						X	X							
Property																			
C-PROP-CONS	Construction limits/controls, staging area	CONLMT	0.70	7	0					X	X							X	
C-PROP-ESMT	Easements	CONEMT	0.70	7	0					X	X							X	
C-PROP-IDEN	Property annotation	0	0.35	6	5					X	X							X	
C-PROP-LINE	Property lines	PROPL	0.50	2	4					X	X							X	
C-PROP-RWAY	Right of ways	6	0.70	7	0					X	X							X	
C-PROP-RWAY-ACQU	Right of way to be acquired in perpetuity	0	0.70	7	0					X	X							X	
C-PROP-SBCK	Setback lines	3	0.25	7	0					X	X							X	
C-PROP-SECT	Section lines	7	0.50	6	5					X	X							X	
C-PROP-SECT-IDEN	Section lines annotation	0	0.35	6	5					X	X							X	
C-PROP-TSHP	Township/range lines	4	0.50	6	5					X	X								
C-PROP-TSHP-IDEN	Township/range lines annotation	0	0.35	6	5					X	X								
Pavements																			
C-PVMT-ASPH	Pavement pattern - asphalt	0	0.18	8	9					X	X	X		X					
C-PVMT-CONC	Pavement pattern - concrete	0	0.18	8	9					X	X	X		X					
C-PVMT-GRVL	Pavement pattern - gravel	0	0.18	8	9					X	X	X		X					
C-PVMT-IDEN	Road, parking lot, railroad, airfield pavement annotation	0	0.25	2	4					X	X			X		X		X	
C-PVMT-MRKG	Pavement markings	0	0.35	2	4					X	X	X							
C-PVMT-PATT	Joint patterns, text and dimensions	0	0.18	8	9					X	X		X						

Discipline: Civil
Model File Layers/Levels

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AIA Format	Level/Layer Description																		
Railroads																			
C-RAIL-CNTR	Railroad track centerlines	7	0.25	1	3						X								
C-RAIL-CNTR-IDEN	Railroad track centerline annotation	0	0.35	1	3						X								
C-RAIL-EQPM	Railroad equipment (e.g., gates, signals)	0	0.35	91	106						X								
C-RAIL-IDEN	Railroad - annotation	0	0.35	6	5						X					X		X	
C-RAIL-TRAK	Railroad tracks	RAILRD	0.35	2	4						X					X		X	
Rivers																			
C-RIVR-BOTM	River bottom	0	0.35	5	1											X	X	X	
C-RIVR-CNTR	Centerline of river	7	0.25	1	3											X	X	X	
C-RIVR-EDGE	River edge	0	0.50	5	1											X	X	X	
C-RIVR-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4											X	X	X	
C-RIVR-TOPB	Top of river bank	0	0.35	5	1											X	X	X	
Roads, Streets, and Highways																			
C-ROAD-ASPH	Road outlines - asphalt surface	0	0.25	8	9						X	X				X		X	
C-ROAD-CNTR	Road centerlines	7	0.25	1	3						X	X						X	
C-ROAD-CNTR-IDEN	Road centerline annotation	0	0.25	1	3						X	X				X		X	
C-ROAD-CONC	Road outlines - concrete surface	0	0.25	7	0						X	X				X		X	
C-ROAD-CURB	Curbs and gutters	0	0.35	6	5						X	X				X		X	
C-ROAD-GRAL	Guard rails	GUARD	0.35	6	5						X	X				X		X	
C-ROAD-GRVL	Road outlines - gravel surface	0	0.25	20	6						X	X				X		X	
C-ROAD-IDEN	Road, street, highway annotation	0	0.35	6	5						X	X				X		X	
C-ROAD-MRKG	Pavement markings	0	0.35	2	4						X	X							
C-ROAD-PATT	Joint patterns, text and dimensions	0	0.18	8	9						X	X							
C-ROAD-SHLD	Roadway shoulder	0	0.35	6	5						X	X							
C-ROAD-SIGN	Signs	0	0.25	1	3						X	X							X
C-ROAD-UPVD	Road outlines - unpaved surface	0	0.25	3	2						X	X				X		X	
Riprap and Other Permanent Erosion Control Items																			
C-RRAP-GABN	Gabions	V	0.25	1	3														
C-RRAP-MATS	Articulated concrete mats	V	0.25	3	2														
C-RRAP-RVMT	Revetments	V	0.25	1	3														
C-RRAP-WEIR	Weirs	V	0.25	3	2														
Runways																			
C-RUNW-BLST	Blast pad and stopway markings	0	0.35	1	3									X		X		X	
C-RUNW-CNTR	Centerlines	7	0.25	1	3									X					
C-RUNW-CNTR-MRKG	Centerline markings	0	0.35	1	3									X					
C-RUNW-DISP	Displaced threshold markings	0	0.35	1	3									X					
C-RUNW-DIST	Fixed distance markings	0	0.35	1	3									X					
C-RUNW-EDGE	Airfield runway edges	0	0.35	6	5									X					
C-RUNW-IDEN	Airfield runway annotation	0	0.35	2	4									X		X		X	
C-RUNW-SHLD	Shoulder markings	0	0.35	6	5									X					
C-RUNW-SIDE	Side stripes	0	0.35	4	7									X					
C-RUNW-TDZM	Touchdown zone markers	0	0.35	6	5									X					
C-RUNW-THRS	Threshold markers	0	0.35	6	5									X					
Site Features																			
C-SITE-BLIN	Site breakline	2	0.35	3	2						X								
C-SITE-FENC	Fences and handrails	FENCE	0.35	6	5						X								
C-SITE-FENC-IDEN	Fence, handrail, ramp, and trail annotation	0	0.35	6	5						X								
C-SITE-IDEN	Site feature annotation	0	0.35	6	5						X					X		X	
C-SITE-STRC	Structures (bridges, sheds, foundation pads, footings, etc.)	0	0.35	22	22						X								
C-SITE-STRS	Stairs and ramps	0	0.35	6	5						X								
C-SITE-WALK	Walks, trails and bicycle paths	0	0.35	2	4						X								
Sanitary Sewer																			
C-SSWR-DEVC	Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves	0	0.35	6	5									X	X			X	

Discipline: Civil
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Site Plan	Grading Plan	Eco-Restoration Plan	Beach Renourishment Plan	Navigation/Dredging Plan	Flood Control Plan	Transportation Site Plan	Joint Layout Plan	Airfield Plan	Utilities Plan	Profiles	Elevations	X-Sections	Details
AIA Format	Level/Layer Description																		
C-SSWR-FILT	Filtration beds	0	0.35	3	2										X	X		X	
C-SSWR-FLOW	Flow direction arrows	0	0.35	6	5										X	X		X	
C-SSWR-FTTG	Caps and cleanouts	0	0.35	6	5	X									X	X		X	
C-SSWR-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X				X	X				X	X		X	
C-SSWR-JBOX	Junction boxes and manholes	0	0.35	1	3	X									X	X		X	
C-SSWR-LAGN	Lagoons	0	0.35	3	2										X	X		X	
C-SSWR-LEAC	Leach field	0	0.35	3	2										X	X		X	
C-SSWR-MAIN-PIPE	Sanitary sewer piping	SSWAF	0.35	6	5	X									X	X		X	
C-SSWR-NITF	Nitrification drain fields	0	0.35	3	2										X	X		X	
C-SSWR-PLNT	Treatment plants	0	0.35	6	5										X	X		X	
C-SSWR-SERV-PIPE	Sanitary sewer service piping	0	0.35	1	3										X	X		X	
C-SSWR-SIGN	Surface markers/signs	0	0.35	1	3										X	X		X	
C-SSWR-STNS-PUMP	Booster pump stations	0	0.35	6	5										X	X		X	
C-SSWR-TANK	Septic tanks	0	0.35	3	2	X				X	X				X	X		X	
Storm Sewer																			
C-STRM-AFFF	AFFF lagoon/detention pond	0	0.35	3	2										X	X		X	
C-STRM-CHUT	Chutes and concrete erosion control structures	0	0.35	1	3										X	X		X	
C-STRM-CULV	Culverts	CULVRT	0.35	3	2	X			X	X	X				X	X		X	
C-STRM-DEVC	Downspouts, flumes, oil/water separators, and flap gates	0	0.35	6	5	X			X	X	X				X	X		X	
C-STRM-FLOW	Flow direction arrows	0	0.35	6	5										X	X		X	
C-STRM-FMON	Flow monitoring station	0	0.35	6	5										X	X		X	
C-STRM-FTTG	Caps and cleanouts	0	0.35	6	5	X			X	X	X				X	X		X	
C-STRM-HWAL	Headwalls and endwalls	0	0.50	7	0	X			X	X	X				X	X		X	
C-STRM-IDEN	Identifier tags, symbol modifier, and text	0	0.35	2	4	X			X	X	X				X	X		X	
C-STRM-INLT	Inlets (curb, surface, and catch basins)	0	0.35	3	2										X	X		X	
C-STRM-MAIN-PIPE	Storm sewer piping	STRAF	0.35	6	5	X			X	X	X				X	X		X	
C-STRM-MHOL	Manholes	0	0.35	1	3	X									X	X		X	
C-STRM-POND	Retention ponds, lagoons, watersheds, and basins	0	0.35	3	2										X	X		X	
C-STRM-ROOF	Roof drain line	0	0.35	3	2										X	X		X	
C-STRM-SERV-PIPE	Storm sewer service piping	0	0.35	1	3										X	X		X	
C-STRM-SIGN	Surface markers/signs	0	0.35	1	3										X	X		X	
C-STRM-STNS-PUMP	Pump stations	0	0.35	6	5	X					X				X	X		X	
C-STRM-SUBS-PIPE	Subsurface drain piping	0	0.35	3	2										X	X		X	
Survey																			
C-SURV-DATA	Survey data (benchmarks and horizontal control points or monuments)	0	0.35	6	5	X			X	X	X								
C-SURV-IDEN	Survey, baseline, and control line annotation	0	0.35	6	5	X			X	X	X								
C-SURV-LINE	Survey, baseline, and control lines	2	0.35	4	7	X			X	X	X								
Taxiways																			
C-TAXI-CNTR	Centerlines	7	0.25	1	3										X				
C-TAXI-CNTR-IDEN	Centerline annotation	0	0.35	2	4										X				
C-TAXI-CNTR-MRKG	Centerline markings	0	0.25	1	3										X				
C-TAXI-EDGE	Edge markings	0	0.35	4	7										X				
C-TAXI-HOLD	Holding lines	0	0.35	2	4										X				
C-TAXI-IDEN	Taxiway - annotation	0	0.35	2	4										X		X		
C-TAXI-OTLN	Taxiway - outlines	0	0.35	4	7										X		X		
C-TAXI-SHLL	Shoulders with annotation	0	0.35	2	4										X				
Topography																			
C-TOPO-BNDY-EXTR	Surface exterior boundary	0	0.18	3	2	X	X	X		X	X	X			X				
C-TOPO-BNDY-INTR	Surface interior boundary	2	0.18	1	3	X	X	X		X	X	X			X				
C-TOPO-BKLN	Breaklines	4	0.50	7	0	X	X		X	X	X								
C-TOPO-BKLN-COMM	Subsurface utilities communications breakline	COMUGN	0.50	7	0	X			X	X	X								
C-TOPO-BKLN-DOMW	Subsurface utilities water breakline	WATERL	0.50	7	0	X			X	X	X								
C-TOPO-BKLN-ELEC	Subsurface utilities electric breakline	EPUGN	0.50	7	0	X			X	X	X								

Discipline: Civil
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Site Plan	Grading Plan	Eco-Restoration Plan	Beach Renourishment Plan	Navigation/Dredging Plan	Flood Control Plan	Transportation Site Plan	Joint Layout Plan	Airfield Plan	Utilities Plan	Profiles	Elevations	X-Sections	Details
AIA Format	Level/Layer Description																		
C-TOPO-BKLN-FUEL	Subsurface utilities liquid fuel breakline	LIQPET	0.50	7	0	X			X	X	X								
C-TOPO-BKLN-NGAS	Subsurface utilities natural gas breakline	NTGASN	0.50	7	0	X			X	X	X								
C-TOPO-BKLN-SSWR	Subsurface utilities sanitary sewer breakline	SSWAF	0.50	7	0	X			X	X	X								
C-TOPO-BKLN-STRM	Subsurface utilities storm sewer breakline	STRAF	0.50	7	0	X			X	X	X								
C-TOPO-BORE	Boring locations and text	0	0.35	6	5	X	X	X	X	X	X								
C-TOPO-COOR	Coordinate grid text annotation	0	0.35	122	23	X	X		X	X									
C-TOPO-COOR-LALO	Latitude and longitude grid ticks	0	0.25	3	2	X	X			X	X								
C-TOPO-COOR-STAT	State Plane coordinate ticks	0	0.25	3	2	X	X			X	X								
C-TOPO-COOR-UTM	UTM coordinate ticks	0	0.25	3	2	X	X			X	X								
C-TOPO-DTMO	DTM obscure area boundary	0	0.35	6	5	X	X	X		X	X	X							
C-TOPO-DTMP	DTM points	0	0.35	6	5	X	X	X		X	X	X		X					
C-TOPO-DTMT	DTM triangles	0	0.35	22	22	X	X	X		X	X	X		X					
C-TOPO-MAJR	Major contours	0	0.35	2	4	X	X	X	X	X	X								
C-TOPO-MAJR-IDEN	Major contours - annotation	0	0.35	2	4	X	X	X	X	X	X								
C-TOPO-MINR	Minor contours	0	0.25	3	2	X	X	X	X	X	X								
C-TOPO-MINR-IDEN	Minor contours - annotation	0	0.25	3	2	X	X	X	X	X	X								
C-TOPO-SHAP	Application generated shapes/lines	0	0.25	1	3	X	X	X	X	X	X	X	X	X	X				
C-TOPO-SHOR	Shorelines, land features, and references	0	0.35	4	7	X			X	X	X								
C-TOPO-SLOP-FILL	Cut/fill slopes	0	0.35	2	4	X	X		X	X	X								
C-TOPO-SLOP-IDEN	Cut/fill slope, top/toe slope annotation	0	0.35	2	4	X	X		X	X	X								
C-TOPO-SLOP-TOPT	Top/toe slopes	0	0.35	6	5	X	X	X	X	X	X								
C-TOPO-SOUN	Soundings and overbanks	0	0.18	V	V	X			X	X	X								
C-TOPO-SPOT	Spot elevations	0	0.35	2	4	X	X	X	X				X						
C-TOPO-SURF-PERI	Surface perimeter	0	0.18	3	2	X	X	X		X	X	X		X					
C-TOPO-SURF-PONT	Surface feature points	0	0.25	7	0	X	X	X		X	X	X		X					
C-TOPO-SURF-VOID	Surface void region	0	0.18	1	3	X	X	X	X	X	X			X					
C-TOPO-WATR	Water level reference (LWRP, after-grading LWRP, SWL, etc.)	3	0.50	V	V	X			X	X	X								
Airfield Traffic Areas																			
C-TRAF-IDEN	Airfield traffic area annotation	0	0.35	2	4									X					
C-TRAF-TYPA	Type A traffic area	4	0.50	4	7									X					
C-TRAF-TYPB	Type B traffic area	6	0.50	4	7									X					
C-TRAF-TYPC	Type C traffic area	1	0.50	4	7									X					
Wetlands																			
C-WETL-BOGS	Bogs	0	0.35	6	5			X											
C-WETL-FENS	Fens	0	0.35	2	4			X											
C-WETL-IDEN	Wetland annotation	0	0.35	2	4			X											
C-WETL-MRSH	Fresh water marshes	0	0.35	162	33			X											
C-WETL-MRSH-SALT	Tidal saltwater marshes	0	0.35	162	33			X											
C-WETL-MRSH-TIDL	Tidal freshwater marsh	0	0.35	162	33			X											
C-WETL-PCSN	Pocosins	0	0.35	6	5			X											
C-WETL-PHOL	Vernal pools, playas, prairie potholes, wet meadows, and wet prairies	0	0.35	6	5			X											
C-WETL-RPRN	Riparian forested wetlands	0	0.35	162	33			X											
C-WETL-SLGH	Sloughs	0	0.35	162	33			X											
C-WETL-SWMP	Swamps	0	0.35	162	33			X											
Elevations																			
C-ELEV-IDEN	Component identification numbers	0	0.35	2	4	X			X		X						X		
C-ELEV-OTLN	Outlines	0	0.35	6	5	X			X		X						X		
C-ELEV-PATT	Textures and hatch patterns	0	0.18	8	9	X			X		X						X		
C-ELEV-SIGN	Signage	0	0.35	1	3	X			X		X						X		
Sections																			
C-SECT-IDEN	Component identification numbers	0	0.35	2	4													X	
C-SECT-MBND	Material beyond section cut	0	0.18	5	1													X	
C-SECT-MCUT	Cuts through road surfaces, buildings, structures, fence lines, etc.	V	V	V	V													X	

Discipline: Civil
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Site Plan	Grading Plan	Eco-Restoration Plan	Beach Renourishment Plan	Navigation/Dredging Plan	Flood Control Plan	Transportation Site Plan	Joint Layout Plan	Airfield Plan	Utilities Plan	Profiles	Elevations	X-Sections	Details
AIA Format	Level/Layer Description																		
C-SECT-PATT	Textures and hatch patterns	0	0.18	8	9													X	
Details																			
C-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V														X

Note: V = Varies, NA = Not Applicable

Discipline: Landscape

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Landscape Plan	Irrigation Plan	Details
AIA Format	Level/Layer Description							
General Information								
L-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X
L-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X
L-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X
L-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X
L-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X
L-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X
L-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X
L-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X
L-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X
Irrigation System								
L-IRRG-COVR	Irrigation coverage, spray distribution patterns	0	0.18	5	1		X	
L-IRRG-EQPM	Equipment (e.g., controllers, valves, RPBP's, etc.)	0	0.35	6	5		X	
L-IRRG-HEAD	Irrigation heads, bubblers, and drip irrigation emitters	0	0.25	1	3		X	
L-IRRG-IDEN	Annotation	0	0.35	2	4		X	
L-IRRG-PIPE	Piping	LAWN	0.35	6	5		X	
L-IRRG-SPKL	Sprinklers	0	0.35	6	5		X	
Plant and Landscape Material								
L-PLNT-BEDS	Planting beds (perennial and annual beds)	0	0.35	6	5	X		
L-PLNT-BUSH	Bushes and shrubs (e.g., evergreen, deciduous, etc.)	0	0.50	83	42	X		
L-PLNT-BUSH-LINE	Bush and shrub line	0	0.50	83	42	X		
L-PLNT-CTNR	Containers or planters	0	0.25	1	3	X		
L-PLNT-GCVR	Groundcover and vines	0	0.35	82	18	X		
L-PLNT-IDEN	Annotation	0	0.35	6	5	X		
L-PLNT-MLCH	Mulches - organic and inorganic	0	0.25	3	2	X		
L-PLNT-PLNT	Planting plants (e.g., ornamental annuals and perennials)	0	0.50	83	42	X		
L-PLNT-SHAD	Shadow areas	0	0.18	5	1	X		
L-PLNT-SPRG	Sprigs	0	0.25	3	2	X		
L-PLNT-TREE	Trees (e.g., evergreen, deciduous, etc.)	0	0.50	83	42	X		
L-PLNT-TREE-LINE	Tree line	TREEL	0.50	83	42	X		
L-PLNT-TURF	Lawn areas (turfing limits)	0	0.50	23	46	X		
Site Improvements								
L-SITE-BRDG	Bridges (pedestrian)	0	0.35	22	22	X		
L-SITE-DECK	Decks	0	0.35	232	107	X		
L-SITE-FENC	Fencing	FENCE	0.35	2	4	X		
L-SITE-FURN	Furnishings	0	0.50	4	7	X		
L-SITE-IDEN	Annotation	0	0.35	6	5	X		
L-SITE-PLAY	Play structures	0	0.35	2	4	X		
L-SITE-POOL	Pools and spas	0	0.35	162	33	X		
L-SITE-ROCK	Boulders and cobble	0	0.25	1	3	X		
L-SITE-RTWL	Retaining walls	0	0.50	4	7	X		
L-SITE-SPRT	Sports fields	0	0.35	2	4	X		
L-SITE-SWLK	Sidewalks and steps	0	V	V	V	X		
Detail Information								
L-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V			X

Note: V = Varies, NA = Not Applicable

Discipline: Structural
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
AIA Format	Level/Layer Description	Line Style*	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Vertical Const		Bridges		Hydraulic Structures							3D Alignment	Sections	Details
						Foundation Plan	Framing Plan	Column Plan	Substructure	Decks	Superstructure	Locks	Dams	Hydraulic Steel Structures	Flood Control Structures	Misc. Small Civil Works Structures			
General Information																			
S-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-ANNO-PATT	Patterning, poche, shading, and hatching	0	0.18	8	9	X	X	X	X	X	X	X	X	X	X		X	X	X
S-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X	X	X	X	X		X	X	X
S-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X	X	X	X	X	X	X	X	X
S-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Access																			
S-ACCS-ADIT	Adits in galleries and passages	0	0.35	21	30						X	X		X					
S-ACCS-CHAM	Chambers	0	0.35	22	22						X	X		X					
S-ACCS-EVTR	Elevators	0	0.35	132	103		X												
S-ACCS-GLRY	Galleries, cross overs, trenches, etc.	0	0.35	30	86	X					X			X					
S-ACCS-HTCH	Hatches	0	0.25	32	102	X				X			X	X					
S-ACCS-LADD	Ladders and ladder safety devices	0	0.35	162	33	X	X		X	X	X	X		X	X				
S-ACCS-MHOL	Manholes	0	0.35	83	42				X	X				X	X				
S-ACCS-MISC	Miscellaneous access	0	0.35	83	42				X	X				X	X				
S-ACCS-STRS	Stairs	0	0.35	133	111	X			X		X	X		X					
S-ACCS-STRS-FRMG	Stair framing	0	0.35	135	127		X		X		X	X		X					
S-ACCS-TUNL	Tunnels	0	0.35	42	182	X			X		X	X		X					
Alignment																	X		
S-ALGN-LINE	Alignments	4	0.25	1	3														
Armor																			
S-ARMR-CRNR	Corner protection, corner cap casting	0	0.25	143	191						X								
S-ARMR-LINR	Protective liner (used for walls, culverts, etc.)	0	0.25	122	23						X								
S-ARMR-MISC	Miscellaneous armor	0	0.25	143	191						X								
S-ARMR-WALL	Wall armor	0	0.25	143	191						X								
Beams																			
S-BEAM-CNTR	Beam centerlines	7	0.25	214	117		X				X	X	X	X	X				
S-BEAM-PRIM	Continuous beam or primary beam of two-way beam system	0	0.50	211	109		X				X	X	X	X	X				
S-BEAM-RBAR	Beam rebar	0	0.70	5	1		X				X	X	X	X	X				
S-BEAM-SECD	Girders or secondary beams of two-way beam system	0	0.35	212	101		X				X	X	X	X	X				
Bracing																			
S-BRCG-DIA~	Diagonal bracing	0	0.35	161	25		X				X		X	X					
S-BRCG-HORZ	Horizontal bracing	0	0.35	161	25		X				X		X	X					
S-BRCG-VERT	Vertical bracing	0	0.35	144	199		X				X		X	X					
Bridges																			
S-BRDG-ABUT	Abutments	0	0.50	83	42				X										
S-BRDG-ABUT-RBAR	Abutment rebar	0	0.70	5	1				X										
S-BRDG-BEAR	Bridge bearing	0	0.35	152	88				X		X								
S-BRDG-BEAR-CNTR	Bridge bearing centerlines	7	0.25	214	117				X		X								
S-BRDG-BENT	Bent cap	0	0.35	3	2				X										
S-BRDG-BENT-CNTR	Centerline of bents	7	0.25	214	117				X										
S-BRDG-BENT-RBAR	Bent cap rebar	0	0.70	5	1				X										
S-BRDG-CURB	Curbs/sidewalks on structure	0	0.35	2	4						X								

Model File Layers/Levels

Appendix A Model File Level/Layer Assignment Tables

Discipline: Structural
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types												
AIA Format	Level/Layer Description	Line Style*	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Vertical Const		Bridges			Hydraulic Structures					3D Alignment	Sections	Details
						Foundation Plan	Framing Plan	Column Plan	Substructure	Decks	Superstructure	Locks	Dams	Hydraulic Steel Structures	Flood Control Structures			
S-FNDN-PL--	Column base plates	0	0.25	13	35	X				X			X	X				
S-FNDN-RIBS	Ribbed mat foundation	0	0.35	52	36	X						X	X		X			
S-FNDN-TRMT	Foundation treatment (grouting)	0	0.35	51	28	X			X			X	X	X	X			
S-FNDN-TUNL	Service tunnel/duct banks	0	0.35	42	182	X						X	X		X			
Gates																		
S-GATE-ANCH	Gate anchorages	0	0.25	30	86									X	X			
S-GATE-ANCH-DEAD	Dead man anchorage	0	0.25	30	86									X				
S-GATE-ARMS	Arm	0	0.35	161	25									X				
S-GATE-AXIS	Gate axis and centerlines	7	0.25	214	117		X				X	X	X	X	X			
S-GATE-BLKH	Bulkhead	0	0.35	5	1									X				
S-GATE-BLKH-NDLB	Bulkhead needles beam	0	0.35	212	101									X				
S-GATE-BLKH-NDLS	Bulkhead needles	0	0.35	13	35									X				
S-GATE-CONN	Gate connects, links	0	0.35	30	86									X		X		
S-GATE-DIA~	Diagonals, gussets, sleeve nut	0	0.35	13	35									X				
S-GATE-DIA~-CHAN	Diagonal channels	0	0.35	13	35									X				
S-GATE-DIA~-GUST	Diagonal gusset plate	0	0.35	13	35									X				
S-GATE-DIA~-SUPT	Diagonal gusset plate support	0	0.35	13	35									X				
S-GATE-DIAP	Diaphragms	0	0.35	5	1									X				
S-GATE-FEND	Gate fenders	0	0.35	75	220									X				
S-GATE-FLNG	Flange	0	0.35	5	1									X				
S-GATE-FLNG-DNST	Downstream flange	0	0.35	5	1									X				
S-GATE-FLNG-GIRD	Girder flange	0	0.35	30	86									X				
S-GATE-FLNG-UPST	Upstream flange	0	0.35	5	1									X				
S-GATE-GIRD-WEB~	Girder web plates	0	0.35	162	33									X				
S-GATE-GUDG	Gudgeon	0	0.35	6	5									X				
S-GATE-GUDG-HOOD	Gudgeon hood	0	0.35	6	5									X				
S-GATE-GUDG-HUB~	Gudgeon hub	0	0.35	6	5									X				
S-GATE-GUDG-PIN~	Gudgeon pin	0	0.35	6	5									X				
S-GATE-GUDG-STIF	Gudgeon (hood) stiffener	0	0.35	6	5									X				
S-GATE-GUDG-SUPT	Gudgeon (pin) support	0	0.35	6	5									X				
S-GATE-HORZ	Horizontal rolled shapes	0	0.35	211	109									X				
S-GATE-ICST	Intercostals	0	0.35	132	103									X				
S-GATE-JACK	Gate jack	0	0.35	5	1									X				
S-GATE-JACK-HORZ	Gate jack - horizontal	0	0.35	5	1									X				
S-GATE-JACK-VERT	Gate jack - vertical	0	0.35	5	1									X				
S-GATE-LIFT	Lifting mechanism	0	0.35	142	183									X	X	X		
S-GATE-LTCH	Latching device	0	0.35	5	1									X				
S-GATE-LTCH-BOTM	Latching device - bottom	0	0.35	5	1									X				
S-GATE-LTCH-TOP~	Latching device - top	0	0.35	5	1									X				
S-GATE-LUBE	Lubrication system	0	0.25	5	1									X				
S-GATE-MISC	Gates incidental to structure	0	0.25	5	1							X	X		X	X		
S-GATE-MITR-ASSY	Miter guide assembly	0	0.35	152	88									X				
S-GATE-PIN~	Gate pins	0	0.25	30	86									X				
S-GATE-PNTL	Pintle ball, bushing & base	0	0.35	30	86									X				
S-GATE-PNTL-CAST	Pintle casting	0	0.35	62	116									X				
S-GATE-QOIN	Quoin	0	0.35	152	88									X				
S-GATE-QOIN-FLNG	Quoin flange	0	0.35	152	88									X				

Discipline: Structural
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types																
						Vertical Const				Bridges					Hydraulic Structures							
						Foundation Plan	Framing Plan	Column Plan	Substructure	Decks	Superstructure	Locks	Dams	Hydraulic Steel Structures	Flood Control Structures	Misc Small Civil Works Structures	3D Alignment	Sections	Details			
AIA Format	Level/Layer Description	Line Style*	Line Width (mm)	AutoCAD Color #	MicroStation Color #																	
S-GATE-QOIN-MITR	Quoin, miter	0	0.35	152	88									X								
S-GATE-QOIN-STIF	Quoin stiffener	0	0.35	152	88									X								
S-GATE-QOIN-TRST	Quoin thrust plate	0	0.35	152	88									X								
S-GATE-QOIN-WALL	Quoin, wall	0	0.35	152	88									X								
S-GATE-QOIN-WEB~	Quoin web	0	0.35	152	88									X								
S-GATE-RAIL	Rails and guides	0	0.35	152	88									X	X	X						
S-GATE-SEAL	Gate seal	0	0.35	232	107										X	X						
S-GATE-SEAL-HORZ	Gate seal - horizontal	0	0.35	232	107									X								
S-GATE-SEAL-VERT	Gate seal - vertical	0	0.35	232	107									X								
S-GATE-SHOE	Gate shoe	0	0.35	142	183									X								
S-GATE-SKIN	Skin plates	0	0.25	142	183									X								
S-GATE-STIF	Stiffener	0	0.35	5	1									X								
S-GATE-STIF-LONG	Stiffener - longitudinal	0	0.35	5	1									X								
S-GATE-STIF-TRAN	Stiffener - transverse	0	0.35	5	1									X								
S-GATE-STOP	Stoplogs	0	0.35	42	182									X	X	X						
S-GATE-THBL	Thimble	0	0.25	241	179									X	X	X						
S-GATE-TRST	Thrust plate	0	0.25	122	23									X								
S-GATE-TRUN	Trunion	0	0.35	6	5									X								
S-GATE-VALV	Valves (general shape)	0	0.35	202	21									X								
S-GATE-VERT	Rolled vertical shapes	0	0.35	144	199									X								
S-GATE-WALK	Walkway	0	0.35	132	103									X								
S-GATE-WALK-FRMG	Walkway - framing	0	0.35	132	103									X								
S-GATE-WALK-GRTG	Walkway - grating	0	0.35	132	103									X								
S-GATE-WALK-SUPT	Walkway - support	0	0.35	132	103									X								
S-GATE-WEB~	Web	0	0.35	162	33									X								
Grade Lines																						
S-GRLN-SURF-E	Existing ground	3	0.25	31	110				X			X	X		X	X						
S-GRLN-SURF-N	Finished grade	0	0.35	32	102				X			X	X		X	X						
S-WATR-SURF	Water surface	0	0.25	161	25				X			X	X		X	X						
Grids																						
S-GRID-HORZ	Grid lines (horizontal)	7	0.18	6	5			X		X	X	X	X	X	X							
S-GRID-HORZ-IDEN	Column I.D. tags (horizontal)	0	0.25	6	5			X		X	X	X	X	X								
S-GRID-VERT	Grid lines (vertical)	7	0.18	6	5			X	X	X	X	X	X	X	X							
S-GRID-VERT-IDEN	Column I.D. tags (vertical)	0	0.25	6	5			X		X	X	X	X	X								
Hydraulic Features																						
S-HYDR-AXIS	Axis of structure	4	0.18	202	21								X									
S-HYDR-BAFL	Baffle blocks, splash pads	0	0.35	122	23							X	X		X							
S-HYDR-BASN	Stilling and settling basins	0	0.35	122	23								X		X							
S-HYDR-CHAN	Channel (Does not include earthen structures)	0	0.35	122	23										X							
S-HYDR-COFF	Cofferdam	0	0.35	42	182							X	X		X	X						
S-HYDR-COND	Diversinary/bypass conduits and culverts	0	0.35	122	23							X	X		X	X						
S-HYDR-DAM~	Dam	0	0.35	122	23								X		X							
S-HYDR-FISH	Fish ladder or passage	0	0.35	122	23								X		X							
S-HYDR-FLUM	Flume	0	0.35	122	23								X		X							
S-HYDR-INTK	Intake, outlet	0	0.35	122	23							X	X		X	X						
S-HYDR-NOVR	Non-overflow structures	0	0.35	122	23								X		X							
S-HYDR-PENS	Penstock outline and features	0	0.35	122	23								X									

Discipline: Structural
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults			
AIA Format	Level/Layer Description	Line Style*	Line Width (mm)	AutoCAD Color #	MicroStation Color #
S-HYDR-STRC-POWR	Powerhouse	0	0.35	124	39
S-HYDR-SWAY	Spillway	0	0.35	122	23
S-HYDR-WEIR	Weirs and sluiceways	0	0.35	122	23
Joints					
S-JNTS-CNTJ	Construction/lift joints - (Do not use when 3D modeling)	0	0.25	122	23
S-JNTS-CTLJ	Control/contraction joints (saw cut) - (Do not use when 3D modeling)	0	0.25	122	23
S-JNTS-EXPJ	Expansion joints, joint materials (e.g., felt) - (Do not use when 3D modeling)	0	0.25	124	39
S-JNTS-STUC	Stucco joints - (Do not use when 3D modeling)	0	0.25	111	246
S-JNTS-WTRS	Waterstops	0	0.25	221	189
Joists					
S-JOIS-BRGX	Bridging	0	0.35	82	18
S-JOIS-GIRD	Joist girders	0	0.50	122	23
S-JOIS-PERI	Perimeter channel or rim joist	0	0.35	142	183
S-JOIS-PRIM	Primary joists	0	0.35	132	103
S-JOIS-SECD	Secondary joists	0	0.35	134	119
S-JOIS-TRIM	Partial length or trimmer floor joist	0	0.35	134	119
Fabrications (metal or other specialty)					
S-FABR-EMBD	Embedded metals (framing around openings)	0	0.35	183	201
S-FABR-HOIS	Hoist structures	0	0.25	142	183
S-FABR-HOOK	Line hooks, lifting hooks, check posts etc.	0	0.25	142	183
S-FABR-MOOR	Mooring bits, chocks, rings	0	0.35	142	183
S-FABR-PL--	Plates	0	0.35	142	183
S-FABR-TRSH	Trash racks, intake screens	0	0.35	142	183
Pipes and Culverts					
S-PIPE-CULV	Precast/manufactured culverts	0	0.35	200	13
Platforms					
S-PLAT-FRMG	Platform frame/stringers	0	0.35	212	101
S-PLAT-GRTG	Platform grating (add a second minor group to indicate platform # or elev)	0	0.25	121	15
S-PLAT-WALK	Platform walkway	0	0.35	33	126
Reinforcement					
S-REIN-RBAR	Steel reinforcing, welded wire fabric	0	0.70	5	1
S-REIN-TEND-HORZ	Horizontal Tendons	0	0.50	181	185
S-REIN-TEND-VERT	Vertical Tendons	0	0.50	181	185
Reference Outlines					
S-OTLN-BLDG	Building outline	6	0.25	5	1
S-OTLN-FLOR	Floor outline	6	0.25	5	1
S-OTLN-OPNG	Openings	6	0.25	5	1
S-OTLN-ROOF	Roof	6	0.25	5	1
S-OTLN-STRC	Misc. structures	6	0.25	5	1
Safety Features					
S-SAFE-FENC	Fencing rails, fabric, supports, and gates	0	0.25	3	2
S-SAFE-GRAL	Guardrails	0	0.35	62	116
S-SAFE-HRAL	Handrails, railings	0	0.25	3	2
S-SAFE-PRPT	Parapet/jersey barrier	0	0.50	3	2
S-SAFE-PRPT-RBAR	Parapet/jersey barrier rebar	0	0.70	5	1
S-SAFE-WATR	Waterway safety barriers	0	0.35	3	2
Signs					

Model File Types													
Vertical Const			Bridges			Hydraulic Structures					3D Alignment	Sections	Details
Foundation Plan	Framing Plan	Column Plan	Substructure	Decks	Superstructure	Locks	Dams	Hydraulic Steel Structures	Flood Control Structures	Misc Small Civil Works Structures			
						X	X						
							X		X				
							X		X				
X	X			X	X	X	X		X				
X	X			X	X	X	X		X				
	X												
X				X		X	X		X	X			
	X												
	X												
	X												
	X												
X	X		X	X	X	X	X	X	X	X			
					X	X	X	X	X				
						X	X	X	X				
						X	X	X	X				
X	X		X	X	X	X	X	X	X	X			
							X		X				
									X	X			
	X		X	X		X	X	X	X	X			
			X	X	X	X	X	X	X				
X	X	X	X	X	X	X	X		X	X			
				X	X			X					
X	X	X				X	X		X	X			
X	X	X				X	X	X	X	X			
X	X	X				X	X	X	X	X			
X	X	X				X	X	X	X	X			
				X		X	X		X	X			
				X	X	X	X		X	X			
				X	X	X	X	X	X	X			
				X	X	X			X	X			
				X		X	X		X	X			

Discipline: Structural
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types														
AIA Format	Level/Layer Description	Line Style*	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Vertical Const		Bridges			Hydraulic Structures							3D Alignment	Sections	Details
						Foundation Plan	Framing Plan	Column Plan	Substructure	Decks	Superstructure	Locks	Dams	Hydraulic Steel Structures	Flood Control Structures	Misc Small Civil Works Structures				
S-SIGN-BUOY	Sign buoys	0	0.35	242	187								X							
S-SIGN-EXTN	Extrusions	0	0.35	212	101		X													
S-SIGN-FRMG	Framing and connections	0	0.35	3	2		X													
S-SIGN-GAGE	Staff gages	0	0.35	232	107							X	X							
S-SIGN-PANL	Sign panels	0	0.35	232	107						X	X								
S-SIGN-SPRT	Supports	0	0.35	5	1		X													
S-SIGN-TEXT	Signage text	0	0.35	222	181		X													
Slabs																				
S-SLAB-APPR	Approach slab	0	0.35	41	190						X									
S-SLAB-APPR-RBAR	Approach slab rebar	0	0.70	5	1						X									
S-SLAB-EDGE	Edge of slab	0	0.35	41	190															
S-SLAB-OPNG	Openings (and depressions)	2	0.25	1	3															
S-SLAB-RBAR	Slab rebar	0	0.70	5	1															
S-SLAB-SECD	Second pour, slab cap	0	0.35	41	190															
S-SLAB-SILL	Sill	0	0.35	41	190															
Stiffeners																				
S-STIF-LONG	Stiffeners - longitudinal	0	0.35	3	2						X			X						
S-STIF-TRAV	Stiffeners - transverse	0	0.35	3	2		X				X			X						
Trusses																				
S-TRUS-BRGX	Truss bridging	0	0.35	82	18						X		X							
S-TRUS-PRIM	Primary trusses	0	0.50	4	7						X		X							
S-TRUS-SECD	Secondary trusses	0	0.35	6	5						X		X							
Walls																				
S-WALL-ABUT	Abutments	0	0.35	83	42				X				X		X					
S-WALL-CELL	Cell	0	0.35	53	44							X								
S-WALL-COFF	Cutoff wall	0	0.35	30	86					X		X	X		X	X				
S-WALL-CURT	Curtain/breast wall	0	0.35	72	196					X			X		X					
S-WALL-FULL	Wall going to the top of the structure	0	0.35	3	2															
S-WALL-GARD	Guard/guide walls	0	0.35	72	196							X	X		X					
S-WALL-LOAD	Load bearing walls	0	0.35	3	2															
S-WALL-MONO	Wall monoliths	0	0.35	3	2															
S-WALL-MSE~	Mechanically stabilized earth (MSE) wall	0	0.35	72	196															
S-WALL-NONL	Non-load bearing walls	0	0.35	72	196															
S-WALL-PCST	Pre-cast concrete walls	0	0.35	126	55															
S-WALL-PRHT	Wall that does not reach to the top of the structure	0	0.35	72	196															
S-WALL-RBAR	Wall rebar	0	0.70	5	1															
S-WALL-RTWL	Retaining wall (flood walls, wingwalls, etc.)	0	0.35	72	196															
S-WALL-SHEA	Shear walls	0	0.35	101	186															
S-WALL-STUD	Stud walls	0	0.35	42	182															
Waterway Specialties																				
S-WWAY-DLPH	Dolphins (associated with but not part of bridges, locks and guidewalls)	0	0.35	122	23				X			X	X		X					
S-WWAY-FEND	Fenders	0	0.35	75	220				X			X	X		X					
S-WWAY-MOOR	Mooring cells	0	0.35	142	183				X			X	X		X					
Sections																				
S-SECT-IDEN	Component identification numbers	0	0.35	2	4													X		
S-SECT-MBND	Material beyond section cut	0	0.18	5	1													X		
S-SECT-MCUT	Material cut by section	V	V	V	V													X		

Discipline: Structural
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types													
AIA Format	Level/Layer Description	Line Style*	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Vertical Const			Bridges			Hydraulic Structures					3D Alignment	Sections	Details
						Foundation Plan	Framing Plan	Column Plan	Substructure	Decks	Superstructure	Locks	Dams	Hydraulic Steel Structures	Flood Control Structures	Misc Small Civil Works Structures			
S-SECT-PATT	Textures and hatch patterns	0	0.18	8	9												X		
Details																		X	
S-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V														

* Hidden lines will be drawn using line style 2, weight 0.25

Discipline: Architectural

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types							
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Floor Plan	Reflected Ceiling Plan	Roof Plan	Equipment Plan	Area Calculations/Occupancy Plan	Elevations	Sections	Details
AIA Format	Level/Layer Description												
General Information													
A-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X	X	X
A-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X
A-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16	X	X	X	X	X	X	X	X
A-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X
A-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X	X	X
A-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X	X	X
A-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X
A-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X	X	X
A-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X	X	X
A-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X
Area Information													
A-AREA-IDEN	Room numbers, tenant identifications, area calculations	0	0.35	2	4					X			
A-AREA-LINE	Architectural area calculation boundary lines	0	0.50	4	7					X			
A-AREA-OCCP	Occupant or employee names	0	0.35	2	4					X			
A-AREA-PATT	Area cross hatching	0	0.18	8	9					X			
Barrier													
A-BARR-AIR~	Air barrier	0	0.25	5	1	X							
Ceiling Information													
A-CLNG-ACCS	Access panels	0	0.35	6	5		X						
A-CLNG-CTLJ	Ceiling control joints	0	0.35	2	4		X						
A-CLNG-GRID	Ceiling grid	0	0.25	1	3		X						
A-CLNG-LITE	Specialty ceiling lights not shown on the Electrical Lighting Plan	0	0.50	4	7		X						
A-CLNG-OPNG	Openings, ceiling/roof penetrations (see also A-FLOR-OVHD in Floor Plan model file)	0	0.18	8	9		X						
A-CLNG-PATT	Ceiling patterns	0	0.18	8	9		X						
A-CLNG-SFFT	Soffits	0	0.25	2	4		X						
A-CLNG-SUSP	Suspended elements, ceiling mounted specialties (e.g., clocks, fans, etc.)	0	0.18	5	1		X						
A-CLNG-TEES	Main tees	0	0.18	5	1		X						
Columns													
A-COLS-ENCL	Column enclosures/fire protection	0	0.50	4	7	X							
Doors													
A-DOOR-FULL	Full height (to ceiling) door: swing and leaf	0	0.25	3	2	X							
A-DOOR-IDEN	Door number and symbol, hardware group, etc.	0	0.25	3	2	X							
A-DOOR-PRHT	Partial height door: swing and leaf	0	0.35	6	5	X							
A-DOOR-SYMB	Miscellaneous door symbols (e.g., overhead, bifold, pocket, etc.)	0	0.25	1	3	X							
Equipment													
A-EQPM-ACCS	Equipment access	0	0.35	6	5				X				
A-EQPM-FIXD	Fixed equipment	0	0.50	4	7				X				
A-EQPM-IDEN	Equipment identification numbers	0	0.35	6	5				X				
A-EQPM-MOVE	Moveable equipment	0	0.35	6	5				X				
A-EQPM-OVHD	Overhead, ceiling mounted, or suspended equipment	0	0.35	6	5				X				
Floor Information													
A-FLOR-CSWK	Casework (manufactured cabinets)	0	0.25	3	2	X							
A-FLOR-EVTR	Elevator cars and equipment	0	0.35	2	4	X							
A-FLOR-FIXT	Plumbing fixtures	0	0.25	201	29	X							
A-FLOR-FTPT	Floor/building footprint	0	0.70	4	7	X							
A-FLOR-HRAL	Stair and balcony handrails, guard rails	0	0.25	1	3	X							

Discipline: Architectural

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types							
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Floor Plan	Reflected Ceiling Plan	Roof Plan	Equipment Plan	Area Calculations/Occupancy Plan	Elevations	Sections	Details
A-FLOR-IDEN	Room name, space identification text	0	0.35	3	2	X							
A-FLOR-LEVL	Level changes, shafts, ramps, pits, breaks in construction, and depressions	0	0.35	6	5	X							
A-FLOR-NUMB	Room/space identification number and symbol	0	0.35	3	2	X							
A-FLOR-OVHD	Overhead items (overhangs, etc.)	2	0.18	8	9	X							
A-FLOR-PATT	Paving, tile, carpet patterns	0	0.18	8	9	X							
A-FLOR-PERI	Room perimeter shape (interior walls)	0	0.35	2	4	X							
A-FLOR-RAIS	Access (raised) flooring	0	0.25	3	2	X							
A-FLOR-SIGN	Signage	0	0.25	1	3	X							
A-FLOR-SPCL	Architectural specialties (e.g., toilet room accessories, display cases)	0	0.25	3	2	X							
A-FLOR-STRS	Stair risers/treads, escalators, ladders	0	0.25	1	3	X							
A-FLOR-TPTN	Toilet partitions	0	0.25	1	3	X							
A-FLOR-WDWK	Architectural woodwork (field built cabinets and counters)	0	0.25	3	2	X							
Windows													
A-GLAZ-FULL	Full height glazed walls and partitions (see A-WALL-CURT for curtain walls)	0	0.25	1	3	X							
A-GLAZ-IDEN	Window number and symbol	0	0.35	3	2	X							
A-GLAZ-PRHT	Windows and partial height glazed partitions	0	0.25	1	3	X							
A-GLAZ-SILL	Window sills	0	0.18	5	1	X							
Roof Information													
A-ROOF-CRKT	Crickets flow arrows flow info	0	0.25	1	3			X					
A-ROOF-DRNS	Roof drains	0	0.25	1	3			X					
A-ROOF-EXPJ	Expansion joints	0	0.18	5	1			X					
A-ROOF-GUTR	Roof internal gutters	0	0.18	8	9			X					
A-ROOF-HRAL	Stair handrails, nosings, guard rails	0	0.18	5	1			X					
A-ROOF-LEVL	Level changes	0	0.18	5	1			X					
A-ROOF-OTLN	Roof perimeter/edge, roof geometry	0	0.35	6	5			X					
A-ROOF-PATT	Roof surface patterns, hatching	0	0.18	8	9			X					
A-ROOF-PRPT	Parapet walls and wall caps	0	0.35	2	4			X					
A-ROOF-SKLT	Skylights	2	0.18	8	9			X					
A-ROOF-SPCL	Roof specialties, accessories, access hatches, dormers	0	0.25	3	2			X					
A-ROOF-STRS	Stair risers/treads, ladders	0	0.18	5	1			X					
A-ROOF-WALK	Roof walkways	0	0.25	3	2			X					
Walls													
A-WALL-CAVI	Cavity wall lines	0	0.18	8	9	X							
A-WALL-CNTR	Wall centerlines	7	0.25	5	1	X							
A-WALL-CURT	Curtain wall mullions and glass	0	0.25	1	3	X							
A-WALL-FIRE	Fire wall designators (patterning)	0	0.35	2	4	X							
A-WALL-FULL-EXTR	Exterior full height walls	0	0.35	2	4	X							
A-WALL-FULL-INTR	Interior full height walls	0	0.25	3	2	X							
A-WALL-HEAD	Door and window headers	0	0.25	1	3	X							
A-WALL-IDEN	Wall identification/type text or tags	0	0.35	3	2	X							
A-WALL-JAMB	Door and window jambs	0	0.25	1	3	X							
A-WALL-MESH	Mesh or wire wall	0	0.18	5	1	X							
A-WALL-MOVE	Moveable walls/partitions	0	0.18	5	1	X							
A-WALL-OPNG-LVRS	Louvers	0	0.25	1	3	X							
A-WALL-PATT	Wall insulation, hatching, and fill	INBATT	0.18	8	9	X							
A-WALL-PRHT	Partial height walls (do not appear on Reflected Ceiling Plan)	0	0.25	1	3	X							
A-WALL-SPCL	Wall-hung/attached specialties (e.g., fixtures, grab bars (incl. handicap), telephone booths)	0	0.25	1	3	X							

Discipline: Architectural
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types							
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Floor Plan	Reflected Ceiling Plan	Roof Plan	Equipment Plan	Area Calculations/Occupancy Plan	Elevations	Sections	Details
Elevations													
A-ELEV-IDEN	Component identification numbers	0	0.35	2	4						X		
A-ELEV-OTLN	Outlines	0	0.50	4	7						X		
A-ELEV-PATT	Textures and hatch patterns	0	0.18	8	9						X		
Sections													
A-SECT-IDEN	Component identification numbers	0	0.35	2	4							X	
A-SECT-MBND	Material beyond section cut	0	0.18	5	1							X	
A-SECT-MCUT	Material cut by section	V	V	V	V							X	
A-SECT-PATT	Textures and hatch patterns	0	0.18	8	9							X	
Detail Information													
A-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V								X

Note: V = Varies, NA = Not Applicable

Discipline: Interiors
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types					
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Furniture Plan	System Furniture Plan	Signage Placement Plan	Floor Patterns	Elevations	Details
AIA Format	Level/Layer Description										
General Information											
I-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X
I-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X
I-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X
I-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X
I-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X
I-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X
I-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X
I-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X
I-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X
Carpet/Carpet Tile											
I-CRPT-ROLL-ACNT	Carpet (roll goods) - accent color	0	V	1	3				X		
I-CRPT-ROLL-FILD	Carpet (roll goods) - field color	0	V	60	100				X		
I-CRPT-TILE-ACN1	Carpet tile - accent color	0	V	208	69				X		
I-CRPT-TILE-ACN2	Carpet tile - accent color	0	V	236	139				X		
I-CRPT-TILE-FILD	Carpet tile - field color	0	V	204	37				X		
Equipment											
I-EQPM-ACCS	Equipment access	2	0.18	8	9	X					
I-EQPM-CHLD	Child development (play toys, teaching rugs, play forms)	0	0.35	2	4	X					
I-EQPM-COPY	Copiers, fax machines, office equipment	0	0.35	2	4	X					
I-EQPM-FIXD	Fixed equipment	0	0.18	5	1	X					
I-EQPM-IDEN	Equipment identification numbers	0	0.25	1	3	X					
I-EQPM-MEDI	Medical (exam beds, dental chairs, etc.)	0	0.35	2	4	X					
I-EQPM-MOVE	Moveable equipment	2	0.18	5	1	X					
I-EQPM-OVHD	Overhead, ceiling mounted, and suspended equipment	0	0.25	3	2	X					
I-EQPM-STOR	Storage equipment	0	0.35	2	4	X					
Signage											
I-FLOR-SIGN	Signage	0	0.35	6	5			X			
Flooring Items and Materials											
I-FLRG-CONC	Concrete flooring	0	V	8	9				X		
I-FLRG-MATS	Entrance mat components and frames	0	V	4	7				X		
I-FLRG-STON	Stone flooring	0	V	153	104				X		
I-FLRG-TRAN	All floor thresholds and transition moldings	0	V	5	1				X		
I-FLRG-WOOD	Wood parquet tile or planks	0	V	22	22				X		
Furnishings											
I-FURN-ACCS	Accessories (vestibule mats, partitions, draperies, clocks, trash cans, lecturns, lamps, etc.)	0	0.25	1	3	X					
I-FURN-ADPC	Automated Data Processing Components	0	0.35	2	4	X					
I-FURN-ARTW	Artwork	0	0.35	2	4	X					
I-FURN-FLOR	Flooring (carpet, rugs, etc.)	0	0.35	2	4	X					
I-FURN-FREE	Free-standing furnishings (desks, beds, tables, dressers, credenzas, casegoods)	0	0.35	6	5	X					
I-FURN-GRID	Planning grid/modular outline	0	0.50	4	7	X					
I-FURN-IDEN	Furniture code identification	0	0.25	3	2	X					
I-FURN-PLNT	Plants	0	0.25	3	2	X					
I-FURN-SEAT	Seating (chairs, sofas, etc.)	0	0.35	2	4	X					
I-FURN-STOR	File cabinets, high density storage, shelving, storage cabinets	0	0.35	2	4	X					
Monolithic (Poured or Broadcast) Flooring											
I-MONO-SRFL-ACNT	Seamless resinous flooring - accent color	0	V	203	45				X		
I-MONO-SRFL-FILD	Seamless resinous flooring - field color	0	V	9	14				X		
I-MONO-TERR-ACN1	Terrazzo - accent color	0	V	144	199				X		

Discipline: Interiors
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types					
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Furniture Plan	System Furniture Plan	Signage Placement Plan	Floor Patterns	Elevations	Details
AIA Format	Level/Layer Description										
I-MONO-TERR-ACN2	Terrazzo - accent color	0	V	67	156				X		
I-MONO-TERR-FILD	Terrazzo - field color	0	V	239	163				X		
Resilient Flooring											
I-SHTP-ACNT	Sheet product (vinyl/rubber/linoleum) - accent color	0	V	190	245				X		
I-SHTP-FILD	Sheet product (vinyl/rubber/linoleum) - field color	0	V	241	179				X		
System Furniture											
I-SYST-FURN	Furniture	0	0.35	2	4		X				
I-SYST-IDEN	Code identification components	0	0.25	1	3		X				
I-SYST-IDPL	Code identification panels	0	0.25	1	3		X				
I-SYST-LITE	Lighting components	0	0.50	4	7		X				
I-SYST-PATT	Patterns	0	0.18	8	9		X				
I-SYST-PNLS	Panels	0	0.35	2	4		X				
I-SYST-POWR	Power, communication components	0	0.50	4	7		X				
I-SYST-STOR	Storage components	0	0.35	2	4		X				
I-SYST-WALL	System furniture partition walls	0	0.35	2	4		X				
I-SYST-WKSF	Work surface components	0	0.35	2	4		X				
Tile											
I-TILE-CERM-ACNT	Ceramic mosaic tile - accent color	0	V	153	104				X		
I-TILE-CERM-FILD	Ceramic mosaic tile - field color	0	V	124	39				X		
I-TILE-LINO-ACNT	Linoleum tile - accent color	0	V	236	139				X		
I-TILE-LINO-FILD	Linoleum tile - field color	0	V	60	100				X		
I-TILE-PORC-ACN1	Porcelain tile - accent color	0	V	78	244				X		
I-TILE-PORC-ACN2	Porcelain tile - accent color	0	V	9	14				X		
I-TILE-PORC-FILD	Porcelain tile - field color	0	V	128	71				X		
I-TILE-QUAR-ACNT	Quarry tile - accent color	0	V	2	4				X		
I-TILE-QUAR-FILD	Quarry tile - field color	0	V	30	86				X		
I-TILE-RUBB-ACNT	Rubber tile - accent color	0	V	209	93				X		
I-TILE-RUBB-FILD	Rubber tile - field color	0	V	20	6				X		
I-TILE-TERR-ACN1	Terrazzo tile - accent color	0	V	144	199				X		
I-TILE-TERR-ACN2	Terrazzo tile - accent color	0	V	67	156				X		
I-TILE-TERR-ACN3	Terrazzo tile - accent color	0	V	221	189				X		
I-TILE-TERR-FILD	Terrazzo tile - field color	0	V	239	163				X		
I-TILE-VNYL-ACN1	Vinyl or Vinyl composition tile - accent color	0	V	203	45				X		
I-TILE-VNYL-ACN2	Vinyl or Vinyl composition tile - accent color	0	V	115	48				X		
I-TILE-VNYL-FILD	Vinyl or Vinyl composition tile - field color	0	V	89	90				X		
Elevations											
I-ELEV-IDEN	Component identification numbers	0	0.25	1	3					X	
I-ELEV-OTLN	Outlines	0	0.50	4	7					X	
I-ELEV-PATT	Textures and hatch patterns	0	0.18	5	1					X	
Detail Information											
I-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V						X

Note: V = Varies, NA = Not Applicable

Patterning used within each material to differentiate colors shall match the color and level of the material.

Discipline: Fire Protection

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Life Safety Plan	Fire Suppression Plan	Fire Alarm/Detection Plan	Details
AIA Format	Level/Layer Description								
General Information									
F-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X
F-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X
F-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X
F-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X
F-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X
F-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X
F-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X
F-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X
F-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X
Aqueous Film Forming Foam System									
F-AFFF-EQPM	Equipment	0	0.35	82	18		X		
F-AFFF-PIPE	Piping	0	0.35	82	18		X		
CO2 Sprinkler System									
F-CO2S-EQPM	Equipment	0	0.35	6	5		X		
F-CO2S-PIPE	CO2 piping or CO2 discharge nozzle piping	0	0.35	6	5		X		
Control Panels									
F-CTRL-PANL	Control panels	0	0.50	23	46	X		X	
Floor Information									
F-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X	X	X	
F-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X	X	X	
Halon System									
F-HALN-EQPM	Equipment	0	0.35	22	22		X		
F-HALN-PIPE	Piping	0	0.35	22	22		X		
Inert Gas									
F-IGAS-EQPM	Equipment	0	0.35	162	33		X		
F-IGAS-PIPE	Piping	0	0.35	162	33		X		
Means of Egress Lighting									
F-LITE-EMER	Emergency fixtures	0	0.50	23	46	X			
F-LITE-EXIT	Exit fixtures	0	0.50	203	45	X			
Egress Requirements									
F-LSFT-EGRE	Egress requirements designator	0	0.35	6	5	X			
F-LSFT-OCCP	Occupant load for egress capacity	0	0.35	6	5	X			
F-LSFT-TRVL	Maximum travel distances	0	0.35	6	5	X			
Fire Protection System									
F-PROT-ALRM-INDC	Indicating appliances	0	0.50	83	42			X	
F-PROT-ALRM-MANL	Manual fire alarm pull stations	0	0.50	23	46	X		X	
F-PROT-EXTI	Fire extinguishers	0	0.35	2	4	X			
F-PROT-EXTI-CABN	Fire extinguisher cabinets	0	0.35	2	4	X			
F-PROT-HOSE	Fire hoses	0	0.35	2	4	X			
F-PROT-HOSE-CABN	Fire hose cabinets	0	0.35	2	4	X			
F-PROT-RATE-DOOR	Door fire ratings	0	0.50	4	7	X			
F-PROT-RATE-WALL	Wall fire ratings	0	0.50	4	7	X			
F-PROT-SMOK	Smoke detectors and heat sensors	0	0.50	23	46			X	
Smoke/Pressurization Control									
F-SMOK-DMPR	Dampers	0	0.35	22	22	X		X	
Sprinkler System									

Discipline: Fire Protection

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types			
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Life Safety Plan	Fire Suppression Plan	Fire Alarm/Detection Plan	Details
F-SPKL-CLHD	Sprinkler - ceiling heads	0	0.35	122	23		X		
F-SPKL-OTHD	Sprinkler - other heads	0	0.35	122	23		X		
F-SPKL-PIPE	Sprinkler piping	SPRINK	0.50	4	7		X		
F-SPKL-STAN	Standpipe system	0	0.35	122	23		X		
Water Supply and Distribution									
F-WATR-CONN	Fire department connections	0	0.35	122	23		X		
F-WATR-HYDT	Hydrants	0	0.35	122	23		X		
F-WATR-PIPE	Piping	FIRE	0.50	4	7		X		
F-WATR-PUMP	Fire pumps	0	0.35	122	23		X		
Detail Information									
F-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V				X

Note: V = Varies, NA = Not Applicable

Discipline: Plumbing
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Piping Plan	Riser Diagrams	Details
AIA Format	Level/Layer Description							
General Information								
P-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X
P-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X
P-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X
P-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X
P-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X
P-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X
P-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X
P-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X
P-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X
Domestic Water System								
P-DOMW-CPIP	Cold water piping	CLDWTR	0.50	123	31	X		
P-DOMW-EQPM	Hot and cold water equipment	0	0.70	7	0	X		
P-DOMW-EQPM-ACCS	Equipment access doors	0	0.35	82	18	X		
P-DOMW-FPIP	Domestic filtered water piping	0	0.50	83	42	X		
P-DOMW-HPIP	Hot water piping	HWTR, HWTRR	0.50	113	16	X		
P-DOMW-RISR	Hot and cold water risers	2	0.25	3	2	X		
Floor Information								
P-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X		
P-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X		
Graywater System								
P-GRAY-EQPM	Equipment	0	0.70	200	13	X		
P-GRAY-PIPE	Graywater piping	GRAY	0.50	200	13	X		
Laboratory Gas Piping								
P-LGAS-EQPM	Equipment	0	0.70	24	38	X		
P-LGAS-PIPE	Piping	OXYGEN, NITROG, HELIUM, HYDRGN	0.50	23	46	X		
Medical/Dental Gas Piping								
P-MDGS-CAIR	Compressed air	CMPAIR	0.50	83	42	X		
P-MDGS-EQPM	Equipment	0	0.70	24	38	X		
P-MDGS-NITG	Nitrogen piping	NITROG	0.50	23	46	X		
P-MDGS-NOXG	Nitrous oxide piping	NITOXI	0.50	23	46	X		
P-MDGS-OXYG	Pure O2 piping	OXYGEN	0.50	23	46	X		
P-MDGS-SAIR	Scavenge air	0	0.50	23	46	X		
P-MDGS-VACU	Medical vacuum piping	VACAIR	0.50	23	46	X		
Penetrations								
P-FLOR-PENE	Floor penetrations	2	0.25	3	2	X		
P-ROOF-PENE	Roof penetrations	2	0.25	1	3	X		
P-WALL-PENE	Wall penetrations	2	0.25	2	4	X		
Sanitary Sewer								
P-SSWR-CNDS	Condensate piping	0	0.50	83	42	X		
P-SSWR-EQPM	Equipment (e.g., sand/oil/water separators)	0	0.70	204	37	X		

Discipline: Plumbing
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Piping Plan	Riser Diagrams	Details
P-SSWR-DRNS	Floor drains, sinks, and cleanouts	0	0.35	6	5	X		
P-SSWR-PIPE	Piping	SSWAF	0.50	203	45	X		
P-SSWR-RISR	Sanitary risers	2	0.50	203	45	X		
P-SSWR-VENT	Vent piping	VENT	0.50	203	45	X		
Storm Drainage System								
P-STRM-PIPE	Storm drain piping	STRAF	0.50	163	41	X		
P-STRM-DRNS	Roof drains	0, ROOFDN	0.50	163	41	X		
P-STRM-RISR	Storm drain risers	2	0.50	163	41	X		
Diagram Information								
P-DIAG-GRPH	Graphics, gridlines, non-text items	V	V	V	V		X	
Detail Information								
P-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V			X

Note: V = Varies, NA = Not Applicable

Discipline: Mechanical

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types										
			Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	HVAC Plan	Specialty Piping and Equipment	Hydraulic Systems	HTCW Utilities Plan	Material Handling	Machine Design	Control Diagrams	Elevations	Sections	Details
AIA Format	Level/Layer Description															
General Information																
M-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text, weld symbols	0	V	V	V	V	X	X	X	X	X	X	X	X	X	X
M-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	V	X	X	X	X	X	X	X	X	X	X
M-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16		X	X	X	X	X	X	X	X	X	X
M-ANNO-NOTE	General notes and general remarks	0	0.35	2	4		X	X	X	X	X	X	X	X	X	X
M-ANNO-NPLT	Non-plotting graphic information (e.g., clearances and working space information)	0	0.18	5	1		X	X	X	X	X	X	X	X	X	X
M-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9		X	X	X	X	X	X	X	X	X	X
M-ANNO-RDME	Read-me information	0	0.18	5	1		X	X	X	X	X	X	X	X	X	X
M-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA		X	X	X	X	X	X	X	X	X	X
M-ANNO-SYMB	Miscellaneous symbols	V	V	6	5		X	X	X	X	X	X	X	X	X	X
M-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	V	X	X	X	X	X	X	X	X	X	X
Industrial Waste Piping																
M-ACID-EQPM	Acid, alkaline, and oil waste equipment	0	0.35	80	11			X								
M-ACID-PIPE	Acid, alkaline, and oil waste piping	ACIDWS, IWASTE	0.50	80	11			X								
M-ACID-VENT	Acid, alkaline, and oil waste vent piping	2	0.50	80	11			X								
Anti-Freeze																
M-AFRZ-EQPM	Anti-freeze equipment	0	0.35	82	18			X	X							
M-AFRZ-SPLY-PIPE	Anti-freeze supply piping	0	0.50	82	18			X	X							
M-AFRZ-WAST-PIPE	Anti-freeze waste piping	0	0.50	82	18			X	X							
Brine System																
M-BRIN-EQPM	Brine system equipment	0	0.35	123	31			X								
M-BRIN-RETN-PIPE	Brine system return piping	BRINER	0.50	123	31			X								
M-BRIN-SPLY-PIPE	Brine system supply piping	BRINES	0.50	123	31			X								
Chemical Treatment System																
M-CHEM-EQPM	Chemical treatment system equipment	0	0.35	123	31		X									
M-CHEM-RETN-PIPE	Chemical treatment system return piping	0	0.50	123	31		X									
M-CHEM-SPLY-PIPE	Chemical treatment system supply piping	0	0.50	123	31		X									
Compressed Air																
M-CMPA-EQPM	Equipment	0	0.70	84	34			X								
M-CMPA-PIPE	Piping	CMPAIR	0.50	83	42			X								
Condenser Water System																
M-CNDW-EQPM	Condenser water system equipment	0	0.35	83	42		X									
M-CNDW-RETN-PIPE	Condenser water system return piping	CONDWR	0.50	83	42		X									
M-CNDW-SPLY-PIPE	Condenser water system supply piping	CONDWS	0.50	83	42		X									
Controls																
M-CONT-THER	Thermostats	0	0.25	1	3		X		X							
M-CONT-WIRE	Low voltage wiring	1, 2	0.25	1	3		X									
Chilled Water System																
M-CWTR-CNDS	Condensate piping	CDRNAF	0.50	83	42		X									
M-CWTR-EQPM	Chilled water equipment	0	0.35	163	41		X									
M-CWTR-RETN-PIPE	Chilled water return piping	CWR	0.50	163	41		X									
M-CWTR-SPLY-PIPE	Chilled water supply piping	CWS	0.50	163	41		X									
Culvert Valves																
M-CVAL-BASE	Culvert valve machinery base	0	0.35	2	4				X							
M-CVAL-BEAM	Culvert valve beams	0	0.35	2	4				X							
M-CVAL-CYLD	Culvert valve machinery cylinder (outline not for details)	0	0.35	80	11				X							

Discipline: Mechanical

Model File Layers/Levels

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M-CVAL-SEAL	Culvert valve seals	0	0.35	3	2			X							
M-CVAL-SKIN	Culvert valve skin plate	0	0.35	1	3			X							
M-CVAL-STIF	Stiffener plates, angles, etc.	0	0.35	4	7			X							
M-CVAL-TRUN	Culvert valve trunnion beam	0	0.35	6	5			X							
Dual Temperature System															
M-DUAL-EQPM	Dual temperature system equipment	0	0.35	23	46	X									
M-DUAL-RETN-PIPE	Dual temperature system return piping	DTR	0.50	23	46	X									
M-DUAL-SPLY-PIPE	Dual temperature system supply piping	DTS	0.50	23	46	X									
Dust and Fume Collection Systems															
M-DUST-DUCT	Dust and fume ductwork	0	0.50	203	45	X									
M-DUST-DUCT-CNTR	Dust and fume ductwork centerlines	7	0.25	5	1	X									
M-DUST-EQPM	Dust and fume equipment	0	0.35	203	45	X									
M-DUST-GRIL	Dust and fume grilles	0	0.35	203	45	X									
Exhaust Air System															
M-EXHS-DUCT	Exhaust ductwork	V	0.50	83	42	X		X							
M-EXHS-DUCT-CNTR	Exhaust ductwork centerlines	7	0.25	5	1	X		X							
M-EXHS-EQPM	Exhaust equipment	0	0.35	83	42	X		X							
M-EXHS-GRIL	Grilles	0	0.35	83	42	X		X							
Floor Information															
M-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X	X	X							
M-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X	X	X							
Fuel Systems															
M-FUEL-DIES-RETN	Diesel fuel return piping	0	0.50	23	46			X							
M-FUEL-DIES-SPLY	Diesel fuel supply piping	0	0.50	23	46			X							
M-FUEL-DIES-VENT	Diesel fuel vent piping	0	0.50	23	46			X							
M-FUEL-EQPM	Equipment	0	0.70	24	38			X	X						
M-FUEL-GGEP-LQPG	Liquid petroleum gas	LIQPET	0.50	23	46			X	X						
M-FUEL-OGEP-RETN	Return oil piping	FUELOS	0.50	23	46			X	X						
M-FUEL-OGEP-SPLY	Supply oil piping	FUELOS	0.50	23	46			X	X						
M-FUEL-OGEP-VENT	Oil piping vent	FUELOV	0.50	23	46			X							
Glycol System															
M-GLYC-EQPM	Glycol system equipment	0	0.35	82	18	X	X								
M-GLYC-RETN-PIPE	Glycol system return piping	GHR	0.50	82	18	X	X								
M-GLYC-SPLY-PIPE	Glycol system supply piping	GHS	0.50	82	18	X	X								
Geothermal Heat Pump System															
M-GTHP-EQPM	Geothermal heat pump system equipment	0	0.35	203	45	X			X						
M-GTHP-RETN-PIPE	Geothermal heat pump system return piping	0	0.50	203	45	X			X						
M-GTHP-SPLY-PIPE	Geothermal heat pump system supply piping	0	0.50	203	45	X			X						
Hydraulic Control Systems (Hydraulic Fluid)															
M-HCSF-CYLD	Hydraulic cylinders	0	0.35	7	0			X							
M-HCSF-CYLD-PSTN	Hydraulic cylinder pistons	0	0.35	5	1			X							
M-HCSF-CYLD-WEAR	Wear rings	0	0.35	3	2			X							
M-HCSF-EQPM	Hydraulic system equipment	0	0.35	200	13		X	X							
M-HCSF-FTTG	Hose and pipe fittings	0	0.35	4	7			X							
M-HCSF-HOSE	Hydraulic hoses	0	0.35	4	7			X							
M-HCSF-MOTR	Hydraulic motors and actuators	0	0.35	7	0			X							

Discipline: Mechanical

Model File Layers/Levels

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AIA Format	Level/Layer Description														
M-HCSF-OTLN	Outlines of machinery, etc. in the vicinity of the hydraulic components	0	0.35	80	11			X							
M-HCSF-PUMP	Hydraulic pumps and pump motors	0	0.35	7	0			X							
M-HCSF-RETN-PIPE	Hydraulic system return piping	0	0.50	120	12		X	X							
M-HCSF-ROOM	Floor, walls, etc. that hydraulic system attaches to	0	0.35	5	1			X							
M-HCSF-SCHM-MISC	Miscellaneous schematic figures (i.e., common location lines)	0	0.35	6	5			X							
M-HCSF-SUPT	Pipe supports, hangers, etc.	0	0.35	20	6			X							
M-HCSF-SPLY-PIPE	Hydraulic system supply piping	0	0.50	200	13		X	X							
M-HCSF-VALV	Hydraulic valves	0	0.35	6	5			X							
M-HCSF-VALV-CONT	Hydraulic directional control valves	0	0.35	6	5			X							
M-HCSF-VALV-FLOW	Flow control valves, check valves, etc.	0	0.35	6	5			X							
M-HCSF-VALV-PRES	Pressure control valves: relief valves, counterbalance valves, etc.	0	0.35	6	5			X							
M-HCSF-VALV-SOFF	Hydraulic shutoff type valves (ball, gate, etc.)	0	0.35	6	5			X							
Hydraulic Control Systems (Water)															
M-HCSW-DEVC	Stilling wells, rigid anchors, anchor guides, rectifiers, reducers, markers, meters, regulators, tanks, and valves	0	0.35	6	5			X							
M-HCSW-DEVC-IDEN	Device identifiers	0	0.25	6	5			X							
M-HCSW-EQPM-ACCS	Equipment access doors	0	0.25	3	2			X							
M-HCSW-PUMP	Pump station equipment	0	0.35	6	5			X							
M-HCSW-PUMP-FLOW	Flow direction arrows	0	0.25	3	2			X							
M-HCSW-PUMP-FTTG	Caps and flanges	0	0.35	6	5			X							
M-HCSW-PUMP-IDEN	Pump identifier tags, symbol modifiers, and text	0	0.25	2	4			X							
M-HCSW-PUMP-PIPE	Pump piping (includes fittings and valves)	0	0.50	163	41			X							
High Temperature/Chilled Water System															
M-HTCW-CWTR-MAIN	Main chilled water piping	0	0.35	163	41	X			X						
M-HTCW-CWTR-PLNT	Chilled water plant	0	0.35	163	41	X			X						
M-HTCW-CWTR-SERV	Chilled water service piping	0	0.25	163	41	X		X	X						
M-HTCW-DEVC	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves	0	0.35	6	5	X			X						
M-HTCW-FLOW	Flow direction arrows	0	0.25	3	2	X			X						
M-HTCW-FTTG	Caps and flanges	0	0.35	6	5	X		X	X						
M-HTCW-HWTR-MAIN	Main high temperature piping	0	0.35	113	16	X			X						
M-HTCW-HWTR-PLNT	High temperature water plant	0	0.35	113	16	X			X						
M-HTCW-HWTR-SERV	High temperature service piping	0	0.25	113	16	X			X						
M-HTCW-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4	X			X						
M-HTCW-JBOX	Junction boxes, manholes, handholes, test boxes	0	0.25	1	3	X			X						
M-HTCW-LWTR-MAIN	Main low temperature piping	0	0.35	1	3	X			X						
M-HTCW-LWTR-SERV	Low temperature service piping	0	0.25	1	3	X		X	X						
M-HTCW-PITS	Valve pits/vaults, steam pits	0	0.25	3	2	X			X						
M-HTCW-RETN-PIPE	Return for all HTCW lines	0	0.18	5	1	X			X						
M-HTCW-STEM-MAIN	Main steam piping	0	0.35	113	16	X			X						
M-HTCW-STEM-SERV	Steam service piping	0	0.25	113	16	X		X	X						
M-HTCW-STNS-PUMP	Pump stations	0	0.35	6	5	X			X						
HVAC System															
M-HVAC-ACCS	Equipment access doors	0, 1, 2	0.25	3	2	X		X							
M-HVAC-CDFF	Ceiling diffusers, registers, and grilles	0	0.35	20	6	X		X							
M-HVAC-DMPR	Fire, smoke, volume dampers	0	0.25	1	3	X		X							
M-HVAC-EQPM	Equipment (non-powered)	0	0.35	2	4	X		X							
M-HVAC-EOPM-EFAN	Equipment with electric fans or motors	0	0.35	2	4	X		X							

Discipline: Mechanical

Model File Layers/Levels

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M-HVAC-EQPM-EPIP	Equipment with piping and electricity	0	0.35	2	4	X		X							
M-HVAC-EQPM-FLOR	Equipment - floor mounted	0	0.35	2	4	X		X							
M-HVAC-EQPM-SUSP	Equipment - suspended	0	0.35	2	4	X		X							
M-HVAC-FDFF	Floor diffusers, registers, and grilles	0	0.35	162	33	X		X							
M-HVAC-IDEN	Duct sizes and pressure classes	0	0.35	6	5	X		X							
M-HVAC-RDFF	Return air diffusers	0	0.35	23	46	X		X							
M-HVAC-RETN	Return ductwork	V	0.50	23	46	X		X							
M-HVAC-RETN-CNTR	Return ductwork centerlines	7	0.25	5	1	X		X							
M-HVAC-ROOF	Roof mounted HVAC equipment	0	0.35	2	4	X		X							
M-HVAC-SPLY	Supply ductwork	V	0.50	4	7	X		X							
M-HVAC-SPLY-CNTR	Supply ductwork centerlines	7	0.25	5	1	X		X							
M-HVAC-SPLY-HDUC	Supply ductwork - high pressure	V	0.50	4	7	X		X							
M-HVAC-SPLY-LDUC	Supply ductwork - low pressure	V	0.50	4	7	X		X							
M-HVAC-TAGS	Diffuser/register/grille tags and air flow arrows	0	0.35	6	5	X		X							
M-HVAC-WDFF	Wall diffusers, registers, and grilles	0	0.35	2	4	X		X							
Hot Water Heating System															
M-HWTR-EQPM	Hot water heating system equipment	0	0.35	113	16	X		X							
M-HWTR-RETN-PIPE	Hot water heating system return piping	HWR, HTHWR	0.50	113	16	X		X							
M-HWTR-SPLY-PIPE	Hot water heating system supply piping	HWS, HTHWS	0.50	113	16	X		X							
Insulating (Transformer) Oil System															
M-INSL-EQPM	Insulating oil equipment	0	0.35	200	13		X								
M-INSL-RETN-PIPE	Insulating oil return piping	0	0.50	200	13		X								
M-INSL-SPLY-PIPE	Insulating oil supply piping	0	0.50	200	13		X								
Lubrication Oil															
M-LUBE-EQPM	Lubrication oil equipment	0	0.35	200	13		X	X							
M-LUBE-RETN-PIPE	Lubrication oil return piping	0	0.50	200	13		X	X							
M-LUBE-SPLY-PIPE	Lubrication oil supply piping	0	0.50	200	13		X	X							
Machine Design															
M-MACH-AXLE	Shafts and axles	0	0.35	2	4			X			X				
M-MACH-BASE	Machinery bases	0	0.35	2	4			X			X				
M-MACH-BEAR	Bearings and couplings	0	0.35	2	4			X			X				
M-MACH-BELT	Wire rope, chains, and belts	0	0.35	22	22			X			X				
M-MACH-BSHG	Bushings, wear plates, shims, and spacers	0	0.35	2	4			X			X				
M-MACH-CLEV	Clevises	0	0.35	22	22			X			X				
M-MACH-COMP	Miscellaneous machinery parts and components	0	0.35	2	4			X			X				
M-MACH-COVR	Machinery covers, cover plates, and guarding	0	0.35	4	7			X			X				
M-MACH-FSTN	Fasteners, nuts, and bolts	0	0.35	2	4			X			X				
M-MACH-GEAR	Gears	0	0.35	6	5			X			X				
M-MACH-KEYS	Keys and keeper plates	0	0.35	22	22			X			X				
M-MACH-LROT	Large rotating machinery (turbine and pump outlines)	0	0.35	6	5			X			X				
M-MACH-MOTR	Machinery motors	0	0.35	6	5			X			X				
M-MACH-PINS	Pins	0	0.35	22	22			X			X				
M-MACH-PULL	Pulleys, drums, and sheaves	0	0.35	22	22			X			X				
M-MACH-RAIL	Rails (e.g., crane rails, rail hoots, splice plates, etc.)	0	0.35	22	22			X			X				
M-MACH-ROLL	Rollers and wheels	0	0.35	22	22			X			X				
M-MACH-ROLL-TRAK	Roller tracks	0	0.35	22	22			X			X				

Discipline: Mechanical

Model File Layers/Levels

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M-MACH-SEAL	Seals	0	0.35	22	22			X			X				
M-MACH-SHOE	Sliding shoes, skids, etc.	0	0.35	22	22			X			X				
M-MACH-SUPT	Support brackets	0	0.35	2	4			X			X				
M-MACH-SPRG	Springs	0	0.35	22	22			X			X				
Mixed Air System															
M-MAIR-DUCT	Mixed air ductwork	0	0.50	7	0	X									
M-MAIR-DUCT-CNTR	Mixed air ductwork centerlines	7	0.25	5	1	X									
M-MAIR-EQPM	Mixed air equipment	0	0.35	7	0	X									
Material Handling Equipment															
M-MATL-CRAN	Cranes	0	0.35	2	4			X		X					
M-MATL-CRAN-BOOM	Crane boom	0	0.35	2	4			X		X					
M-MATL-HOIS	Hoists	0	0.35	2	4			X		X					
M-MATL-HOOK	Hooks, eyes, and other end attachments	0	0.35	2	4			X		X					
M-MATL-LIFT	Miscellaneous lifting equipment	0	0.35	6	5			X		X					
M-MATL-WIRE	Wire rope, chains, and other hoisting medium	0	0.35	6	5			X		X					
Miter Gates															
M-MITR-BASE	Miter gate machinery base	0	0.35	2	4			X							
M-MITR-CLEV	Clevises	0	0.35	22	22			X							
M-MITR-CRNG	Cardanic ring	0	0.35	3	2			X							
M-MITR-CYLD	Miter gate machinery cylinder (outline not for details)	0	0.35	80	11			X							
M-MITR-TRUN	Miter gate machinery trunnion	0	0.35	1	3			X							
Makeup Air System															
M-MKUP-DUCT	Makeup air ductwork	0	0.50	2	4	X									
M-MKUP-DUCT-CNTR	Makeup air ductwork centerlines	7	0.25	5	1	X									
M-MKUP-EQPM	Makeup air equipment	0	0.35	2	4	X									
M-MKUP-GRIL	Makeup air grilles	0	0.35	2	4	X									
Natural Gas System															
M-NGAS-EQPM	Natural gas equipment	0	0.35	6	5		X	X							
M-NGAS-PIPE	Natural gas piping	NTGASN	0.35	6	5		X	X							
Penetrations															
M-FLOR-PENE	Floor penetrations	2	0.25	3	2	X	X	X							
M-ROOF-PENE	Roof penetrations	2	0.25	1	3	X	X	X							
M-WALL-PENE	Wall penetrations	2	0.25	2	4	X	X	X							
Process Piping															
M-PROC-EQPM	Process equipment	0	0.35	120	12		X								
M-PROC-RETN-PIPE	Process return piping	0	0.50	120	12		X								
M-PROC-SPLY-PIPE	Process supply piping	0	0.50	120	12		X								
Relief Air System															
M-RAIR-DUCT	Relief air ductwork	0	0.50	1	3	X									
M-RAIR-DUCT-CNTR	Relief air ductwork centerlines	7	0.25	5	1	X									
M-RAIR-EQPM	Relief air equipment	0	0.35	1	3	X									
M-RAIR-GRIL	Relief air grilles	0	0.35	1	3	X									
Energy Recovery System															
M-RCOV-EQPM	Energy recovery system equipment	0	0.35	203	45	X									
M-RCOV-RETN-PIPE	Energy recovery system return piping	0	0.50	203	45	X									
M-RCOV-SPLY-PIPE	Energy recovery system supply piping	0	0.50	203	45	X									

Discipline: Mechanical

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Refrigeration System															
M-REFG-DISC-PIPE	Refrigeration system discharge	REFRD	0.50	163	41	X									
M-REFG-EQPM	Refrigeration system equipment	0	0.35	163	41	X									
M-REFG-RETN-PIPE	Refrigeration system return piping	REFRS	0.50	163	41	X									
M-REFG-SPLY-PIPE	Refrigeration system supply piping	REFRL	0.50	163	41	X									
Raw Water Piping															
M-RWTR-EQPM	Raw water equipment	0	0.35	123	31		X	X							
M-RWTR-RETN-PIPE	Raw water return piping	0	0.50	123	31		X	X							
M-RWTR-SPLY-PIPE	Raw water supply piping	0	0.50	123	31		X	X							
Steam System															
M-STEM-BLBD	Boiler blow down piping	BOILBD	0.50	113	16	X									
M-STEM-CNDS	Condensate piping	CDRNAF	0.50	83	42	X									
M-STEM-EQPM	Steam system equipment	0	0.35	113	16	X									
M-STEM-HPIP	High pressure steam piping	STEAMH	0.50	113	16	X									
M-STEM-LPIP	Low pressure steam piping	STEAML	0.50	1	3	X									
M-STEM-MPIP	Medium pressure steam piping	STEAMM	0.50	2	4	X									
Transfer Air System															
M-TAIR-DUCT	Transfer air ductwork	0	0.50	200	13	X									
M-TAIR-DUCT-CNTR	Transfer air ductwork centerlines	7	0.25	5	1	X									
M-TAIR-EQPM	Transfer air equipment	0	0.35	200	13	X									
Diagram Information															
M-DIAG-GRPH	Graphics, gridlines, non-text items	V	V	V	V							X			
Elevations															
M-ELEV-IDEN	Component identification numbers	0	0.35	2	4								X		
M-ELEV-OTLN	Outlines	0	0.35	6	5								X		
M-ELEV-PATT	Textures and hatch patterns	0	0.18	8	9								X		
Sections															
M-SECT-IDEN	Component identification numbers	0	0.35	2	4									X	
M-SECT-MBND	Material beyond section cut	0	0.18	5	1									X	
M-SECT-MCUT	Material cut by section	0	0.50	4	7									X	
M-SECT-PATT	Textures and hatch patterns	0	0.18	8	9									X	
Detail Information															
M-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V										X

Note: V = Varies, NA = Not Applicable

Discipline: Electrical
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types								
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Lighting Plan	Power Plan	Special Systems Plan	Grounding System Plan	Electrical Utilities Plan	Exterior Communication Systems Plan	Airfield Lighting Plan	Details	Riser/One-Line Diagrams
AIA Format	Level/Layer Description													
General Information														
E-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X	X	X	X	X	X	X
E-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X
E-ANNO-MASK	Text/shape mask for use with photo backgrounds	0	0.18	113	16	X	X	X	X	X	X	X	X	X
E-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X	X	X	X	X	X	X
E-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X	X	X	X	X	X	X
E-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X	X	X	X	X	X	X
E-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X	X	X	X	X	X	X
E-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X	X	X	X	X	X	X
E-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X	X	X	X	X	X	X
E-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X	X	X	X	X	X	X
Airfields														
E-AFLD-BCNS-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	203	45							X		
E-AFLD-BCNS-MISC	Miscellaneous nav aids - windcones and beacons	0	0.50	203	45							X		
E-AFLD-BCNS-STRB	Strobe beacons	0	0.50	203	45							X		
E-AFLD-CIRC-CTRL	Control and monitoring circuits	0	0.50	163	41							X		
E-AFLD-CIRC-IDEN	Circuit identifier tags, symbol modifier, and text	0	0.35	2	4							X		
E-AFLD-CIRC-MULT	Multiple circuits	0	0.50	23	46							X		
E-AFLD-CIRC-SERS	Series circuits	0	0.50	203	45							X		
E-AFLD-DEVC	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	0	0.50	23	46							X		
E-AFLD-DBNK	Ductbanks	EUUDCN	0.50	83	42							X		
E-AFLD-JBOX	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	0	0.50	23	46							X		
E-AFLD-LITE-APPR	Approach lights	0	0.50	203	45							X		
E-AFLD-LITE-DIST	Distance and arresting gear markers	0	0.50	203	45							X		
E-AFLD-LITE-LANE	Hoverlane, taxilane, and helipad lights	0	0.50	203	45							X		
E-AFLD-LITE-OBST	Obstruction lights	0	0.50	203	45							X		
E-AFLD-LITE-RUNW	Runway lights	0	0.50	203	45							X		
E-AFLD-LITE-SIGN	Taxiway guidance signs	0	0.50	203	45							X		
E-AFLD-LITE-TAXI	Taxiway lights	0	0.50	203	45							X		
E-AFLD-LITE-THRS	Threshold lights	0	0.50	203	45							X		
E-AFLD-VALT	Airfield lighting vaults	0	0.50	203	45							X		
Alarm System														
E-ALRM-EQPM	Alarm system equipment	0	0.50	203	45			X						
E-ALRM-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Bell System														
E-BELL-EQPM	Bell system equipment	0	0.50	203	45			X						
E-BELL-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Cable System														
E-CABL-COAX	Coax cable	2	0.50	83	42			X						
E-CABL-FIBR	Fiber optics cable	FIBOPT	0.50	83	42			X						
E-CABL-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
E-CABL-MULT	Multi-conductor cable	V	0.50	83	42			X						
E-CABL-TRAY	Cable trays and wireways	0, WIREWY	0.50	203	45		X	X						
Cathodic Protection System														
E-CATH-ANOD	Sacrificial anode system	0	0.50	83	42					X				
E-CATH-CURR	Impress current system	0	0.50	83	42					X				

Discipline: Electrical
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Lighting Plan	Power Plan	Special Systems Plan	Grounding System Plan	Electrical Utilities Plan	Exterior Communication Systems Plan	Airfield Lighting Plan	Details	Riser/One-Line Diagrams	
AIA Format	Level/Layer Description														
E-CATH-IDEN	Identifier tags, symbol modifier, and text	0	0.35	83	42					X					
E-CATH-TEST	Test stations	0	0.50	83	42					X					
Cable TV System															
E-CATV-EQPM	Cable TV system equipment	0, CABLTV	0.50	203	45			X							
E-CATV-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X							
Closed-Circuit Television System															
E-CCTV-EQPM	Closed-circuit television system equipment	0, CCTV	0.50	203	45			X							
E-CCTV-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X							
Clock System															
E-CLOK-EQPM	Clock system equipment	0	0.50	203	45			X							
E-CLOK-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X							
Communications															
E-COMM-CIRC	Circuits	0	0.50	23	46						X				
E-COMM-CNMB	Communication circuit numbers (e.g., panel/circuit number, wire/conduit size)	0	0.35	2	4						X				
E-COMM-EQPM	Other communications distribution equipment	0	0.50	23	46						X				
E-COMM-JBOX	Communication junction boxes, pull boxes, handholes, pedestals, and splices	0	0.50	23	46						X				
E-COMM-MHOL	Manholes	0	0.50	23	46						X				
E-COMM-OVHD	Overhead communications/telephone lines	COMARN	0.50	4	7						X				
E-COMM-OVHD-IDEN	Identifier tags, symbol modifier and text	0	0.35	4	7						X				
E-COMM-POLE	Poles	0	0.50	203	45						X				
E-COMM-POLE-GUYS	Guying equipment	0	0.50	203	45						X				
E-COMM-POLE-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	203	45						X				
E-COMM-UGND	Underground communications/telephone lines	COMUGN	0.50	4	7						X				
E-COMM-UGND-IDEN	Identifier tags, symbol modifier and text	0	0.35	4	7						X				
Central Dictation System															
E-DICT-EQPM	Central dictation system equipment	0	0.50	203	45			X							
E-DICT-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X							
Underground Ductbanks (to be used when multiple systems are in one ductbank system)															
E-DBNK-MULT	Ductbank	EUDUCN	0.50	83	42					X	X				
E-DBNK-MULT-IDEN	Identifier tags, symbol modifier and text	0	0.35	83	42					X	X				
Energy Monitoring Control Systems															
E-EMCS-EQPM	Energy monitoring control system equipment	0	0.50	203	45			X							
E-EMCS-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X							
Floor Information															
E-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X	X	X							
E-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X	X	X							
Ground System															
E-GRND-CIRC	Circuits	0	0.50	4	7				X						
E-GRND-DIAG	Ground system diagram	0	0.50	163	41				X						
E-GRND-EQUI	Equipotential ground system	0	0.50	83	42				X						
E-GRND-REFR	Reference ground system	0	0.50	23	46				X						
Intercom/PA System															
E-INTC-EQPM	Intercom system equipment	0	0.50	203	45			X							
E-INTC-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X							
Lighting															
E-LITE-CIRC	Lighting circuits (including crosslines and homeruns)	0	0.50	83	42	X									

Discipline: Electrical
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types								
AIA Format	Level/Layer Description	Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Lighting Plan	Power Plan	Special Systems Plan	Grounding System Plan	Electrical Utilities Plan	Exterior Communication Systems Plan	Airfield Lighting Plan	Details	Riser/One-Line Diagrams
E-LITE-CLNG	Ceiling mounted (surface/pendant) fixtures	0	0.50	203	45	X								
E-LITE-CNMB	Lighting circuit numbers (e.g., panel/circuit number, wire/conduit size)	0	0.35	2	4	X								
E-LITE-EMER	Emergency fixtures (outline of light (if ceiling mounted) should go on E-LITE-CLNG)	0	0.50	23	46	X								
E-LITE-EXIT	Exit fixtures (outline of light (if ceiling mounted) should go on E-LITE-CLNG)	0	0.50	203	45	X								
E-LITE-EXTR	Exterior lights	0	0.50	203	45					X				
E-LITE-EXTR-IDEN	Exterior light identifier tags, symbol modifiers, and text	0	0.35	203	45					X				
E-LITE-FLOR	Floor mounted fixtures (e.g., stage)	0	0.50	203	45	X								
E-LITE-IDEN	Light fixture identifier tags	0	0.35	2	4	X								
E-LITE-JBOX	Junction boxes	0	0.50	83	42	X								
E-LITE-PANL	Main distribution panels, switchboards, lighting panels	0	0.50	4	7	X								
E-LITE-ROOF	Roof lighting	0	0.50	203	45	X								
E-LITE-SPCL	Special fixtures	0	0.50	203	45	X								
E-LITE-SWCH	Lighting contactors, photoelectric controls, low-voltage lighting controls, etc.	0	0.50	163	41	X								
E-LITE-WALL	Wall mounted fixtures	0	0.50	203	45	X								
Lightning Protection System														
E-LTNG-COND	Lightning protection conductors	0	0.50	203	45				X					
E-LTNG-TERM	Lightning protection terminals	0	0.35	2	4				X					
Nurse Call/Paging System														
E-NURS-EQPM	Nurse call/paging system equipment	0	0.50	203	45			X						
E-NURS-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X						
Power														
E-POWR-BUSW	Busways	0, BUSWAY	0.50	203	45		X							
E-POWR-CIRC	Power circuits (including crosslines and homeruns)	V	0.50	83	42		X							
E-POWR-CLNG	Ceiling outlets (receptacles and switches)	0	0.50	83	42		X							
E-POWR-CNDT	Conduit	0	0.50	83	42		X							
E-POWR-CNMB	Power circuit numbers (e.g., panel/circuit number, wire/conduit size)	0	0.35	2	4		X							
E-POWR-DEVC	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	0	0.50	23	46					X				
E-POWR-DSCO	Disconnect switches	0	0.50	163	41		X			X				
E-POWR-FEED	Feeders	0	0.50	203	45		X							
E-POWR-GENR	Generators and auxiliary equipment	0	0.50	4	7		X							
E-POWR-JBOX	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	0	0.50	83	42		X	X		X				
E-POWR-MOTR	Motors and utilization equipment	0	0.50	4	7		X							
E-POWR-PANL	Panelboards, MCC, backing boards, patch panel racks	0	0.50	4	7		X	X						
E-POWR-POLE	Power poles	0	0.50	203	45					X				
E-POWR-POLE-GUYS	Guying equipment	0	0.50	203	45					X				
E-POWR-POLE-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	203	45					X				
E-POWR-SBST	Substation equipment	0	0.50	23	46					X				
E-POWR-SWBD	Switchboards	0	0.50	4	7		X	X						
E-POWR-SWCH	Fuse cutouts, motor starters, contactors, pole mounted switches, circuit breakers, reclosers, cubicle switches	0	0.50	163	41		X			X				
E-POWR-URAC	Underfloor raceways	3	0.50	203	45		X							
E-POWR-WALL	Wall/floor outlets (receptacles and switches)	0	0.50	83	42		X							
E-POWR-XFMR-PADM	Pad mounted transformers	0	0.50	23	46					X				
E-POWR-XFMR-POLM	Pole mounted transformers	0	0.50	23	46					X				
Primary Electrical Cables														
E-PRIM-OVHD	Overhead electrical utility lines	EPARN	0.50	4	7					X				
E-PRIM-OVHD-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	4	7					X				

Discipline: Electrical
Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types									
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Lighting Plan	Power Plan	Special Systems Plan	Grounding System Plan	Electrical Utilities Plan	Exterior Communication Systems Plan	Airfield Lighting Plan	Details	Riser/One-Line Diagrams	
AIA Format	Level/Layer Description														
E-PRIM-UGND	Underground electrical utility lines	EPUGN	0.50	4	7					X					
E-PRIM-UGND-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	4	7					X					
Secondary Electrical Cables															
E-SECD-OVHD	Overhead electrical utility lines	ESARN	0.50	163	41					X					
E-SECD-OVHD-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	163	41					X					
E-SECD-UGND	Underground electrical utility lines	ESUGN	0.50	163	41					X					
E-SECD-UGND-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	163	41					X					
Security System															
E-SERT-ACCS	Access control system	0	0.50	23	46			X							
E-SERT-CLNG	Ceiling mounted sensors	0	0.50	23	46			X							
E-SERT-FLOR	Floor mounted sensors	0	0.50	23	46			X							
E-SERT-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X							
E-SERT-UNDR	Buried sensors	0	0.50	23	46			X							
E-SERT-WALL	Wall mounted sensors	0	0.50	23	46			X							
Sound System															
E-SOUN-EQPM	Sound system equipment	0	0.50	203	45			X							
E-SOUN-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X							
Special Systems															
E-SPCL-SYST	Special systems (UMCS, EMCS, CATV, etc.)	0	0.50	203	45					X					
E-SPCL-SYST-IDEN	Special systems (UMCS, EMCS, CATV, etc.) identifier tags, symbol modifier, and text	0	0.35	203	45					X					
E-SPCL-TRAF	Traffic signal system	0	0.50	203	45					X					
E-SPCL-TRAF-IDEN	Traffic signal identifier tags, symbol modifier, and text	0	0.35	203	45					X					
TV Antenna System															
E-TVAN-EQPM	Television antenna system equipment	0	0.50	203	45			X							
E-TVAN-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4			X							
Other Discipline Information															
E-DISC-INFO	Clearances and working space information (NEC code, etc.)	0	0.25	3	2	X	X	X		X	X	X	X	X	
Detail Information															
E-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V								X		
Diagram Information															
E-DIAG-GRPH	Graphics, gridlines, non-text items	V	V	V	V									X	
E-DIAG-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4									X	

Note: V = Varies, NA = Not Applicable

Discipline: Telecommunications

Model File Layers/Levels

Level/Layer Naming		Graphic Defaults				Model File Types		
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #	Telephone/Data Plan	Riser Diagrams	Details
AIA Format	Level/Layer Description							
General Information								
T-ANNO-DIMS	Witness/extension lines, dimension terminators, dimension text	0	V	V	V	X	X	X
T-ANNO-KEYN	Reference keynotes with associated leaders	0	V	V	V	X	X	X
T-ANNO-NOTE	General notes and general remarks	0	0.35	2	4	X	X	X
T-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1	X	X	X
T-ANNO-PATT	Patterning, poche, shading, and hatching	V	0.18	8	9	X	X	X
T-ANNO-RDME	Read-me information	0	0.18	5	1	X	X	X
T-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA	X	X	X
T-ANNO-SYMB	Miscellaneous symbols	V	V	6	5	X	X	X
T-ANNO-TEXT	Miscellaneous text and callouts with associated leaders	0	V	V	V	X	X	X
Cable System								
T-CABL-COAX	Coax cable	2	0.50	83	42	X		
T-CABL-FIBR	Fiber optics cable	FIBOPT	0.50	83	42	X		
T-CABL-IDEN	Cable identifiers	0	0.35	2	4	X		
T-CABL-MULT	Multi-conductor cable	0	0.50	83	42	X		
T-CABL-TRAY	Cable trays and wireways	0	0.50	203	45	X		
Communications								
T-COMM-CIRC	Circuits	0	0.50	83	42	X		
T-COMM-CNMB	Circuit numbers	0	0.50	83	42	X		
T-COMM-EQPM	Equipment	0	0.50	83	42	X		
T-COMM-JBOX	Junction boxes	0	0.50	83	42	X		
Equipment								
T-EQPM-COMB	Distribution equipment for both copper and fiber optics	0	0.50	4	7	X		
T-EQPM-COPP	Distribution equipment for copper	0	0.50	4	7	X		
T-EQPM-FIBR	Distribution equipment for fiber optic	0	0.50	4	7	X		
T-EQPM-OTHR	Other telecommunications equipment	0	0.50	4	7	X		
T-EQPM-RELA	Relays, resistors, capacitors, and inducers	0	0.50	4	7	X		
Floor Information								
T-FLOR-IDEN	Room name, space identification text (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X		
T-FLOR-NUMB	Room/space identification number and symbol (copied from Architectural - Floor Plan model file)	0	0.25	3	2	X		
Jacks								
T-COMB-JACK	Combination telephone and data/LAN jacks	0	0.50	203	45	X		
T-DATA-JACK	Data/LAN jacks	0	0.50	203	45	X		
T-PHON-JACK	Telephone jacks	0	0.50	203	45	X		
Other Discipline Information								
T-DISC-INFO	Information and notes for other disciplines	V	V	V	V	X	X	
Diagram Information								
T-DIAG-GRPH	Graphics, gridlines, non-text items	V	V	V	V		X	
T-DIAG-IDEN	Identifier tags, symbol modifiers, and text	0	0.35	2	4		X	
Detail Information								
T-DETL-GRPH	Graphics, gridlines, non-text items	V	V	V	V			X

Note: V = Varies, NA = Not Applicable

Appendix B

Sheet File Level/Layer Assignment Tables

This appendix provides the sheet file level/layer assignment tables:

General.....	B3
Hazardous Materials	B4
Survey/Mapping.....	B5
Geotechnical	B6
Civil	B7
Landscape	B8
Structural.....	B9
Architectural	B10
Interiors	B11
Fire Protection.....	B12
Plumbing.....	B13
Mechanical.....	B14
Electrical	B15
Telecommunications	B16

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Discipline: General

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
G-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
G-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
G-ANNO-LEGN	Legends and symbol keys	0	V	V	V
G-ANNO-MATC	Match lines	0	0.70	7	0
G-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
G-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
G-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
G-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
G-ANNO-REDL	Redlines	0	0.25	1	3
G-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
G-ANNO-REVC	Revision clouds	0	0.35	4	7
G-ANNO-REVS	Revision indicators and text	0	0.35	4	7
G-ANNO-SCHD	Schedules	0	V	V	V
G-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
G-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Hazardous Materials

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
H-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
H-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
H-ANNO-LEGN	Legends and symbol keys	0	V	V	V
H-ANNO-MATC	Match lines	0	0.70	7	0
H-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
H-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
H-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
H-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
H-ANNO-REDL	Redlines	0	0.25	1	3
H-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
H-ANNO-REVC	Revision clouds	0	0.35	4	7
H-ANNO-REVS	Revision indicators and text	0	0.35	4	7
H-ANNO-SCHD	Schedules	0	V	V	V
H-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
H-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Survey/Mapping

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format		Level/Layer Description			
General Information					
V-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
V-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
V-ANNO-LEGN	Legends and symbol keys	0	V	V	V
V-ANNO-MATC	Match lines	0	0.70	7	0
V-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
V-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
V-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
V-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
V-ANNO-REDL	Redlines	0	0.25	1	3
V-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
V-ANNO-REVC	Revision clouds	0	0.35	4	7
V-ANNO-REVS	Revision indicators and text	0	0.35	4	7
V-ANNO-SCHD	Schedules	0	V	V	V
V-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
V-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V
Topography					
V-TOPO-COOR	Coordinate grid text annotation	0	0.25	122	23
V-TOPO-COOR-LALO	Latitude and longitude grid ticks	0	0.18	3	2
V-TOPO-COOR-STAT	State Plane coordinate ticks	0	0.18	3	2

Note: V = Varies, NA = Not Applicable

Discipline: Geotechnical

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
B-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
B-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
B-ANNO-LEGN	Legends and symbol keys	0	V	V	V
B-ANNO-MATC	Match lines	0	0.70	7	0
B-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
B-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
B-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
B-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
B-ANNO-REDL	Redlines	0	0.25	1	3
B-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
B-ANNO-REVC	Revision clouds	0	0.35	4	7
B-ANNO-REVS	Revision indicators and text	0	0.35	4	7
B-ANNO-SCHD	Schedules	0	V	V	V
B-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
B-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Civil

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
C-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
C-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
C-ANNO-LEGN	Legends and symbol keys	0	V	V	V
C-ANNO-MATC	Match lines	0	0.70	7	0
C-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
C-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
C-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
C-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
C-ANNO-REDL	Redlines	0	0.25	1	3
C-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
C-ANNO-REVC	Revision clouds	0	0.35	4	7
C-ANNO-REVS	Revision indicators and text	0	0.35	4	7
C-ANNO-SCHD	Schedules	0	V	V	V
C-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
C-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V
Topography					
C-TOPO-COOR	Coordinate grid text annotation	0	0.35	122	23
C-TOPO-COOR-LALO	Latitude and longitude grid ticks	0	0.25	3	2
C-TOPO-COOR-STAT	State Plane coordinate ticks	0	0.25	3	2

Note: V = Varies, NA = Not Applicable

Discipline: Landscape

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
L-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
L-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
L-ANNO-LEGN	Legends and symbol keys	0	V	V	V
L-ANNO-MATC	Match lines	0	0.70	7	0
L-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
L-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
L-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
L-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
L-ANNO-REDL	Redlines	0	0.25	1	3
L-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
L-ANNO-REVC	Revision clouds	0	0.35	4	7
L-ANNO-REVS	Revision indicators and text	0	0.35	4	7
L-ANNO-SCHD	Schedules	0	V	V	V
L-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
L-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Structural

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
S-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
S-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
S-ANNO-LEGN	Legends and symbol keys	0	V	V	V
S-ANNO-MATC	Match lines	0	0.70	7	0
S-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
S-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
S-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
S-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
S-ANNO-REDL	Redlines	0	0.25	1	3
S-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
S-ANNO-REVC	Revision clouds	0	0.35	4	7
S-ANNO-REVS	Revision indicators and text	0	0.35	4	7
S-ANNO-SCHD	Schedules	0	V	V	V
S-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
S-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Architectural

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
A-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
A-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
A-ANNO-LEGN	Legends and symbol keys	0	V	V	V
A-ANNO-MATC	Match lines	0	0.70	7	0
A-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
A-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
A-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
A-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
A-ANNO-REDL	Redlines	0	0.25	1	3
A-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
A-ANNO-REVC	Revision clouds	0	0.35	4	7
A-ANNO-REVS	Revision indicators and text	0	0.35	4	7
A-ANNO-SCHD	Schedules	0	V	V	V
A-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
A-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Interiors

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
I-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
I-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
I-ANNO-LEGN	Legends and symbol keys	0	V	V	V
I-ANNO-MATC	Match lines	0	0.70	7	0
I-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
I-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
I-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
I-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
I-ANNO-REDL	Redlines	0	0.25	1	3
I-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
I-ANNO-REVC	Revision clouds	0	0.35	4	7
I-ANNO-REVS	Revision indicators and text	0	0.35	4	7
I-ANNO-SCHD	Schedules	0	V	V	V
I-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
I-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Fire Protection

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
F-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
F-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
F-ANNO-LEGN	Legends and symbol keys	0	V	V	V
F-ANNO-MATC	Match lines	0	0.70	7	0
F-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
F-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
F-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
F-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
F-ANNO-REDL	Redlines	0	0.25	1	3
F-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
F-ANNO-REVC	Revision clouds	0	0.35	4	7
F-ANNO-REVS	Revision indicators and text	0	0.35	4	7
F-ANNO-SCHD	Schedules	0	V	V	V
F-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
F-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Plumbing

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
P-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
P-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
P-ANNO-LEGN	Legends and symbol keys	0	V	V	V
P-ANNO-MATC	Match lines	0	0.70	7	0
P-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
P-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
P-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
P-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
P-ANNO-REDL	Redlines	0	0.25	1	3
P-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
P-ANNO-REVC	Revision clouds	0	0.35	4	7
P-ANNO-REVS	Revision indicators and text	0	0.35	4	7
P-ANNO-SCHD	Schedules	0	V	V	V
P-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
P-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Mechanical

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
M-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
M-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
M-ANNO-LEGN	Legends and symbol keys	0	V	V	V
M-ANNO-MATC	Match lines	0	0.70	7	0
M-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
M-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
M-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
M-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
M-ANNO-REDL	Redlines	0	0.25	1	3
M-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
M-ANNO-REVC	Revision clouds	0	0.35	4	7
M-ANNO-REVS	Revision indicators and text	0	0.35	4	7
M-ANNO-SCHD	Schedules	0	V	V	V
M-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
M-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Electrical

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
E-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
E-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
E-ANNO-LEGN	Legends and symbol keys	0	V	V	V
E-ANNO-MATC	Match lines	0	0.70	7	0
E-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
E-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
E-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
E-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
E-ANNO-REDL	Redlines	0	0.25	1	3
E-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
E-ANNO-REVC	Revision clouds	0	0.35	4	7
E-ANNO-REVS	Revision indicators and text	0	0.35	4	7
E-ANNO-SCHD	Schedules	0	V	V	V
E-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
E-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Discipline: Telecommunications

Level/Layer Naming		Graphic Defaults			
		Line Style	Line Width (mm)	AutoCAD Color #	MicroStation Color #
AIA Format	Level/Layer Description				
General Information					
T-ANNO-DIMS	Sheet-specific dimensions (includes witness/extension lines, dimension terminators, dimension text)	0	V	V	V
T-ANNO-KEYN	Sheet-specific reference keynotes with associated leaders	0	V	V	V
T-ANNO-LEGN	Legends and symbol keys	0	V	V	V
T-ANNO-MATC	Match lines	0	0.70	7	0
T-ANNO-NOTE	Sheet-specific notes and general remarks	0	0.35	2	4
T-ANNO-NPLT	Non-plotting graphic information	0	0.18	5	1
T-ANNO-PATT	Sheet-specific patterning and hatching (e.g., keyplan patterning)	0	0.18	8	9
T-ANNO-RDME	Read-me information (not plotted)	0	0.18	5	1
T-ANNO-REDL	Redlines	0	0.25	1	3
T-ANNO-REFR	Reference files and raster attachments	NA	NA	NA	NA
T-ANNO-REVC	Revision clouds	0	0.35	4	7
T-ANNO-REVS	Revision indicators and text	0	0.35	4	7
T-ANNO-SCHD	Schedules	0	V	V	V
T-ANNO-SYMB	Sheet-specific symbols (e.g., scales, north arrow, section cuts, detail bubbles, etc.)	V	0.35	6	5
T-ANNO-TEXT	Sheet-specific text and callouts with associated leaders (e.g., title block text, legend and schedule text)	0	V	V	V

Note: V = Varies, NA = Not Applicable

Appendix C

Color Table Comparison

For more information on Screened Colors, see the section "Screening" in Chapter 3 "Graphic Concepts."

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Appendix C Color Table Comparison

AutoCAD Color No.	MicroStation Color No.	Screened Color
1	3	
2	4	
3	2	
4	7	
5	1	
6	5	
7	0	
8	9	
9	14	
10	10	
11	19	
12	27	
13	35	
14	43	
15	51	
16	59	
17	67	
18	75	
19	83	
20	6	
21	30	
22	22	
23	46	
24	38	
25	62	
26	54	
27	78	
28	70	
29	94	
30	86	
31	110	
32	102	
33	126	
34	118	
35	142	
36	134	
37	158	
38	150	
39	174	
40	166	
41	190	
42	182	
43	206	
44	198	
45	222	
46	214	

Appendix C Color Table Comparison

AutoCAD Color No.	MicroStation Color No.	Screened Color
47	238	
48	230	
49	251	
50	20	
51	28	
52	36	
53	44	
54	52	
55	60	
56	68	
57	76	
58	84	
59	92	
60	100	
61	108	
62	116	
63	124	
64	132	
65	140	
66	148	
67	156	
68	164	
69	172	
70	180	
71	188	
72	196	
73	204	
74	212	
75	220	
76	228	
77	236	
78	244	
79	252	
80	11	
81	26	
82	18	
83	42	
84	34	
85	58	
86	50	
87	74	
88	66	
89	90	
90	82	
91	106	
92	98	

Appendix C Color Table Comparison

AutoCAD Color No.	MicroStation Color No.	Screened Color
93	122	
94	114	
95	138	
96	130	
97	154	
98	146	
99	170	
100	162	
101	186	
102	178	
103	202	
104	194	
105	218	
106	210	
107	234	
108	226	
109	250	
110	242	
111	246	
112	247	
113	16	
114	32	
115	48	
116	64	
117	80	
118	96	
119	112	
120	12	
121	15	
122	23	
123	31	
124	39	
125	47	
126	55	
127	63	
128	71	
129	79	
130	87	
131	95	
132	103	
133	111	
134	119	
135	127	
136	135	
137	143	
138	151	

Appendix C Color Table Comparison

AutoCAD Color No.	MicroStation Color No.	Screened Color
139	159	
140	167	
141	175	
142	183	
143	191	
144	199	
145	207	
146	215	
147	223	
148	231	
149	239	
150	40	
151	72	
152	88	
153	104	
154	136	
155	152	
156	184	
157	216	
158	232	
159	248	
160	17	
161	25	
162	33	
163	41	
164	49	
165	57	
166	65	
167	73	
168	81	
169	89	
170	97	
171	105	
172	113	
173	121	
174	129	
175	137	
176	145	
177	153	
178	161	
179	169	
180	177	
181	185	
182	193	
183	201	
184	209	

Appendix C Color Table Comparison

AutoCAD Color No.	MicroStation Color No.	Screened Color
185	217	
186	225	
187	233	
188	241	
189	249	
190	245	
191	128	
192	144	
193	160	
194	176	
195	192	
196	208	
197	224	
198	240	
199	254	
200	13	
201	29	
202	21	
203	45	
204	37	
205	61	
206	53	
207	77	
208	69	
209	93	
210	85	
211	109	
212	101	
213	125	
214	117	
215	141	
216	133	
217	157	
218	149	
219	173	
220	165	
221	189	
222	181	
223	205	
224	197	
225	221	
226	213	
227	237	
228	229	
229	253	
230	91	

Appendix C Color Table Comparison

AutoCAD Color No.	MicroStation Color No.	Screened Color
231	99	
232	107	
233	115	
234	123	
235	131	
236	139	
237	147	
238	155	
239	163	
240	171	
241	179	
242	187	
243	195	
244	203	
245	211	
246	219	
247	227	
248	235	
249	243	
250	8	Yes
251	200	Yes
252	168	Yes
253	120	Yes
254	56	Yes
255	24	

Appendix D

A/E/C CAD Standard Symbology

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Appendix D

A/E/C CAD Standard Symbolology

This appendix provides the A/E/C CAD Standard Symbolology as follows:

Lines

16THLN – Sixteenth Section Line	D1-3
ACIDWS – Acid Waste.....	D1-3
AIRRLF – Atmospheric Vent	D1-3
BANKLF – Bank Left.....	D1-3
BANKRT – Bank Right	D1-3
BARDIT – Ditch Barrier.....	D1-3
BARDTB – Ditch and Berm Barrier	D1-3
BARGEN – Generic Security Barrier ...	D1-3
BARMAS – Security Masonry Barrier .	D1-3
BERM – Berm.....	D1-4
BOILBD – Boiler Blow Down.....	D1-4
BRINER – Brine Return.....	D1-4
BRINES – Brine Supply.....	D1-4
BUSWAY – Busway	D1-4
CABLTV – Cable TV	D1-4
CCTV – Closed Circuit TV	D1-4
CDRNAF – Condensate Drain	D1-4
CLDWTR – Potable Cold Water.....	D1-4
CMP12 – CMP 12 in. Diameter	
Linear Pattern.....	D1-5
CMP127 – CMP 127 mm x 25 mm.....	D1-5
CMP152 – CMP 152 mm x 51 mm.....	D1-5
CMP38 – CMP 38 mm x 6 mm.....	D1-5
CMP51 – CMP 51 mm x 13 mm.....	D1-5
CMP68 – CMP 68 mm x 13 mm.....	D1-5
CMP76 – CMP 76 mm x 25 mm.....	D1-5
CMPAIR – Compressed Air.....	D1-5
CMPU12 – CMP up to 12 in. Diameter	
Linear Pattern.....	D1-5
COMARN – New Communication,	
Aerial	D1-6
COMARX – Existing Aerial	
Communication Line	D1-6
COMUGN – New Communication	
Underground.....	D1-6

COMUGX – Existing Underground	
Communication Line	D1-6
CONDFL – Flexible Conduit	D1-6
CONDP – Pumped Condensate.....	D1-6
CONDWR – Condenser Water Return..	D1-6
CONDWS – Condenser Water Supply..	D1-6
CONEMT – Construction Easement	D1-6
CONLMT – Construction Limit.....	D1-7
CULVRT – Culvert Pipe	D1-7
CWR – Chilled Water Return.....	D1-7
CWS – Chilled Water Supply	D1-7
DCAGN – Direct Current	
Aboveground	D1-7
DCUGN – Direct Current	
Underground	D1-7
DECKCR – Corrugated Metal Deck	D1-7
DECKFL – Metal Floor Deck	D1-7
DECKRF – Metal Roof Deck.....	D1-7
DEMO – Demolition Line (NCS)	D1-8
DEMOLN – Demolition Line (AEC)....	D1-8
DIOWTR – Deionized Water	D1-8
DITCH – Ditch Line.....	D1-8
DSTWTR – Distilled Water	D1-8
DTR – Dual Temperature Return	D1-8
DTS – Dual Temperature Supply	D1-8
DUCTTR – Trolley Duct	D1-8
EPARN – New Electrical Primary,	
Aerial	D1-8
EPARX – Existing Aerial Primary	
Electrical Line	D1-9
EPUGN – New Electrical	
Underground Primary	D1-9
EPUGX – Existing Underground Primary	
Electrical Line	D1-9
ESARN – New Electrical Secondary,	
Aerial	D1-9
ESARX – Existing Aerial Secondary	
Electrical Line	D1-9
ESUGN – New Electrical Secondary,	
Underground	D1-9

ESUGX – Existing Underground Secondary
 Electrical Line D1-9
 EUDUCN – New Duct Bank,
 Underground D1-9
 EUDUCX – Existing Underground
 Ductbank D1-9
 FALARM – Fire Alarm.....D1-10
 FENCE – Fence D1-10
 FIBOPT – Fiber Optics Line D1-10
 FILL – Fill Line.....D1-10
 FIRE – Fire Protection Water Supply .D1-10
 FUELOR – Fuel Oil Return D1-10
 FUELOS – Fuel Oil Supply D1-10
 FUELOV – Fuel Oil Tank Vent D1-10
 GHR – Glycol Heating Return D1-10
 GHS – Glycol Heating Supply D1-11
 GOVTKL – Government Taking Line D1-11
 GRAY – Graywater D1-11
 GROUND – Ground.....D1-11
 GUARD – Guardrail.....D1-11
 HAZMAT – Hazardous Materials.....D1-11
 HELIUM – Helium.....D1-11
 HPCNDR – High Pressure CondensateD1-11
 HTHWR – High Temperature Hot
 Water Return.....D1-11
 HTHWS – High Temperature Hot
 Water Supply D1-12
 HUMID – Humidification Line.....D1-12
 HWR – Low Temperature Hot
 Water Return.....D1-12
 HWS – Low Temperature Hot
 Water Supply D1-12
 HWTR – Potable Hot Water.....D1-12
 HWTRR – Potable Hot Water Return .D1-12
 HYDRGN – Hydrogen D1-12
 ICWTR – Industrial Cold Water D1-12
 IHWTRR – Industrial Hot Water
 Return.....D1-12
 IHWTRS – Industrial Hot Water
 Supply D1-13
 INBATT – Loose Fill Batt. Insulation D1-13
 INDDRN – Indirect Drain D1-13
 INDXDC – Index Depth Contour.....D1-13
 INTCOM – Intercom.....D1-13
 INTRLK – Interlock Steel Members...D1-13
 IWASTE – Industrial Waste.....D1-13
 LADDER – Cable Ladder D1-13
 LAWNSP – Lawn Sprinkler Supply ...D1-13
 LEVEBO – Other Existing Levee D1-14

LEVEE – New Levee D1-14
 LEVEEX – Existing Levee D1-14
 LEVERP – Levee to be Repaired D1-14
 LIQNIT – Liquid Nitrogen.....D1-14
 LIQOXY – Liquid Oxygen D1-14
 LIQPET – Liquid Petroleum Gas D1-14
 LPCNDR – Low Pressure Condensate D1-14
 MAKEUP – Make Up Water D1-14
 MANSUC – Suction Main D1-15
 MINRDC – Minor Depth Contour D1-15
 MPCNDR – Medium Pressure
 Condensate.....D1-15
 MTHWR – Medium Temperature
 Hot Water Return.....D1-15
 MTHWS – Medium Temperature
 Hot Water Supply D1-15
 NITOXI – Nitrous Oxide.....D1-15
 NITROG – Nitrogen.....D1-15
 NONPOT – Nonpotable Water D1-15
 NTGASN – Natural Gas Piping D1-15
 NTGASX – Exist. Natural Gas Piping D1-16
 NURSE – Nurse Call.....D1-16
 OXYGEN – Oxygen D1-16
 PHONE – Telephone D1-16
 PNTUBE – Pneumatic Tube Runs D1-16
 PROJBL – Project Boundary Line D1-16
 PROPL – Property Line D1-16
 PS31 – PS31 Sheet Pile D1-16
 PS31H – PS31 Sheet Pile Hidden D1-16
 PSA23 – PSA23 Sheet Pile D1-17
 PSA23H – PSA23 Sheet Pile Hidden..D1-17
 PZ22 – PZ22 Sheet Pile.....D1-17
 PZ22H – PZ22 Sheet Pile Hidden D1-17
 PZ27 – PZ27 Sheet Pile.....D1-17
 PZ27H – PZ27H Sheet Pile Hidden D1-17
 PZ35 – PZ35 Sheet Pile.....D1-17
 PZ35H – PZ35 Sheet Pile Hidden D1-17
 PZ40 – PZ40 Sheet Pile.....D1-17
 PZ40H – PZ40 Sheet Pile Hidden D1-18
 RAILRD – Railroad D1-18
 REBR12 – Rebar at 12 Inch D1-18
 REBR18 – Rebar at 18 Inch D1-18
 REBR6 – Rebar at 6 Inch D1-18
 REBR9 – Rebar at 9 Inch D1-18
 REFRD – Refrigerant Discharge.....D1-18
 REFRL – Refrigerant Liquid.....D1-18
 REFRS – Refrigerant Suction D1-18
 RIPPLN – Riprap Plan View.....D1-19
 ROCK – Rock D1-19

ROOFDN – Roof Drain.....	D1-19
RTOFWY – Right of Way	D1-19
SFCWTR – Soft Cold Water.....	D1-19
SHORLN – Shore Line	D1-19
SHWTRR – Sanitizing Hot Water Return (180F).....	D1-19
SHWTRS – Sanitizing Hot Water Supply (180F)	D1-19
SILT – Silt Fence	D1-19
SPRINK – Main Supply Sprinkler	D1-20
SSILT – Super Silt Fence.....	D1-20
SSWAF – New Sanitary Sewer.....	D1-20
SSWAFX – Existing Sanitary Sewer ..	D1-20
STDCOM – Combination Standpipe...	D1-20
STDDRY – Dry Standpipe.....	D1-20
STDWET – Wet Standpipe	D1-20
STEAMH – High Pressure Steam	D1-20
STEAML – Low Pressure Steam	D1-20
STEAMM – Medium Pressure Steam ..	D1-21
STRAF – New Storm Drain	D1-21
STRAFX – Existing Storm Drain.....	D1-21
TREEL – Tree Line	D1-21
TUVANE – Turning Vanes.....	D1-21
VACAIR – Vacuum Air	D1-21
VACPD – Vacuum Pump Discharge...	D1-21
VENT – Vent.....	D1-21
VENTWS – Vent and Waste Combination.....	D1-21
WATERL – New Water Line.....	D1-22
WATRX – Existing Water Line	D1-22
WIREWY – Wireway	D1-22
WWFBRC – Welded Wire Fabric.....	D1-22

Patterns

ADOBE – Masonry/Adobe Rammed Earth.....	D2-3
AGGLOM - Agglomerate or Flow Breccia	D2-3
ALUMIN – Aluminum.....	D2-3
ANDES – Andesite	D2-3
ASHLER – Stone Ashler.....	D2-3
BASALT – Basalt	D2-3
BRASS – Bronze Brass.....	D2-3
BRBLCO – Coursed Brick Block.	D2-3
BRCOBD – Common Bond Brick	D2-3
BRECCA – Breccia	D2-4
BRENBD – English Bond Brick.	D2-4
BRFLBD – Flemish Bond Brick.	D2-4

BRFLCB – Flemish Common Bond	D2-4
BRKCF – Common/Face Brick.....	D2-4
BRKELE – Brick Elevation	D2-4
BRRNBD – Brick Running Bond	D2-4
BRSTBD – Brick Stack Bond	D2-4
CCBSS – Cast Concrete Block, Small Scale.....	D2-4
CCELEV – Concrete Cement Elevation	D2-5
CDTOP – Cementitious Deck & Topping	D2-5
CHALK – Chalk or Marl.....	D2-5
CHERT – Chert.....	D2-5
CLAYST – Claystone or Siltstone	D2-5
CMPSHL – Compaction Shale.....	D2-5
CMUBP – CMU Block	D2-5
CMUELB – Elevation Block.....	D2-5
COAL – Coal.....	D2-5
CONBLK – Concrete Block.....	D2-6
CONC – Concrete	D2-6
CONCCN – Concrete, Cinder.	D2-6
CONCLW – Concrete, Light Weight....	D2-6
CONCPR – Precast Cast-in-Place Concrete	D2-6
CONCST – Concrete, Stone	D2-6
CONGLM – Conglomerate	D2-6
CONPBS – Pumice Block Concrete, Small Scale.....	D2-6
CSHALE – Cemented Shale	D2-6
CSJNT – Closely Spaced Joints	D2-7
CSTIRN – Cast Iron	D2-7
CSTSTN – Cast Stone	D2-7
CTILSS – Ceramic Tile, Small Scale	D2-7
CUTSTN – Cut Stone.....	D2-7
DIORIT – Diorite	D2-7
DOLOM – Dolomite	D2-7
EARTH – Compacted Fill Earthwork ...	D2-7
EEARTH – Existing Earth	D2-7
EROCK – Existing Rock.....	D2-8
FIBFSF – Fibrous Fire Safing.....	D2-8
FILLSC – Fill Section	D2-8
FILTBD – Filtration Bed.....	D2-8
GABBRO – Gabbro	D2-8
GLASS – Structural Glass.....	D2-8
GNEISS – Gneiss	D2-8
GRANIT – Granite	D2-8
GRAVEL – Gravel	D2-8
GRAYWC – Graywacke	D2-9
GROUT – Grout	D2-9

GRVCRE – Crushed Rock Earth Gravel.....	D2-9
GRVPFE – Porous Fill Gravel Earthwork.....	D2-9
GRVSCL – Sand Clay Gravel.....	D2-9
GYPPPE – Gypsum Plaster Plan & Elevation	D2-9
HFRACT – Highly Fractured.....	D2-9
INSQLT – Large Scale Insulation Quilts.....	D2-9
INSRIG – Rigid Insulation.....	D2-9
INSSCM – Solid Cork Magnesia Insulation	D2-10
LIMEST – Limestone.....	D2-10
LSWAMP – Large Swamp.....	D2-10
MARBL1 – Marble	D2-10
MARBL2 – Marble Stone	D2-10
MSJNT – Moderately Spaced Joints ...	D2-10
POROUS – Porous	D2-10
QUARTZ – Quartzite	D2-10
RHYOLT – Rhyolite	D2-10
RIPRAP – Riprap	D2-11
ROCK – Rock Earthwork.....	D2-11
RUBBLE – Stone Rubble.....	D2-11
SAND – Sand	D2-11
SANDST – Sandstone	D2-11
SCHIST – Schist	D2-11
SHELL – Shells.....	D2-11
SLATE – Slate.....	D2-11
SOAPST – Soapstone or Serpentine ...	D2-11
STEEL – Steel and other Metals.	D2-12
STNSQR – Squared Stone	D2-12
TCBCSS – Terra Cotta (Small Scale) Brick Cotta.....	D2-12
TCELEV – Terra Cotta Elevation	D2-12
TCUSS – Terra Cotta (Small Scale) Unglazed	D2-12
TERRZO – Terrazzo.	D2-12
TILCER – Ceramic Tile Elevation.....	D2-12
TILESF – Structural Facing Tile.....	D2-12
TUFF – Tuff or Tuff Breccia.....	D2-12
USCS1 – USCS Soil Symbol	D2-13
USCS10 – OL, Organic Clay or Silt, Low Liquid Limit.....	D2-13
USCS11 – Pt, Peat.....	D2-13
USCS12 – SC, Clayey Sand.....	D2-13
USCS13 – SM, Silty Sand.....	D2-13
USCS14 – SP, Poorly Graded Sand	D2-13
USCS15 – SW, Well Graded Sand.....	D2-13

USCS2 – CL, Lean Clay	D2-13
USCS3 – GC, Clayey Gravel	D2-13
USCS4 – GM, Silty Gravel	D2-14
USCS5 – GP, Poorly Graded Gravel...	D2-14
USCS6 – GW, Well Graded Gravel	D2-14
USCS7 – MH, Inorganic Silt, High Liquid Limit	D2-14
USCS8 – ML, Inorganic, Silt, Low Liquid Limit	D2-14
USCS9 – OH, Organic Clay or Silt, High Liquid Limit.....	D2-14
WOOD – Wood Symbol	D2-14
WSJNT – Widely Spaced Joints.....	D2-14
ZONECL – Zones of Core Loss	D2-14

General

Symbols

BREAK – Break Line Symbol	D3-3
CNTLIN – Centerline Symbol	D3-3
COLLIN – Column Line/ Grid Indicator.....	D3-3
DBLARR – Double Arrow Terminator.	D3-3
DTLIND – Detail Indicator	D3-3
ELEV1 – Elevation Indicator, Interior ..	D3-3
ELEV2 – Elevation Indicator, Interior ..	D3-3
ELEV3 – Elevation Indicator, Interior ..	D3-3
ELEV4 – Elevation Indicator, Interior ..	D3-3
KEYIND – Keynote Indicator.....	D3-4
MAGNOR – Magnetic North Arrow	D3-4
MATIND – Match Line Indicator	D3-4
NORIND – North Indicator	D3-4
NORNCS – North Indicator (NCS).....	D3-4
NORTH1 – North Indicator.....	D3-4
NORTH2 – North Indicator.....	D3-4
NORTH3 – North Indicator.....	D3-4
NOTIND – Note Indicator.....	D3-4
REVID1 – Revision Indicator, 1 Char ..	D3-5
REVID2 – Revision Indicator, 2 Char ..	D3-5
S00001 – Scale 1 : 1	D3-5
S00005 – Scale 1 : 5	D3-5
S0000B – Scale 1” = 1”	D3-5
S00010 – Scale 1 : 10	D3-5
S0001B – Scale 1” = 1’	D3-5
S0001G – Scale 1” = 1’	D3-5
S00020 – Scale 1 : 20	D3-5
S0003B – Scale 3” = 1’	D3-6

S0003G – Scale 3" = 1'	D3-6
S00050 – Scale 1 : 50	D3-6
S0005B – Scale 1" = 5'	D3-6
S0005G – Scale 1" = 5'	D3-6
S0006B – Scale 6" = 1'	D3-6
S0006G – Scale 6" = 1'	D3-6
S00100 – Scale 1 : 100	D3-6
S0010B – Scale 1" = 10'	D3-6
S0010G – Scale 1" = 10'	D3-7
S0012B – Scale 1/2" = 1'	D3-7
S0012G – Scale 1/2" = 1'	D3-7
S0014B – Scale 1/4" = 1'	D3-7
S0014G – Scale 1/4" = 1'	D3-7
S0015B – Scale 1-1/2" = 1'	D3-7
S0015G – Scale 1-1/2" = 1'	D3-7
S0016B – Scale 1/16" = 1'	D3-7
S0016G – Scale 1/16" = 1'	D3-7
S0018B – Scale 1/8" = 1'	D3-8
S0018G – Scale 1/8" = 1'	D3-8
S001KB – Scale 1:1000	D3-8
S00200 – Scale 1 : 200	D3-8
S0020B – Scale 1" = 20'	D3-8
S0020G – Scale 1" = 20'	D3-8
S002KB – Scale 1:2000	D3-8
S0030B – Scale 1" = 30'	D3-8
S0030G – Scale 1" = 30'	D3-8
S0034B – Scale 3/4" = 1'	D3-9
S0034G – Scale 3/4" = 1'	D3-9
S0038B – Scale 3/8" = 1'	D3-9
S0038G – Scale 3/8" = 1'	D3-9
S0040B – Scale 1" = 40'	D3-9
S0040G – Scale 1" = 40'	D3-9
S00500 – Scale 1 : 500	D3-9
S0050B – Scale 1" = 50'	D3-9
S0050G – Scale 1" = 50'	D3-9
S005KB – Scale 1:5000	D3-10
S0060B – Scale 1" = 60'	D3-10
S0060G – Scale 1" = 60'	D3-10
S0080B – Scale 1" = 80'	D3-10
S0080G – Scale 1" = 80'	D3-10
S01000 – Scale 1 : 1000	D3-10
S0100B – Scale 1" = 100'	D3-10
S0100G – Scale 1" = 100'	D3-10
S010KB – Scale 1 : 10000	D3-10
S0150B – Scale 1" = 15'	D3-11
S0150G – Scale 1" = 15'	D3-11
S02000 – Scale 1 : 2000	D3-11
S0200B – Scale 1" = 200'	D3-11
S0200G – Scale 1" = 200'	D3-11
S0300B – Scale 1" = 300'	D3-11

S0300G – Scale 1" = 300'	D3-11
S0316B – Scale 3/16" = 1'	D3-11
S0316G – Scale 3/16" = 1'	D3-11
S0332B – Scale 3/32" = 1'	D3-12
S0332G – Scale 3/32" = 1'	D3-12
S0364B – Scale 3/64" = 1'	D3-12
S0364G – Scale 3/64" = 1'	D3-12
S0400B – Scale 1" = 400'	D3-12
S0400G – Scale 1" = 400'	D3-12
S05000 – Scale 1 : 5000	D3-12
S0500B – Scale 1" = 500'	D3-12
S0500G – Scale 1" = 500'	D3-12
S06000 – Scale 1 : 6000	D3-13
S0600B – Scale 1" = 600'	D3-13
S0600G – Scale 1" = 600'	D3-13
S0800B – Scale 1" = 800'	D3-13
S0800G – Scale 1" = 800'	D3-13
S10000 – Scale 1 : 10000	D3-13
S1000B – Scale 1" = 1000'	D3-13
S1000G – Scale 1" = 1000'	D3-13
S10K0B – Scale 1" = 10000'	D3-13
S10K0G – Scale 1" = 10000'	D3-14
S125KB – Scale 1 : 125000	D3-14
S20000 – Scale 1 : 20000	D3-14
S2000B – Scale 1" = 2000'	D3-14
S2000G – Scale 1" = 2000'	D3-14
S3000B – Scale 1" = 3000'	D3-14
S3000G – Scale 1" = 3000'	D3-14
S4000B – Scale 1" = 4000'	D3-14
S4000G – Scale 1" = 4000'	D3-14
S5000B – Scale 1" = 5000'	D3-15
S5000G – Scale 1" = 5000'	D3-15
S6000B – Scale 1" = 6000'	D3-15
S6000G – Scale 1" = 6000'	D3-15
S8000B – Scale 1" = 8000'	D3-15
S8000G – Scale 1" = 8000'	D3-15
SECIN1 – Section/Elevation Indicator	D3-15
SECIN2 – Section/Elevation Indicator	D3-15
TITLE1 – Drawing Block Title	D3-15
TITLE2 – Drawing Block Title	D3-16

Hazardous Materials

Symbols

AIRQST – Air Quality Monitoring	
Station	D4-3
AIRSMP – Air Sample Location	D4-3

BIOSMP – Biological Sample Location	D4-3
EGDECN – Equip. Decontamination	D4-3
EGONST – Onsite Command Post	D4-3
EGSITE – Site Information Center	D4-3
EGWASH – Washdown Water Tank	D4-3
EHZMSA – Hazmat Storage Location	D4-3
EHZMSB – Hazmat Storage Building	D4-3
EHZMSR – Hazmat Storage Room	D4-4
EHZMSV – Hazmat Storage Vault	D4-4
EHZWSA – Hazwaste Storage Location	D4-4
EHZWSB – Hazwaste Storage Building	D4-4
EHZWSR – Hazwaste Storage Room	D4-4
EHZWSV – Hazwaste Storage Vault	D4-4
EMGSHW – Emergency Shower	D4-4
EPOLLS – Pollution Source Site	D4-4
EYEWAS – Emergency Eyewash	D4-4
GWTQST – Groundwater Quality Monitoring Station	D4-5
LANGAS – Landfill Gas Monitor Probe	D4-5
MAGLOC – Magnetometer Det. Locat.	D4-5
MATSMP – Solid Material Sample Location	D4-5
PRLLOC – Potential Release Location	D4-5
RESTR – Restricted Access	D4-5
SEDSMP – Sediment Sample Location	D4-5
SOLGAS – Soil Gas Monitoring Probe	D4-5
SOLSMP – Soil Sample Location	D4-5
SPLRES – Spill Response	D4-6
SPLTNK – Spill Containment Tank	D4-6
SURSMP – Surface Water Sample Loc	D4-6
SWTQST – Surface Water Quality Monitoring Station	D4-6
WASSMP – Waste Sample Location	D4-6
WATSMP – Groundwater Sample Loc.	D4-6

Survey/Mapping

Symbols

ACLLEL – Elevated Approach Lightbar	D5-3
ACLLSF – Semiflush Approach Lightbar	D5-3
AERO – Seaplane Anchorage Buoy	D5-3
AFBCN – Airfield Beacon	D5-3
AIRFLD – Airfield Symbol	D5-3
ANCHR1 – Anchorage Large Vessel	D5-3

ANCHR2 – Anchorage Large Vessel	D5-3
ANCHR3 – Anchorage Small Vessel	D5-3
ANCHR4 – Anchorage Small Vessel	D5-3
ANCHR5 – Anchorage Small Vessel	D5-4
ANCHRB – Anchor Berth	D5-4
ARROW – Arrow Terminator	D5-4
BAR1 – Barrel Buoy	D5-4
BAR1C – Barrel Buoy, Indicate Color	D5-4
BAR2 – Barrel Buoy	D5-4
BARD – Barrel Buoy, Diagonal Stripe	D5-4
BARLT1 – Barrel Buoy, Lighted	D5-4
BARLT2 – Barrel Buoy, Lighted	D5-4
BARMKR – Barrier Marker	D5-5
BARV – Barrel Buoy, Vertical Stripe	D5-5
BARVT – Barrel Buoy, Vertical Stripe, w/Topmark	D5-5
BCN1 – General Beacon	D5-5
BCN2 – General Beacon	D5-5
BCN3 – General Beacon	D5-5
BCN4 – General Beacon	D5-5
BCN5 – General Beacon	D5-5
BCNBY1 – Buoyant Beacon	D5-5
BCNBY2 – Buoyant Beacon	D5-6
BCNLT1 – Lighted Beacon	D5-6
BCNLT2 – Lighted Beacon	D5-6
BCNLT3 – Lighted Beacon	D5-6
BCNRES – Resilient Beacon	D5-6
BCNTG1 – Telegraphic Mooring Beacon	D5-6
BCNTG2 – Telegraphic Mooring Beacon	D5-6
BCNTP1 – Telephonic Mooring Beacon	D5-6
BCNTP2 – Telephonic Mooring Beacon	D5-6
BCNTR1 – Triangular Beacon	D5-7
BCNTR2 – Triangular Beacon	D5-7
BM – Bench Mark	D5-7
BMALT – Bench Mark Alternate	D5-7
BNDMRK – Boundary Mark	D5-7
BREAK – Break Line Symbol	D5-7
BYANCH – Anchorage Buoy	D5-7
BYBELB – Bell Barrel Buoy	D5-7
BYBEP – Bell Pillar Buoy	D5-7
BYCHEC – Checkered Buoy	D5-8
BYCOMP – Compass Adjustment Buoy	D5-8
BYEXPL – Explosive Anchorage Buoy	D5-8

BYFISH – Fish Trap Buoy.....D5-8
 BYGONB – Gong Barrel Buoy.....D5-8
 BYGONP – Gong Pillar Buoy D5-8
 BYJUNC – Junction Buoy D5-8
 BYPOS – Position of Buoy D5-8
 BYQUAR – Quarantine Buoy.....D5-8
 BYWAV1 – Wave Actuated Bell
 Buoy.....D5-9
 BYWAV2 – Wave Actuated Bell
 Buoy.....D5-9
 BYWHIB – Whistle Barrel Buoy.....D5-9
 BYWHIP – Whistle Pillar Buoy.....D5-9
 CABCNZ – Cable Crossing Zone D5-9
 CABDIS – Disused Submarine Cable...D5-9
 CABLAN – Cable Landing Beacon.....D5-9
 CABLE – Submarine Cable D5-9
 CABLE1 – Submarine Cable Area.....D5-9
 CABLE2 – Submarine Cable Area.....D5-10
 CABPWR – Submarine Power Area...D5-10
 CAIRN1 – Cairn.....D5-10
 CAIRN2 – Cairn.....D5-10
 CAIRN3 – Cairn.....D5-10
 CAIRN4 – Cairn.....D5-10
 CAN1 – Can Buoy D5-10
 CAN2 – Can Buoy D5-10
 CANWT – White Can Buoy
 w/Topmark.....D5-10
 CATBSN – Catch Basin.....D5-11
 CATBSR – Round Catch Basin D5-11
 CDHDR – Core Drill Hole Drilled.....D5-11
 CDHUDR – Core Drill Hole UndrilledD5-11
 CGRES1 – Coast Guard Rescue
 Station D5-11
 CGRES2 – Coast Guard Rescue
 Station D5-11
 CGRES3 – Coast Guard Rescue
 Station D5-11
 CKTID – Circuit ID Symbol D5-11
 CLNOUT – Cleanout D5-11
 CMANH – Communication Manhole .D5-12
 CNR90 – Corner Solid 90 D5-12
 CNRNF – Corner Not Found D5-12
 CNRSF – Corner Solid Flat.....D5-12
 CNTLIN – Centerline Symbol D5-12
 COAST1 – Coast Guard Station.....D5-12
 COAST2 – Coast Guard Station.....D5-12
 COAST3 – Coast Guard Station.....D5-12
 COAST4 – Coast Guard Station.....D5-12
 CULVEE – Culvert End Symbol D5-13
 DBID – Ductbank ID Symbol D5-13

DBLARR – Double Arrow TerminatorD5-13
 DISPLT – Disused Platform.....D5-13
 DNGPB – Lighted Danger Pillar BuoyD5-13
 DNGRK – Danger Underwater Rocks
 Depth Unknown.....D5-13
 DNGRK1 – Danger Underwater Rocks
 Depth Unknown.....D5-13
 DNGSB – Lighted Danger Spar Buoy D5-13
 DOLPHN – Dolphin.....D5-13
 DSTMKR – Runway Distance MarkerD5-14
 DSWTCH – Distribution Switch.....D5-14
 DTHL – Displace Threshold Light.....D5-14
 ECRD – Rock Dam Sediment Trap.....D5-14
 EHANDH – Electrical Handhole D5-14
 EMANH – Electrical Manhole.....D5-14
 EPULLB – Electrical Pullbox D5-14
 ERSBD – Straw Bale Dam.....D5-14
 ERSCTD – Sediment Ctrl Temp Div...D5-14
 ERSF – Silt Fence D5-15
 ERSFRO – Silt Fence Rock Overflow D5-15
 ERSOST – Stone Outlet Sed. Trap.....D5-15
 ERTGCE – Constr. Entrance Exit D5-15
 FIXPNT – Fixed Point D5-15
 FLARRL – Flow Arrow Left in 0 Pt..D5-15
 FLARRR – Flow Arrow Right in 0 Pt.D5-15
 FLDGAT – Flood Gate D5-15
 FOG – Fog Signal.....D5-15
 FOGBCN – Fog Signal Beacon D5-16
 FOGBY – Fog Signal Buoy D5-16
 FOGLS – Fog Signal Light Ship.....D5-16
 FOGLSM – Fog Signal Light Ship,
 Manned D5-16
 FOMETR – Fuel Oil Meter D5-16
 FOMHOL – Fuel Oil Manhole.....D5-16
 FOVALT – Fuel Oil Vault D5-16
 GREASE – Grease Trap.....D5-16
 GRITCH – Grit Chamber D5-16
 GSMETR – Natural Gas Meter D5-17
 GSMHOL – Natural Gas Manhole.....D5-17
 GSPLNT – Gas Plant D5-17
 GSRECR – Natural Gas Receiver D5-17
 GSTRAP – Natural Gas Trap D5-17
 GSVALT – Gas Valve Vault.....D5-17
 GUYWR – Guy Wire D5-17
 HEADWL – Headwall D5-17
 HLL – Hoverlane Light.....D5-17
 HLLL – Hoverlane Limit Light.....D5-18
 HORCPT – Horizontal Control Point..D5-18
 HOVCPT – Horiz. Vert. Control PointD5-18
 HPIL – Helipad Inset Light D5-18

HPLEL – Elevated Helipad Perimeter
 Light.....D5-18
 HPPLSF – Semiflush Helipad Perimeter
 Light.....D5-18
 HUREYE – Hurricane Eye.....D5-18
 HYDRNT – Fire Hydrant.....D5-18
 INSHWY – Interstate Hwy. Symbol ...D5-18
 INSTBY – Oil Gas Installation Buoy..D5-19
 IPC – Iron Pin and Cap.....D5-19
 IWMETR – Industrial Waste Water
 Meter D5-19
 IWMHOL – Industrial Waste ManholeD5-19
 JETTY – Jetty.....D5-19
 JNBX – Junction Box.....D5-19
 KELP – Kelp/Seaweed.....D5-19
 LANBY1 – Lanby Superbuoy Navaid D5-19
 LANBY2 – Lanby Superbuoy Navaid D5-19
 LATBCN – Lattice Beacon D5-20
 LIFEFT – Lifeboat Station.....D5-20
 LIFEM1 – Lifeboat at Mooring.....D5-20
 LIFEM2 – Lifeboat at Mooring.....D5-20
 LIMIT – Limit of Safety Zone D5-20
 LITSV1 – Floating Light.....D5-20
 LITSV2 – Floating Light.....D5-20
 LOOKTR – Lookout Watch Station....D5-20
 LTART – Articulated Light.....D5-20
 LTBEAC – Lighted Beacon D5-21
 LTBY – Lighted Buoy D5-21
 LTBYBB – Lighted Black Barrel
 Buoy D5-21
 LTFLD – Floodlight.....D5-21
 LTFLT – Float Light D5-21
 LTFLT1 – Float Light IALA.....D5-21
 LTFLT2 – Float Light IALA.....D5-21
 LTHOU1 – Lighthouse D5-21
 LTHOU2 – Lighthouse D5-21
 LTMAJ1 – Major Floating Light D5-22
 LTMAJ2 – Major Floating Light D5-22
 LTMARK – Lighted Marker D5-22
 LTMIN2 – Minor Floating Light D5-22
 LTPLT1 – Lighted Platform.....D5-22
 LTPLT2 – Lighted Platform.....D5-22
 LTPLX – Existing Light Pole D5-22
 LTSH1 – Lighted Vessel Lightship ..D5-22
 LTSH2 – Lighted Vessel Lightship ..D5-22
 LTSH3 – Lighted Vessel Lightship ..D5-23
 LTTOW2 – Lighted Beacon Tower D5-23
 LTVES2 – Unmanned Light Vessel....D5-23
 MARINA – Boat Harbor Marina D5-23

MARKGD – Green Day Marker D5-23
 MARKRD – Red Day Marker.....D5-23
 MEAST – Lighted East Marker Buoy.D5-23
 MONWEL – Monitoring Well D5-23
 MORB – Mooring Buoy.....D5-23
 MORBBB – Black Mooring Barrel
 Buoy.....D5-24
 MORBBW – White Mooring Barrel
 Buoy.....D5-24
 MORBCW – White Mooring Can
 Buoy.....D5-24
 MORTWR – Mooring Tower.....D5-24
 MSOUTH – Lighted South Marker
 Buoy.....D5-24
 MWEST – Lighted West Marker
 Buoy.....D5-24
 NOTICE – Notice Board D5-24
 NUN1 – Nun Buoy.....D5-24
 NUN2 – Nun Buoy.....D5-24
 NUNBT – Black Nun Buoy
 w/Topmark.....D5-25
 NUNWT – White Nun Buoy
 w/Topmark.....D5-25
 OBS – Obstruction D5-25
 OBSSPT – Observation Spot D5-25
 OBSTRL – Obstruction Light D5-25
 ODAS – ODAS Data Collection BuoyD5-25
 OUTB – Outfall Marking Buoy D5-25
 PAPI – PAPI Light Unit.....D5-25
 PHANDH – Primary Elec Handhole ...D5-25
 PHOCPT – Photo Control Point.....D5-26
 PIINFO – PI Information.....D5-26
 PIL1 – Pillar Buoy.....D5-26
 PIL2 – Pillar Buoy.....D5-26
 PILLT – Lighted Pillar Buoy D5-26
 PILM – Multicolored Pillar Buoy D5-26
 PILOT – Boarding Place D5-26
 PILOT1 – Pilot Office D5-26
 PILOT2 – Pilot Office D5-26
 PILV – Vertical Stripe Pillar Buoy D5-27
 PILVT – Vertical Stripe Pillar Buoy
 w/Topmark.....D5-27
 PIPDIS – Disused Pipeline Pipe.....D5-27
 PIPE – Water Sewer Outfall Intake....D5-27
 PIPE1 – Oil Gas Pipeline D5-27
 PIPE2 – Oil Gas Pipeline D5-27
 PIPES1 – Oil Gas Pipeline Area D5-27
 PIPES2 – Oil Gas Pipeline Area D5-27
 PIVALV – Post Indicator Valve.....D5-27

PLAT1 – Prod Platform Oil Derrick ...D5-28
 PLAT2 – Prod Platform Oil Derrick ...D5-28
 PLAT3 – Prod Platform Oil Derrick ...D5-28
 PMPSTA – Pump Station.....D5-28
 POLE1 – Pole Stake Perch.....D5-28
 POLE3 – Pole Stake Perch.....D5-28
 POLEAR – Aerial Pole w/Guying D5-28
 POLEID – Pole Identification SymbolD5-28
 POLEP – Port Hand Stake Pole.....D5-28
 POLES – Starboard Hand Stake Pole..D5-29
 PRIVB – Private Barrel Buoy D5-29
 RADAR – Radar Station or Beacon....D5-29
 RADAR1 – Floating Radar Beacon D5-29
 RADAR2 – Floating Radar Beacon D5-29
 RADAR3 – Floating Radar Beacon D5-29
 RADAR4 – Floating Radar Beacon D5-29
 RADIO – General Radio Beacon D5-29
 RADRF1 – Radar Reflector or FeatureD5-29
 RADRF2 – Radar Reflector or FeatureD5-30
 RANGEX – Range Extension D5-30
 REEF – Coral Reef, Large Icon D5-30
 REEF1 – Coral Reef, Small Icon D5-30
 REFUG1 – Refuge Beacon D5-30
 REFUG2 – Refuge Beacon D5-30
 REIL – Reil Light Unit.....D5-30
 RESCUE – Rescue Station.....D5-30
 RESPLT – Observation Research
 Platform D5-30
 RGVALV – Regulator Valve D5-31
 RSTAR – Range Star D5-31
 RVMMOP – Open River Mile MarkerD5-31
 RVMMSO – Solid River Mile MarkerD5-31
 RWCLL – Runway Centerline Light ..D5-31
 RWEL – Runway End Light D5-31
 RWLEL – Elevated Runway
 Edge Light.....D5-31
 RWLSF – Semiflush Runway
 Edge Light.....D5-31
 SAFE1 – Lighted Safe Water Mark D5-31
 SAFE2 – Lighted Safe Water Mark D5-32
 SAFE3 – Lighted Safe Water Mark D5-32
 SCNRH – Section Corner Hatched D5-32
 SCNRO – Section Corner Open.....D5-32
 SCNRT0 – Section Corner T Open D5-32
 SDM – Surface Displ. Monument.....D5-32
 SDMHOL – Storm Drainage ManholeD5-32
 SECCUT – Typical Section Cut.....D5-32
 SFL – Sequenced Flasher Light D5-32
 SHRUBC – Shrub, Coniferous.....D5-33
 SIGBRG – Bridge Light Inc Traffic....D5-33

SIGN – Sign D5-33
 SIGNWS – National Weather Service
 Station D5-33
 SIGSHO – Sub Signal Connect Shore.D5-33
 SIGST1 – General Signal Station.....D5-33
 SIGST2 – General Signal Station.....D5-33
 SIGSTP – Port Control Signal Station D5-33
 SIGSUB – Submarine Signal D5-33
 SIRLH1 – Siren at Lighthouse D5-34
 SIRLH2 – Siren at Lighthouse D5-34
 SLARRL – Slope Arrow w/ Enter
 Data Field.....D5-34
 SLARRR – Slope Arrow w/ Enter
 Data Field.....D5-34
 SLLX – Existing Street Light
 Luminaire.....D5-34
 SLREG – Constant Current
 Transformer.....D5-34
 SNLIFT – Sanitary Sewer Lift StationD5-34
 SNMETR – Sanitary Meter D5-34
 SNMHOL – Sanitary Manhole.....D5-34
 SNPVSL – Sanitary Pressure Vessel...D5-35
 SNVALT – Sanitary Valve Vault.....D5-35
 SP – Survey Pedestal.....D5-35
 SPAR1 – Spar Buoy Spindle Buoy D5-35
 SPAR2 – Spar Buoy Spindle Buoy D5-35
 SPARB – Black Spar Buoy D5-35
 SPARBT – Black Spar Buoy
 w/Topmark.....D5-35
 SPARWT – White Spar Buoy
 w/Topmark.....D5-35
 SPH1 – Spherical Buoy D5-35
 SPH2 – Spherical Buoy D5-36
 SPHD – Diagonal Stripe Spherical
 Buoy.....D5-36
 SPHV – Vertical Stripe Spherical
 Buoy.....D5-36
 SPHW – White Spherical Buoy D5-36
 SPILE – Submerged Piling.....D5-36
 SPILE1 – Submerged Piles D5-36
 SPILES – Submerged Piles D5-36
 SPILEX – Submerged Pile w/Position D5-36
 SPOST – Submerged Post.....D5-36
 SPOSTX – Submerged Post
 w/Position D5-37
 SPTANK – Septic Tank D5-37
 STAKE – Stake Perch D5-37
 STAKEX – Stake w/Position D5-37
 STHWY – State Highway Symbol.....D5-37
 STMPIT – Steam Pit D5-37

STUMPS – Submerged Stumps	D5-37
SUBSTA – Substation.....	D5-37
SUPER – Super Buoy.....	D5-37
SUWEL2 – Suspended Well, Depth Unknown.....	D5-38
SUWEL3 – Suspended Well, Depth Unknown.....	D5-38
SUWELY – Suspended Well, Depth Known.....	D5-38
SWAMP – Swamp	D5-38
SWELB1 – Submerged Well w/Buoy	D5-38
SWELB2 – Submerged Well w/Buoy	D5-38
SWELL5 – Submerged Prod Well	D5-38
TDZL – Touchdown Zone Light.....	D5-38
TELBBB – Black Telegraphic Barrel Buoy.....	D5-38
THL – Threshold Light	D5-39
TIDEG – Tide Gage	D5-39
TIDSTF – Tide Staff	D5-39
TIRETR – Tire Treddle	D5-39
TNKBG – Tank, Below Ground	D5-39
TNKHAG – Tank, Horizontal Above Ground.....	D5-39
TNKVAG – Tank, Vertical Above Ground.....	D5-39
TOW1 – Beacon Tower.....	D5-39
TOW2 – Beacon Tower.....	D5-39
TOW3 – Beacon Tower.....	D5-40
TOWB – Black Beacon Tower.....	D5-40
TOWBT1 – Black Beacon Tower w/Topmark.....	D5-40
TOWBT2 – Black Beacon Tower w/Topmark.....	D5-40
TOWER – Transmission Tower.....	D5-40
TOWW – White Beacon Tower	D5-40
TOWWT1 – White Beacon Tower w/Topmark.....	D5-40
TOWWT2 – White Beacon Tower w/Topmark.....	D5-40
TREEC – Tree, Coniferous	D5-40
TREED – Tree, Deciduous.....	D5-41
TREEG – Tree, Generic	D5-41
TRFSIG – Traffic Signal Mast Arm.....	D5-41
TRIPNT – Triangulation Point.....	D5-41
TRVALT – Transformer Vault.	D5-41
TSCTRL – Traffic Signal Controller. .	D5-41
TSHEAD – Traffic Signal Head.....	D5-41
TSPHS – Traffic Signal Phase No., Thru	D5-41

TSPHT – Traffic Signal Phase No., Turn	D5-41
TSVLDT – Traffic Signal Vehicle Loop Detector	D5-42
TWCLL – Taxiway Centerline Light..	D5-42
TWELEL – Elevated Taxiway End Light.....	D5-42
TWELSF – Semiflush Taxiway End Light.....	D5-42
TWGSGN – Taxiway Guidance Sign .	D5-42
TWLEL – Elevated Taxiway Edge Light.....	D5-42
TWLSF – Semiflush Taxiway Edge Light.....	D5-42
USHWY – US Highway Symbol	D5-42
UTPLX – Existing Pole.....	D5-42
VCDATA – Vertical Curve Data	D5-43
VERCPT – Vertical Control Point	D5-43
WAHHOL – Water Handhole	D5-43
WAMETR – Water Meter	D5-43
WAMHOL – Water Manhole.....	D5-43
WAPLNT – Water Plant	D5-43
WASOFT – Water Softener	D5-43
WAVALT – Water Valve Vault.....	D5-43
WEIR – Weir.....	D5-43
WELL1 – Wellhead, Above Water	D5-44
WELL3 – Wellhead, Above Water	D5-44
WINDCN – Windcone	D5-44
WITHYP – Port Hand Withy	D5-44
WITHYS – Starboard Hand Withy	D5-44
WRECK – Wreck, Not Dangerous.....	D5-44
WRKDNG – Wreck, Danger Depth Unknown.....	D5-44
WRKEXP – Wreck, Partly Exposed ...	D5-44
XFRPLX – Existing Transformer Pole	D5-44
XFRPMX – Existing Transformer Pad	D5-45

Geotechnical

Symbols

ANCHOL – Angle Cored Hole (Arrow=Dir).....	D6-3
ANTICL – Anticline	D6-3
BHHNUM – Backhoe Hole Number.....	D6-3
BOLOGR – Boring Log Refusal.....	D6-3
BORLOG – Boring Log Sheet	D6-3

CCHNUM – Concrete Core	
Hole Number	D6-3
CDRDSH – Consolidated-Drained	
Direct Shear	D6-3
CONDR – Consolidated Drained	D6-3
CONSOL – Consolidation.....	D6-3
CONTST – Consolidation Test	D6-4
CONUDR – Consolidated Undrained ...	D6-4
CPNHOL – Cone Penetrometer Hole....	D6-4
CUDRTT – Consolidated-Undrained	
Triaxial Test.....	D6-4
DSCHIC – Boring w/Inclinometer	D6-4
DSCHOL – Drive Sampled (SPT)	
and Cored.....	D6-4
DSCHPT – Drive Sampled (SPT)	
and Cored Hyd. Pressure Tested.....	D6-4
DSCHPZ – Drive Sampled (SPT)	
and Cored w/Piezometer	D6-4
DSCPZT – Drive Sampled (SPT)	
and Cored Hyd Test Piezometer	D6-4
DSHOL – Drive Sample (SPT) Hole	D6-5
DSHPZ – Disturbed Sample Boring	
w/Piezometer.....	D6-5
FBLCK1 – Fault Block Movement 1	D6-5
FBLCK2 – Fault Block Movement 2	D6-5
FDRAIN – Foundation Drain.....	D6-5
HAHNUM – Hand Auger Hole	
Number	D6-5
HANGF1 – High Angle Fault 1	D6-5
HANGF2 – High Angle Fault 2	D6-5
HDHNUM – Hand Dug Hole Number..	D6-5
HEXAGN – Hexagon Symbol	D6-6
HOLNUM – Hole Number, Elevation,	
Offset	D6-6
HRZBED – Horizontal Beds	D6-6
ICCSNG – Inclinometer Casing	D6-6
MOISTC – Moisture Content.....	D6-6
NSAHOL – Nonsampled Area	
of Hole	D6-6
OBSHOL – Piezometer or	
Observation Hole	D6-6
OPBLOG – Open Boring Log.....	D6-6
PAHNUM – Power Auger Hole	
Number	D6-6
PIEZOM – Piezometer	D6-7
PROPEX – Proposed Exploration	D6-7
PTHNUM – Perc Test Hole Number	D6-7
PZABD – Abandoned Piezometer.....	D6-7
PZUNIT – Piezometer Sensing Unit	D6-7

RDHNUM – Rotary Drill Hole	
Number	D6-7
RFWELL – Relief Well.....	D6-7
RSLASH – Refusal Slashes.....	D6-7
SAMPLE – Sample	D6-7
SDIJNT – Strike Dip of Inclined Joint..	D6-8
SQUARE – Square Symbol.....	D6-8
STKLNG – Sticklog Legend.....	D6-8
STKLOG – Sticklog.....	D6-8
STRKDP – Strike Dip	D6-8
STRKVJ – Strike of Vertical Joint	D6-8
STRKVP – Strike w/Vertical Dip	D6-8
SYNCLN – Syncline	D6-8
TPIOB – Test Pit in Overburden	D6-8
TRIANG – Triangle Symbol.....	D6-9
TSTHOL – Test Hole Symbol.....	D6-9
TTIOB – Test Trench in Overburden....	D6-9
UCELL – Uplift Cell	D6-9
UCONUD – Unconsolidated	
Undrained.....	D6-9
UCONUT Unconsolidated-Undrained	
Triaxial Test	D6-9
UDENIS – Undisturbed Denison	
or Push	D6-9
UDUNPZ – Undisturbed Sample Boring	
Piezometer.....	D6-9
ULIMIT – Unsatisfactory Limit	D6-9
VCHHPT – Vertical Core Hole Hyd.	
Pressure Tested	D6-10
VCHOL – Vertical Core Hole.....	D6-10
VHNUM – Vibracore Hole Number ...	D6-10
WASHBR – Washbored.....	D6-10
WBHNUM – Wash Boring Hole	
Number	D6-10
WLEVDL – Water Level Date Left	D6-10
WTRLEV – Water Level.....	D6-10

Civil

Symbols

AIRFLD – Airfield Symbol.....	D7-3
ARRPT – Parking Turn Arrow.....	D7-3
ARRSD – Straight Direction Arrow.....	D7-3
ARRST – Straight and Turn Arrow.....	D7-3
BREAK – Break Line Symbol	D7-3
BUOY – Buoy	D7-3
CATBSN – Catch Basin.....	D7-3

CATBSR – Round Catch Basin	D7-3
CDHDR – Core Drill Hole Drilled.....	D7-3
CDHUDR – Core Drill Hole Undrilled.....	D7-4
CLNOUT – Cleanout	D7-4
CNR90 – Corner Solid 90	D7-4
CNRSF – Corner Solid Flat.....	D7-4
CNTLIN – Centerline Symbol	D7-4
COGRAV – Center of Gravity	D7-4
CULVEE – Culvert End.....	D7-4
DBLARR – Dble Arrow Terminator.....	D7-4
DRLHOL – Drill Hole.....	D7-4
ECRD – Rock Dam Sediment Trap.....	D7-5
ERSBD – Staw Bale Dam	D7-5
ERSCTD – Sediment Ctrl Temp Div	D7-5
ERSF – Silt Fence	D7-5
ERSFRO – Silt Fence Rock Overflow ..	D7-5
ERSOST – Stone Outlet Sed Trap.....	D7-5
ERTGCE – Construction Entr Exit	D7-5
FLARRL – Flow Arrow Left in 0 Pt.	D7-5
FLARRR – Flow Arrow Right in 0 Pt....	D7-5
FOMETR – Fuel Oil Meter	D7-6
FOMHOL – Fuel Oil Manhole.....	D7-6
FOVALT – Fuel Oil Vault	D7-6
GREASE – Grease Trap	D7-6
GRITCH – Grit Chamber	D7-6
GSMETR – Natural Gas Meter	D7-6
GSMHOL – Natural Gas Manhole.....	D7-6
GSPLNT – Gas Plant	D7-6
GSRECR – Natural Gas Receiver	D7-6
GSTRAP – Natural Gas Trap	D7-7
GSVALT – Gas Valve Vault.....	D7-7
HEADWL – Headwall	D7-7
HNDCAP – Handicap Chair Symbol	D7-7
HORCPT – Horizontal Control Point....	D7-7
HOVCPT – Horiz. Vert. Control Point ..	D7-7
HUREYE – Hurricane Eye.....	D7-7
HYDRNT – Fire Hydrant.....	D7-7
INSHWY – Interstate Hwy Symbol	D7-7
IWMETR – Industrial Waste Water Meter	D7-8
IWMHOL – Industrial Waste Water Manhole	D7-8
JNBX – Junction Box.....	D7-8
MONWEL – Monitoring Well.....	D7-8
PHOCPT – Photo Control Point.....	D7-8
PIINFO – PI Information.....	D7-8
PIVALV – Post Indicator Valve.....	D7-8
PMPSTA – Pump Station.....	D7-8
RGVALV – Regulator Valve	D7-8

RRSIGN – Rail Signal	D7-9
RRSWTC – Rail Switch.....	D7-9
SCNRH – Section Corner Hatched	D7-9
SCNRO – Section Corner Open.....	D7-9
SDMHOL – Storm Drainage Manhole..	D7-9
SHRUBC – Shrub, Coniferous.....	D7-9
SHRUBD – Shrub, Deciduous	D7-9
SIGN – Sign	D7-9
SNLIFT – Sanitary Sewer Lift Station..	D7-9
SNMHOL – Sanitary Manhole.....	D7-10
SNPVSL – Sanitary Pressure Vessel...	D7-10
SNVALT – Sanitary Valve Vault.....	D7-10
SPOTEL – Ground Spot Elevation	D7-10
SPTANK – Septic Tank	D7-10
STHWY – State Highway Symbol.....	D7-10
STMPIT – Steam Pit	D7-10
SWAMP – Swamp	D7-10
TIDEG – Tide Gage	D7-10
TIRETR – Tire Treddle	D7-11
TNKBG – Tank, Below Ground	D7-11
TNKHAG – Tank, Horizontal Above Ground.....	D7-11
TNKVAG – Tank, Vertical Above Ground.....	D7-11
TRACR – Traffic Arm w/Card Reader	D7-11
TRAMS – Traffic Arm, Mechanical Swing.....	D7-11
TREEC – Tree, Coniferous	D7-11
TREED – Tree, Deciduous.....	D7-11
TREEG – Tree, Generic	D7-11
USHWY – US Highway Symbol	D7-12
VCDATA – Vertical Curve Data	D7-12
VERCPT – Vertical Control Point	D7-12
WAHHOL – Water Handhole.....	D7-12
WAMETR – Water Meter	D7-12
WAMHOL – Water Manhole.....	D7-12
WAPLNT – Water Plant	D7-12
WASOFT – Water Softener	D7-12
WAVALT – Water Valve Vault.....	D7-12

Landscape

Symbols

SHRUBC – Shrub, Coniferous.....	D8-3
SHRUBD – Shrub, Deciduous	D8-3
TREEC – Tree, Coniferous	D8-3

TREED – Tree, Deciduous.....	D8-3
TREEG – Tree, Generic	D8-3

Structural

Objects

4FRB – 4" Flat Ribbed Waterstop.....	D9-3
6FRBHD – 6" Flat Ribbed Waterstop, Heavy Duty	D9-3
6FRBLW – 6" Flat Ribbed Waterstop, Light Weight.....	D9-3
6RCBHD – 6"Ribbed Waterstop with Center Bulb, Heavy Duty.....	D9-3
6RCBLW – 6" Ribbed Waterstop with Center Bulb, Light Weight.....	D9-3
9FLBHD – 9" Flat Ribbed Waterstop Heavy Duty	D9-3
9FRBLW – 9" Flat Ribbed Waterstop Light Weight.....	D9-3
9RCBHD – 9" Ribbed Waterstop with Center Bulb, Heavy Duty.....	D9-3
9RCBLW – 9" Ribbed Waterstop with Center Bulb, Light Weight.....	D9-3
AZLBF – Foster Connection AZ LBF ..	D9-4
AZLBM – Foster Conn. AZ LBM	D9-4
BOX – Box Pile.....	D9-4
CMUFL – Fluted Concrete Block, 8 X 8 X 16.....	D9-4
CMURIB – Ribbed Concrete Block, 8 X 8 X 16.....	D9-4
CMUSF – Split Face Concrete Block, 8 X 8 X 16.....	D9-4
CMUSTR – Structural Concrete Block, 8 X 8 X 16.....	D9-4
PLZ23 – PLZ23 Sheet Piling	D9-4
PLZ25 – PLZ25 Sheet Piling	D9-4
PS27.5 – PS27.5 Sheet Pile	D9-5
PS31 – PS31 Sheet Pile.....	D9-5
PSA23 – PSA23 Sheet Pile	D9-5
PZ22 – PZ22 Sheet Pile.....	D9-5
PZ27 – PZ27 Sheet Pile.....	D9-5
PZ35 – PZ35 Sheet Pile.....	D9-5
PZ40 – PZ40 Sheet Pile.....	D9-5
PZBBSM – Foster Conn. HPile.....	D9-5
PZBULL – Foster Conn. Bullhead.....	D9-5
PZCBM – Foster Conn. CBM.....	D9-6
PZJOKR – Foster Conn. Joker	D9-6

PZWOM – Foster Conn. PZ WOM.....	D9-6
RC230 – RC230 Sheet Pile Conn.....	D9-6
RC231 – RC231 Sheet Pile Conn.....	D9-6
SS803 – Foster Superloc 1540.	D9-6
SS805 – Foster Cap 1550 1540.	D9-6
SS806 – Foster Superloc 1560.	D9-6
SS807 – Foster Cap 1560.	D9-6
SS808 – Foster Superloc 1550.	D9-7
SS809 – Foster 180 90 Connector.	D9-7
SS810 – Foster Superwale.....	D9-7
ZB_27 – Foster Angle Fab Corner.	D9-7
ZC270 – PZ22 PZ27 L Connection.....	D9-7
ZC271 – PZ22 PZ27 L Connection.....	D9-7
ZC272 – PZ22 PZ27 L Connection.....	D9-7
ZC273 – PZ22 PZ27 L Connection.....	D9-7
ZC274 – PZ22 PZ27 L Connection.....	D9-7
ZC275 – PZ22 PZ27 L Connection.....	D9-8
ZC276 – PZ22 PZ27 L Connection.....	D9-8
ZC277 – PZ22 PZ27 L Connection.....	D9-8
ZC278 – PZ22 PZ27 L Connection.....	D9-8
ZC279 – PZ22 PZ27 L Connection.....	D9-8
ZC350 – PZ35 PZ40 L Connection.....	D9-8
ZC351 – PZ35 PZ40 L Connection.....	D9-8
ZC352 – PZ35 PZ40 L Connection.....	D9-8
ZC353 – PZ35 PZ40 L Connection.....	D9-8
ZC354 – PZ35 PZ40 L Connection.....	D9-9
ZC355 – PZ35 PZ40 L Connection.....	D9-9
ZC356 – PZ35 PZ40 L Connection.....	D9-9
ZC357 – PZ35 PZ40 L Connection.....	D9-9
ZC358 – PZ35 PZ40 L Connection.....	D9-9
ZC359 – PZ35 PZ40 L Connection.....	D9-9
ZT270 – PZ22 PZ27 T Connection.....	D9-9
ZT271 – PZ22 PZ27 T Connection.....	D9-9
ZT350 – PZ35 PZ40 T Connection.....	D9-9
ZT351 – PZ35 PZ40 T Connection.....	D9-10
ZX270 – PZ22 PZ27 Cross Conn.....	D9-10
ZX350 – PZ35 PZ40 Cross Conn.....	D9-10

Symbols

ANBOLT – Anchor Bolt	D9-13
CNTLIN – Centerline Symbol	D9-13
COLLIN – Column Line/Grid Ind.	D9-13
JSTBR1 – Joist Bar, Single Line.....	D9-13
JSTBR2 – Joist Bar, Single Line.....	D9-13
PLATE – Plate Symbol	D9-13

Architectural

Objects

BRKGL – Glazed Brick	D10-3
CMU – Masonry Unit.....	D10-3
CMUBLK – Concrete Block, 8X8X16D10-3	
CMUCOR – Concrete Block, 8X8X16 Corner.....	D10-3
CMUEND – Concrete Block, 8X8X16 End	D10-3
CMUGL – Glazed Concrete Block	D10-3
CMUSTR – Concrete Block, 8X8X16 Str.....	D10-3
DOR18L – Left Door, 180 Degree Swing	D10-3
DOR18R – Right Door, 180 Degree Swing	D10-3
DORBFL – Left Bifold Door	D10-4
DORBFR – Right Bifold Door.....	D10-4
DORCPV – Door Center Pivot.....	D10-4
DORCYL – Dark Room Door.....	D10-4
DORDBL – Left Double Door	D10-4
DORDBR – Right Double Door.....	D10-4
DORDEL – Left Double Egress Door.D10-4	
DORDER – Right Double Egress DoorD10-4	
DORFSL – Left Single Full Swing Door	D10-4
DORFSR – Right Single Full Swing Door	D10-5
DOROVH – Overhead Door	D10-5
DORPOC – Door Pocket.....	D10-5
DORREV – Revolving Door.....	D10-5
DORRUP – Roll Up Door.....	D10-5
DORSHL – Left Single Hinged Door. D10-5	
DORSHR – Right Single Hinged DoorD10-5	
DORSLD – Sliding Door	D10-5
DORSLS – Sliding Surface Door.....	D10-5
DORSPL – Left Single Pivot Door	D10-6
DORSPR – Right Single Pivot Door...D10-6	
DORUDL – Left Uneven Double DoorD10-6	
DORUDR – Right Uneven Dbl. Door.D10-6	
LINTEL – Concrete Beam Bond Lintel.....	D10-6
WINAWN – Window Awning.....	D10-6
WINBAY – Projected Bay Window ...D10-6	
WINBOW – Projected Bow Window .D10-6	
WINBOX – Projected Box Window ...D10-6	

WINDCI – Window Double Casement Inward Open.....	D10-7
WINDCO – Window Double Casement Outward Open	D10-7
WINDH – Double Hung Window	D10-7
WINFIX – Fixed 1 Foot Window	D10-7
WINJAL – Jalousie Window.....	D10-7
WINOSL – Sliding Window Left Operating Sash.....	D10-7
WINOSR – Sliding Window Right Operating Sash.....	D10-7
WINPIV – Pivot Window	D10-7
WINSCL – Window Single Casement Left Jamb Hinge.....	D10-7
WINSCR – Window Single Casement Right Jamb Hinge	D10-8
WINSH – Single Hung Window	D10-8

Symbols

ARCPBW – Architectural Particleboard Woodwork	D10-11
ASBDLS – Large Scale Asbestos Board.....	D10-11
ASBDSS – Small Scale Asbestos Board.....	D10-11
BATHCO – Corner Bath	D10-11
BATHEM – Emergency Bath	D10-11
BATHFT – Foot Bath.....	D10-11
BATHHA – Hydrotherapy Arm BathD10-11	
BATHHH – Hydrotherapy Hubbard Bath	D10-11
BATHHL – Hydrotherapy Leg Bath.D10-11	
BATHIF – Infant Bath	D10-12
BATHIN – Institutional Bath	D10-12
BATHRC – Recessed Bath	D10-12
BATHRR – Roll Rim Bath.....	D10-12
BATHSZ – Sitz Bath.....	D10-12
BATHWP – Whirlpool Bath	D10-12
BIDET – Watercloset Bidet.....	D10-12
BRFACC – Brick Face on Common .D10-12	
BRFIRE – Fire Brick.....	D10-12
BSSFLG – Bluestone / Slate / Soapstone / Flagging.....	D10-13
CANWCT – Can Washer, Cabinet Type	D10-13
CANWDT – Can Washer, Dish TypeD10-13	
CARPET – Carpet and Pad	D10-13

CPLANK – Concrete Plank.....D10-13
 DFPROJ – Drinking Fountain,
 Projecting Type.....D10-13
 DFRECS – Drinking Fountain,
 Recessed Type D10-13
 DFSREC – Drinking Fountain,
 Semi-Recessed Type.....D10-13
 DSHWSH – Commercial DishwasherD10-13
 EQPMID – Equipment Identifier D10-14
 FASTEN – Fastener D10-14
 FLRRPL – Flooring, Resilient
 Plastic Laminate.....D10-14
 FURCHH – Furring Channel Hat.....D10-14
 FURCHN – Furring Channel.....D10-14
 GLASLS – Large Scale Glass D10-14
 GLASSS – Small Scale Glass D10-14
 GLBLLS –Glass Block, Large Scale.D10-14
 GLBLSS –Glass Block, Small Scale.D10-14
 GLELEV – Glass Elevation D10-15
 GPLANK – Gypsum Plank D10-15
 GYPBLK – Gypsum Block.....D10-15
 GYP POM – Gypsum Plaster on
 Masonry D10-15
 GYP PPB – Gypsum Plaster Particle
 Board.....D10-15
 GYP SPP – Gypsum Solid Plaster
 Partition.....D10-15
 GYP WBD – Gypsum Wallboard
 Finishes D10-15
 INFBSS – Small Scale Flexible
 Blanket Insulation D10-15
 INLFLS – Large Scale Loose Fill
 Insulation D10-15
 INS1RM – Insulation, Reflective Metal
 On 1 Side D10-16
 INS2RM – Insulation, Reflective
 Curtain 2 Sides (Sm. Scale).....D10-16
 INSFOM – Spray Foam Insulation....D10-16
 INSTND – Insulation, Type Not
 Determined (Lg. Scale).....D10-16
 LAVBCK – Back Lavatory D10-16
 LAVCOR – Corner Lavatory D10-16
 LAVCOU – Lavatory in Counter D10-16
 LAVDNT – Dental Lavatory.....D10-16
 LAVHND – Handicapped Lavatory..D10-16
 LAVMDM – Med. Manicure Lav. D10-17
 LAVSLB – Slab Type Lavatory.....D10-17
 MTL LPL – Metal Lath and Plaster ...D10-17
 MTL SHT – Metal Sheet and all Metals
 (Small Scale).....D10-17

ORISTB – Oriented Strand Board.....D10-17
 PARTBD – Particleboard D10-17
 PLASTC – Plastic Finishes D10-17
 PLPLLS – Large Scale Plastic on
 Plywood D10-17
 PLPLSS – Small Scale Plastic on
 Plywood D10-17
 PLYWD – Plywood.....D10-18
 RBIILS – Rigid Board on
 Interior Insulation, Large Scale...D10-18
 RBISLS – Insulation, Rigid Board
 as Sheathing (Lg. Scale) D10-18
 ROMID3 – Room Identifier, 3 char. .D10-18
 ROMID4 – Room Identifier, 4 char. .D10-18
 SDIRLD – Stair Dir. Line Down.....D10-18
 SDIRLU – Stair Direction Line Up...D10-18
 SHWRCO – Corner Shower.....D10-18
 SHWRHD – Shower Head D10-18
 SHWROG – Shower Overhead GangD10-19
 SHWRPG – Shower Pedestal Gang ..D10-19
 SHWRST – Shower Stall D10-19
 SLOPE – Direction of Line Slope D10-19
 SNK2BD – Double Bowl Sink.....D10-19
 SNK2CT – Two Compartment Sink .D10-19
 SNK CWT – Circ. Wash Type Sink...D10-19
 SNK DSP – Sink Disposer D10-19
 SNK FRC – Flushing Rim
 Clinical Sink D10-19
 SNK GEN – General Sink.....D10-20
 SNK KLR – Kitchen Sink D10-20
 SNK LDB – Sink w/Left Drainboard.D10-20
 SNK LTR – Sink Laundry Tray D10-20
 SNK SCW – Semi-Circ. Wash Sink...D10-20
 SNK SLP – Slop-Type Sink.....D10-20
 SNK SRV – Service Sink.....D10-20
 SNK SSC – Surgeon Scrub Sink.....D10-20
 STLCSS – Structural Clay Tile,
 Small Scale.....D10-20
 SUSPNT – Suspension Tee D10-21
 TC1FLS – Terra Cotta Glazed
 1 Face (Large Scale) D10-21
 TC2FSS – Terra Cotta Glazed
 2 Faces (Small Scale).....D10-21
 TCHOLW – Hollow Terra Cotta.....D10-21
 TCLS – Large Scale Terra Cotta D10-21
 TCQLS – Terra Cotta Quarry.....D10-21
 TCUGLS – Terra Cotta Unglazed
 (Large Scale).....D10-21
 TCVENR – Veneer Terra Cotta D10-21
 THRSHD – Threshold.....D10-21

TILFSS – Small Scale Tile Facing D10-22
 TILGSC – Glazed Structural Clay
 Tile Masonry D10-22
 TILSFU – Tile Structural Floor UnitsD10-22
 TLACOU – Acoustical Tile Finishes D10-22
 TLCRLS – Ceramic Tile Finish
 Large Scale D10-22
 TRAY1L – Single Laundry Tray D10-22
 TRAY2L – Double Laundry Trays ...D10-22
 URNLCO – Corner Type Urinal D10-22
 URNLPD – Pedestal Type Urinal D10-22
 URNLST – Urinal Stall.....D10-23
 URNLTR – Trough Type Urinal D10-23
 URNLWH – Wall Hung Urinal.....D10-23
 WALLID – Wall Type Identifier D10-23
 WCFVFO – FV Flr Outlet WC D10-23
 WCFVWH – FV WH Watercloset D10-23
 WCITNK – Integral Tank WC D10-23
 WCTANK – Tank Type WC.....D10-23
 WCWHTN – WH Tank WC D10-23
 WDFLBD – Wood Floor Board.....D10-24
 WDFNOS – Wood Finish on Studs ..D10-24
 WDFRAM – Continuous Wood
 Framing.....D10-24
 WDSHSD – Wood Shingles Siding ..D10-24
 WFINSH – Wood Finish.....D10-24
 WINID – Window Identifier D10-24
 WOODHB – Hardboard Wood D10-24
 WTRPFF – Waterproofing Felt
 Flashing.....D10-24

Interiors

Objects

ABLLBD – Bulletin Board D11-3
 ACOSTM – Costumer.....D11-3
 ADDCAB – Double Door Cabinet.....D11-3
 AEAS30 – Easel, 30W (Hidden).....D11-3
 AMAG15 – Magazine Rack,
 15W X 3D D11-3
 AMAGLT – Magnifying Light D11-3
 APRJSC – Projection Screen,
 Ceiling-Mounted.....D11-3
 ASTCAB – Storage Cabinet.....D11-3
 D65CLR – Desk 65 Comp LR D11-3
 D65CRR – Desk 65 Comp RR.....D11-4

D7230L – L.H. Single Pedestal Desk,
 72W X 30D (2) D11-4
 D7230R – R.H. Single Pedestal Desk,
 72W X 30D (2) D11-4
 DPFF – Desk, Double File Pedestal D11-4
 DPFL – Desk, Left Pedestal D11-4
 DPFR – Desk Return Pedestal File D11-4
 DSC1 – Desk, Study Carrel, Single.....D11-4
 ECGAME – Freestanding Computer
 Game.....D11-4
 ECOMCN – Comsec Container D11-4
 EDRYER – Dryer.....D11-5
 EPINBL – Pinball Machine.....D11-5
 EREFRG – Refrigerator D11-5
 ETV – Television D11-5
 EVEND – Vending Machine.....D11-5
 EWASHM – Washing Machine D11-5
 F4DL – Lateral File Cab-4 Drawer D11-5
 FC3618 – Storage Cabinet,
 36W X 18D.....D11-5
 FE7422 –Equip. Shelving, 74W X 22D,
 Barracks D11-5
 FV1833 – Vertical File, 18W X 33D ..D11-6
 GIDIR – Directory.....D11-6
 GIIS1 – Identification Sign w/1 Slot...D11-6
 GIIS2 – Identification Sign w/2 Slots .D11-6
 GIPIC1 – Pictogram 1 D11-6
 GIPIC2 – Pictogram 2 D11-6
 GMAN – Man Symbol for Restroom
 Signage.....D11-6
 GWOMAN – Woman Symbol for
 Restroom Signage D11-6
 SDMGT – Management Chair w/Arms
 24W X 22D.....D11-6
 SDSEC – Secretarial Chair w/out
 Arms, 23W X 22D D11-7
 SDTASK – Task Chair.....D11-7
 SGANG – Gang Seating w/Table.....D11-7
 SSOF37 – Sofa Chair, 37W X 34D.....D11-7
 SSOF63 – 2 Cushion Sofa,
 63W X 34D.....D11-7
 SSOF82 – 3 Cushion Sofa,
 82.5W X 34D.....D11-7
 STAB24 – Chair Tablet Arm,
 24W X 24D.....D11-7
 T42SQ – Table, 42SQ w/ Armless
 Chairs D11-7
 TMS30 – Mailsort Table 16 OH
 Slots 30W.....D11-7

TPOOL – Pool Table.....	D11-8
TROUND – Round Table.....	D11-8
W7230L – Workstation L Unit LR	D11-8
W7230R – Workstation L Unit RR.....	D11-8
WCPDSK – Desk, Computer	D11-8
WFLIPR – Flipper Door Unit	D11-8
WLIGHT – Workstation Light.....	D11-8
WPED – Workstation Pedestal.....	D11-8

Symbols

ACURTN – Curtain.....	D11-11
APLANT – Artificial Plant	D11-11
GHNDGP – Universal Handicap Symbol	D11-11
GIID – Identification Sign.....	D11-11
MFMATL – Furniture Material List	D11-11
MFSCHD – Furniture Schedule	D11-11
MFSYMB – Furniture Symbol.....	D11-11
MNORTH – North Arrow	D11-11
MRSCHD – Room Finish Schedule..	D11-11
MSSCHD – Signage Schedule	D11-12

Fire Protection

Symbols

1DIR – Direction Arrow.....	D12-3
ABORT – Abort Switch	D12-3
ACCESS – Fire Department Access ...	D12-3
AGSTCN – Agent Storage Container ..	D12-3
BELLFA – Fire Alarm Bell.....	D12-3
BFPDCK – Backflow Preventer Double Check	D12-3
BFPRPZ – Backflow Preventer RPZ ..	D12-3
BOILER – Boiler.....	D12-3
CHIMNY – Chimney	D12-3
CO2AA – CO2 Automatically Actuated Extinguishing System	D12-4
CO2MA – CO2 Manually Actuated Extinguishing System	D12-4
CONSFS – Freestanding Siamese Fire Department Connection	D12-4
CONSIA – Siamese Fire Department Connection.....	D12-4
CONSNG – Single Fire Department Connection.....	D11-4
CPESR – Elevator Status/Recall	D12-4

CPFAC – Fire Alarm Communicator..	D12-4
CPFCP – Fire Alarm Control Panel	D12-4
CPFSA – Fire System Annunciator.....	D12-4
CPFTR – Fire Alarm Transponder or Transmitter.....	D12-5
CPHCP – Halon Control Panel.....	D12-5
CPHVA – Control Panel for HVAC ...	D12-5
DCATAA – All-Type Fire Extinguisher, Automatically Actuated.	D12-5
DCATMA – All-Type Fire Extinguisher, Manually Actuated.....	D12-5
DCEABC – Dry Chemical Extinguisher (ABC-Type)	D12-5
DCEBC – Dry Chemical Extinguisher (BC-Type).....	D12-5
DCECO2 – CO2 Extinguisher.....	D12-5
DCEHLN – Halon or Clean Agent Extinguisher	D12-5
DCLGAA – Dry Chemical System Auto Act. (Liquid, Gas, Elec. Fires)	D12-6
DCLGMA – Dry Chemical System Man Act. (Liquid, Gas, Elec. Fires)	D12-6
DMPBAR – Barometric Damper	D12-6
DMPFIR – Fire Damper	D12-6
DMPFS – Fire/Smoke Damper	D12-6
DMPSMK – Smoke Damper.....	D12-6
DRHOLD – Door Holder	D12-6
DTFLAM – Flame Detector	D12-6
DTFLOW – Flow Detector/Switch	D12-6
DTGAS – Gas Detector	D12-7
DTLEVL – Level Detector/Switch	D12-7
DTPRES – Pressure Detector/ Switch	D12-7
DTTAMP – Tamper Detector	D12-7
ELBP1L – 1-Lamp Emergency Light, Battery Powered.....	D12-7
ELBP2L – 2-Lamp Emergency Light, Battery Powered.....	D12-7
ELBP3L – 3-Lamp Emergency Light, Battery Powered.....	D12-7
EPSTA – Emergency Phone Station ...	D12-7
ESCAPE – Fire Escape	D12-7
EXFOAM – Foam Extinguisher.....	D12-8
EXITCM – Ceiling Mounted Exit Sign Light.....	D12-8
EXITLF – Exit Sign, Lighted Face	D12-8
EXITWM – Wall Mounted Exit Sign Light.....	D12-8
EXWATR – Water Extinguisher.....	D12-8
FANDCT – Duct Fan	D12-8

FANGEN – General Fan D12-8
 FANWAL – Wall Fan D12-8
 FDOR3 – 3-Hour Rated Fire Door
 in Wall.....D12-8
 FDORL3 – Wall w/<3-Hour
 Rated Door.....D12-9
 FPDRIV – Fire Pump w/Drives D12-9
 FPFREE – Free Standing Test Header D12-9
 FPTEST – Wall-Mtd. Test Header.....D12-9
 FRR1HR – 1-Hour Fire Resistance
 Rating.....D12-9
 FRR2HR – 2-Hour Fire Resistance
 Rating.....D12-9
 FRR30M – 30 Minute Fire Resistance
 Rating.....D12-9
 FRR3HR – 3-Hour Fire Resistance
 Rating.....D12-9
 FRR45M – 45 Minute Fire Resistance
 Rating.....D12-9
 FRR4HR – 4-Hour Fire Resistance
 Rating.....D12-10
 FULLSS – Fully Sprinklered Space ..D12-10
 HD – Heat Detector D12-10
 HLNAA – Automatically Actuated Halon
 Extinguishing System D12-10
 HLNMA – Manually Actuated Halon
 Extinguishing System D12-10
 HOSECS – Hose Station, Charged
 Standpipe D12-10
 HOSEDS – Hose Station,
 Dry Standpipe. D12-10
 HRN1A – Horn w/Light,
 One Assembly D12-10
 HRNMIN – Mini Horn.....D12-10
 HRNSA – Horn w/Light,
 Separate Assembly.....D12-11
 HRNSPK – Speaker/Horn
 (Electric Horn) D12-11
 HYDPR1 – Private Hydrant,
 One-Hose Outlet D12-11
 HYDPR2 – Private Housed Hydrant,
 Two-Hose Outlets D12-11
 HYDPU2 – Public Hydrant,
 Two-Hose Outlets D12-11
 HYDPUP – Public Hydrant, Two-Hose
 Outlets, Pumper Connection D12-11
 HYDW2H – Wall Hydrant,
 Two-Hose Outlets D12-11
 LITFAS – Light.....D12-11

MANSTA – Manual Station.....D12-11
 METRFP – Meter D12-12
 MNCHRG – Monitor Nozzle,
 Charged.....D12-12
 MNDRY – Monitor Nozzle, Dry.....D12-12
 NONSS – Non-Sprinklered Space.....D12-12
 PARTSS – Partially Sprinklered
 Space.....D12-12
 PURGE – Manual Purge Control D12-12
 RISER – Riser D12-12
 RSCO2 – CO2 Reel Station D12-12
 RSDRYC – Dry Chemical
 Reel Station.....D12-12
 RSFOAM – Foam Reel Station.....D12-13
 SCREEN – Screen.....D12-13
 SD –Smoke Detector. D12-13
 SDUCT – Smoke Detector for Duct..D12-13
 SHGARD – Sprinkler Head w/Guard.D12-13
 SHNUU – Nippled Up Upright
 Sprinkler Head D12-13
 SHOUT – Outside Sprinkler Head D12-13
 SHPEND – Pendent Sprinkler Head .D12-13
 SHPNDN – Pendent Sprinkler Head, on
 Drop Nipple D12-13
 SHSIDE – Sidewall Sprinkler Head..D12-14
 SHUPRT – Upright Sprinkler Head..D12-14
 SMKBAR – Smoke Barrier.....D12-14
 SSNOZZ – Special Spray Nozzle.....D12-14
 THRUST – Thrust Block D12-14
 TNKBG – Tank, Below Ground D12-14
 TNKHAG – Tank, Horizontal
 Above Ground D12-14
 TNKVAG – Tank, Vertical
 Above Ground D12-14
 VLVCHA – Alarm Check Valve.....D12-14
 VLVCHK – Check Valve.....D12-15
 VLVDEL – Deluge Valve D12-15
 VLVDRY – Dry Pipe Valve.....D12-15
 VLVFLT – Float Valve D12-15
 VLVGEN – General Valve D12-15
 VLVIBF – Indicating Butterfly
 Valve.....D12-15
 VLVKEY – Key-Operated Valve D12-15
 VLVNON – Nonindicating Valve
 (Nonrising Stem).....D12-15
 VLVOSY – OS&Y Valve D12-15
 VLVPI – Post Indicator Valve D12-16
 VLVPIIT – Valve in Pit.....D12-16
 VLVPRE – Preaction Valve D12-16

VLVPRG – Pressure Reg. Valve.....	D12-16
VLVPRV – Pressure Relief Valve	D12-16
VLVQOD – Dry Pipe Valve, w/Quick Opening Device	D12-16
VLVTDS – Valve w/ Tamper Detector/Switch.....	D12-16
VNTOPN – Ventilation Openings.....	D12-16
WALARM – Water Motor Alarm	D12-16
WATRSS – Water Spray System.....	D12-17
WBDSMA – Water-Based Dry System Manually Actuated.....	D12-17
WBDSSA – Water-Based Dry System Automatically Actuated	D12-17
WBFSAA – Water-Based Foam System Automatically Actuated	D12-17
WBFSMA – Water-Based Foam System Manually Actuated.....	D12-17
WBWSAA – Water-Based Wet System, Automatically Actuated	D12-17
WBWSMA – Water-Based Wet System, Manually Actuated.....	D12-17

Plumbing

Symbols

CAPSC – Cap.....	D13-3
DRNFUN – Open Drain Funnel.....	D13-3
EL45SC – 45 Degree Elbow	D13-3
EL90SC – 90 Degree Elbow	D13-3
ELBSC – Base Elbow	D13-3
ELDBSC – Double Branch Elbow	D13-3
ELLRSC – Long Radius Elbow	D13-3
ELODSC – Side Outlet Elbow, Outlet Down.....	D13-3
ELOUSC – Side Outlet Elbow, Outlet Up.....	D13-3
ELSTRT – Street Elbow.....	D13-4
ELTDSC – Turned Down Elbow	D13-4
ELTUSC – Turned Up Elbow	D13-4
FCO – Floor Cleanout	D13-4
FDCO – Floor Drain with Cleanout	D13-4
FDDT – Floor Drain with Deep Trap	D13-4
FDNT – Floor Drain with No Trap	D13-4
FDTP – Floor Drain with Trap Prime	D13-4
FDWT – Floor Drain with Trap	D13-4
FLBLND – Blind Flange.....	D13-5
FLOW3 – Flow Arrow	D13-5
FLRPEN – Iso. Floor Penetration	D13-5

GAUGE – Gauge.....	D13-5
HANGRD – Hanger Rod.....	D13-5
HANGSP – Hanger Spring.....	D13-5
ISOEWC – Isometric EWC.....	D13-5
ISOLAV – Isometric Lavatories.....	D13-5
ISOMOP – Isometric Mop Sink	D13-5
ISOURL – Isometric Wall Mounted Urinals.....	D13-6
ISOWC1 – Isometric Floor Mounted Water Closet	D13-6
ISOWC2 – Isometric Wall Mounted Water Closet	D13-6
LOOPL – Left Dimension Loop.....	D13-6
LOOPR – Right Dimension Loop	D13-6
PLGBFL – Bull Plug, Flanged	D13-6
PLGPSC – Pipe Plug.....	D13-6
PRGGCO – Press. Gauge and Cock....	D13-6
PUMP – Pump.....	D13-6
PUMPP – Pump (Schematic)	D13-7
PUMPS – In-Line Pump.....	D13-7
SLEEVE – Sleeve	D13-7
STGLAS – Sight Glass.....	D13-7
STRAIN – Strainer	D13-7
STRBLO – Blow Off Strainer.....	D13-7
TDSSC – Double Sweep Tee	D13-7
THERM – Thermometer	D13-7
TRAPST – Steam Trap.....	D13-7
TSODSC – Tee, Side Outlet, Outlet Down.....	D13-8
TSOUSC – Tee, Side Outlet, Outlet Up.....	D13-8
TSSSC – Straight Size Tee.....	D13-8
TSSWSC – Single Sweep Tee.....	D13-8
UNIOSC – Union	D13-8
VA3WAM – 3-Way Air Motor Controlled Valve.....	D13-8
VA3WEM – 3-Way Electric Motor Controlled Valve.....	D13-8
VA3WM – 3-Way Manual Valve	D13-8
VAAHOS – Angle Hose Valve.....	D13-8
VABALL – Ball Valve.....	D13-9
VABFLY – Butterfly Valve	D13-9
VACWR – Condenser Water Regulating Valve	D13-9
VADISC – Diaphragm Valve	D13-9
VAEMTR – Valve Actuator Electric Motor	D13-9
VAESOL – Valve Actuator Electric Solenoid	D13-9

VAGAMC – Air Motor Controlled Gate Valve	D13-9
VAGLAM – Air Motor Controlled Globe Valve	D13-9
VAGLE – Angle Globe Valve (Elevation)	D13-9
VAGLSE – Globe Valve	D13-10
VAGSE – Angle Gate Valve, (Elevation)	D13-10
VAGSP – Angle Gate Valve (Plan) ..	D13-10
VAGTSE – Gate Valve	D13-10
VAHASC – Hose Angle Valve	D13-10
VAHGLS – Hose Globe Valve	D13-10
VAHGSC – Hose Gate Valve	D13-10
VALSSC – Lock Shield Valve.....	D13-10
VAMAGS – Magnetic Stop Valve....	D13-10
VAMNNS – Valve Actuator Manual Nonrising Stem	D13-11
VAMOGS – Motor Operated Gate Valve.....	D13-11
VAMOLS – Motor Operated Globe Valve.....	D13-11
VAMOSY – Valve Actuator Manual Outside Stem & Yoke	D13-11
VANEED – Needle Valve.....	D13-11
VAPLUG – Plug Valve.....	D13-11
VAPMTD – Valve Actuator Pneumatic Motor Diaphragm.....	D13-11
VAPRED – Pressure Reducing Valve	D13-11
VAPRRD – Pressure Reducing Valve	D13-11
VAQOSC – Quick Opening Valve....	D13-12
VARELF – Relief or Safety Valve....	D13-12
VASCE – Angle Globe Valve (Elevation)	D13-12
VASCP – Angle Globe Valve (Plan)	D13-12
VASFSC – Safety Valve	D13-12
VASGCH – Swing Gate Check Valve	D13-12
VASNAP – Snap Action Valve.....	D13-12
VASOLN – Solenoid Valve	D13-12
VASPCH – Spring Check Valve.....	D13-12
VASTSC – Gate Valve.....	D13-13
VASWSC – Straight Way Check Valve.....	D13-13
VATPR – Temperature Pressure Relief Valve	D13-13
VLVCHK – Check Valve.....	D13-13

Mechanical

Symbols

ACCDOR – Duct Access Door	D14-3
AGUIDE – Alignment Guide	D14-3
AIRELM – Air Eliminator	D14-3
AIRIN – Air In	D14-3
AIRSEP – Air Separator.....	D14-3
ANCHRI – Anchor.....	D14-3
AVENTA – Automatic Air Vent.....	D14-3
AVENTM – Manual Air Vent.....	D14-3
BALLJT – Ball Joint	D14-3
BUSHSC – Bushing	D14-4
CAPSC – Cap.....	D14-4
CAPTUB – Capillary Tube	D14-4
CDRND – Round Ceiling Diffuser	D14-4
CDSQR – Square Ceiling Diffuser.....	D14-4
CFM2X3 – Airflow CFM.....	D14-4
CFM2X4 – Airflow CFM.....	D14-4
CFM3X4 – Airflow CFM.....	D14-4
COCKSC – Cock.....	D14-4
CREDSC – Concentric Reducer.....	D14-5
CRSRSC – Cross.....	D14-5
CUPJNT – Coupling Joint.....	D14-5
DCTHTR – Electric Duct Heater	D14-5
DMPEOC – Electric Operated Damper Control	D14-5
DMPFIR – Fire Damper.....	D14-5
DMPFS – Fire Smoke Damper.....	D14-5
DMPPOD – Pneumatic Damper.....	D14-5
DMPSMK – Smoke Damper.....	D14-5
DPRSD – Duct Pressure Class Down..	D14-6
DPRSH – Duct Pressure Class Horiz ..	D14-6
DPRSL – Duct Pressure Class Left	D14-6
DPRSR – Duct Pressure Class Right....	D14-6
DPRSU – Duct Pressure Class Up	D14-6
DPRSV – Duct Pressure Class Vert	D14-6
DRIER – Drier.....	D14-6
EEQ2X2 – Electrical Equipment 2X2 Mark.....	D14-6
EEQ2X3 – Electrical Equipment 2X3 Mark.....	D14-6
EEQ2X4 – Electrical Equipment 2X4 Mark.....	D14-7
EEQ3X2 – Electrical Equipment 3X2 Mark	D14-7

EEQ3X3 – Electrical Equipment	
3X3 Mark.....	D14-7
EEQ3X4 – Electrical Equipment	
3X4 Mark.....	D14-7
EL45SC – 45 Degree Elbow	D14-7
EL90SC – 90 Degree Elbow	D14-7
ELBSC – Base Elbow	D14-7
ELDBSC – Double Branch Elbow	D14-7
ELLRSC – Long Radius Elbow	D14-7
ELODSC – Side Outlet Elbow,	
Outlet Down.....	D14-8
ELOUSC – Side Outlet Elbow,	
Outlet Up.....	D14-8
ELSTRT – Street Elbow.....	D14-8
ELTDSC – Turned Down Elbow	D14-8
ELTUSC – Turned Up Elbow	D14-8
EREDSC – Eccentric Reducer	D14-8
EXPJNT – Expansion Joint.....	D14-8
FANERV – Exhaust Roof Vent Fan ...	D14-8
FANLRV – Louvered Roof	
Vent Fan.....	D14-8
FANSRV – Intake Roof Vent Fan.....	D14-9
FLBLND – Blind Flange.....	D14-9
FLOW2 – Air Flow Direction Arrow..	D14-9
FLRPEN – Iso. Floor Penetration	D14-9
FLXCON – Flexible Connector	D14-9
GAUGE – Gauge.....	D14-9
GRILEX – Exhaust Grille	D14-9
GRILSU – Supply Grille.....	D14-9
HANGRD – Hanger Rod.....	D14-9
HANGSP – Hanger Spring.....	D14-10
HSENS – Humidity Sensor	D14-10
HSTAT – Humidistat	D14-10
LNDIFF – Linear Diffuser	D14-10
LOOPL – Left Dimension Loop.....	D14-10
LOOPR – Right Dimension Loop	D14-10
LOUOPN – Door or Wall Louver	
Opening.....	D14-10
PIDROP – Pitch or Pipe Drop	D14-10
PIRISE – Pitch or Pipe Rise	D14-10
PLGBFL – Bull Plug, Flanged.....	D14-11
PLGPSC – Pipe Plug	D14-11
PRGGCO – Pressure Gage	
and Cock	D14-11
PSDIFF – Pump Suction Diffuser	D14-11
PUMP – Pump.....	D14-11
PUMPP – Pump (Schematic)	D14-11
PUMPS – In-Line Pump.....	D14-11
SCALET – Scale Trap.....	D14-11
SLEEVE – Sleeve	D14-11
STGLAS – Sight Glass.....	D14-12
STRAIN – Strainer	D14-12
STRBLO – Blow Off Strainer.....	D14-12
SUPOUT – Supply Outlet	
(Wall Supply).....	D14-12
TDSSC – Double Sweep Tee	D14-12
THERM – Thermometer	D14-12
THERMW – Thermometer Well.....	D14-12
THHRB – Thermostat, Remote Bulb	D14-12
THHSC – Thermostat, Self	
Contained (HVAC)	D14-12
THLPRS – Thermostat, Low Pressure	D14-13
THMCP – Thermostat,	
Microprocessor	D14-13
THPELE – Thermostat, Electric.....	D14-13
THPPNE – Thermostat, Pneumatic ...	D14-13
TMPSEN – Temperature Sensor	D14-13
TODSC – Tee, Outlet Down	D14-13
TOUSC – Tee, Outlet Up	D14-13
TRAPFL – Float Trap	D14-13
TRAPFT – Float and Thermostatic	
Trap.....	D14-13
TRAPST – Steam Trap.....	D14-14
TRAPTБ – Thermostatic Blast	
Trap.....	D14-14
TSODSC – Tee, Side Outlet,	
Outlet Down.....	D14-14
TSOUSC – Tee, Side Outlet,	
Outlet Up.....	D14-14
TSSSC – Straight Size Tee.....	D14-14
TSSWSC – Single Sweep Tee.....	D14-14
UNIOSC – Union	D14-14
VA3WAM – 3-Way Air Motor	
Controlled Valve.....	D14-14
VA3WEM – 3-Way Electric Motor	
Controlled Valve.....	D14-14
VA3WM – 3-Way Manual Valve	D14-15
VAAHOS – Angle Hose Valve.....	D14-15
VABALL – Ball Valve.....	D14-15
VABFLY – Butterfly Valve	D14-15
VACWR – Condenser Water	
Regulating Valve	D14-15
VADISC – Diaphragm Valve	D14-15
VAEMTR – Valve Actuator Electric	
Motor	D14-15
VAESOL – Valve Actuator Electric	
Solenoid	D14-15
VAFLSC – Float Valve	D14-15
VAGAMC – Air Motor Controlled	
Gate Valve	D14-16

VAGLAM – Air Motor Controlled Globe Valve	D14-16
VAGLE – Angle Globe Valve	D14-16
VAGLSE – Globe Valve	D14-16
VAGSE – Angle Gate Valve	D14-16
VAGSP – Angle Gate Valve	D14-16
VAGTSE – Gate Valve	D14-16
VAHASC – Hose Angle Valve	D14-16
VAHGLS – Hose Globe Valve	D14-16
VAHGSC – Hose Gate Valve	D14-17
VALSSC – Lock Shield Valve	D14-17
VAMAGS – Magnetic Stop Valve....	D14-17
VAMNNS – Valve Actuator Manual Nonrising Stem	D14-17
VAMOGS – Motor Operated Gate Valve	D14-17
VAMOLS – Motor Operated Globe Valve	D14-17
VAMOSY – Valve Actuator Manual Outside Stem & Yoke	D14-17
VANEED – Needle Valve	D14-17
VAPLUG – Plug Valve	D14-17
VAPMTD – Valve Actuator Pneumatic Motor Diaphragm	D14-18
VAPRED – Pressure Reducing Valve	D14-18
VAPRRD – Pressure Reducing Valve	D14-18
VAQOSC – Quick Opening Valve....	D14-18
VARELF – Relief or Safety Valve....	D14-18
VASCE – Angle Globe Valve	D14-18
VASCP – Angle Globe Valve	D14-18
VASFSC – Safety Valve	D14-18
VASGCH – Swing Gate Check Valve	D14-18
VASNAP – Snap Action Valve	D14-19
VASOLN – Solenoid Valve	D14-19
VASPCH – Spring Check Valve	D14-19
VASTSC – Gate Valve	D14-19
VASWSC – Straight Way Check Valve	D14-19
VATPR – Temperature Pressure Relief Valve	D14-19

Electrical

Symbols

1DIR – Direction Arrow	D15-3
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2DIR – Double Direction Arrow	D15-3
2WAYMC – 2-Way Radio Mic.	D15-3
ACCBIO – Biometric Access Control.	D15-3
ACLLEL – Elevated Approach Lightbar	D15-3
ACLLSF – Semiflush Approach Lightbar	D15-3
AERROD – Aerial Rod	D15-3
AFBCN – Airfield Beacon	D15-3
ANNUN – Annunciator	D15-3
ANNUNT – Local Control Annunciation Unit	D15-4
ARREST – Lightning Arrestor	D15-4
AUDIO – Audio Device	D15-4
BARMKR – Barrier Marker	D15-4
BATTERY – Battery	D15-4
BEAM – Bi-Static Beam Sensor	D15-4
BELL – Bell	D15-4
BIORDR – Biometrics Access Ctrl.	D15-4
BUTTON – Push Button	D15-4
BUZZER – Buzzer	D15-5
CAMFXD – Camera	D15-5
CAMPTZ – Camera w/P/T/Zoom	D15-5
CAPCTR – Capacitor	D15-5
CBDOUT – Drawout Circuit Breaker .	D15-5
CBMCAS – Molded Case Circuit Breaker	D15-5
CELLTX – Cellular Transmitter	D15-5
CHIME – Chime	D15-5
CKTID – Circuit ID Symbol	D15-5
CLOCKW – Clock Outlet, Wall Mounted	D15-6
CMANH – Communication Manhole	D15-6
CMPANL – Communication Panel	D15-6
CPLTM – Circuit Line Terminator	D15-6
CPREC2 – Cathodic Protection Rectifier	D15-6
CPSAN – Cathodic Protection Sacrificial Anode	D15-6
CPTEST – Cathodic Protection Test Station	D15-6
CPU – Central Processing Unit	D15-6
CRDRDR – Card Access Reader	D15-6
CTRLPL – Control Panel	D15-7
DBID – Ductbank ID Symbol	D15-7
DOROPN – Electric Door Opener	D15-7
DORREV – Revolving Door	D15-7

DSTMKR – Runway Distance
 Marker.....D15-7
 DTHL – Displaced Threshold Light....D15-7
 DXFMR – Transformer, Plan View D15-7
 EHANDH – Electrical Handhole D15-7
 ELBP1L – 1 Lamp Emergency Light..D15-7
 ELBP2L – 2 Lamp Emergency Light..D15-8
 ELBP3L – 3 Lamp Emergency Light..D15-8
 ELLOCK – Electronic Lock.....D15-8
 EMANH – Electrical Manhole.....D15-8
 EMETER – Electrical Meter D15-8
 EPULLB – Electrical Pullbox D15-8
 ERECPT – Emergency Receptacle.....D15-8
 EXITCM – Ceiling Mtd. Exit Light....D15-8
 EXITDV – Exit Device D15-8
 EXITLF – Exit Sign, Lighted Face D15-9
 EXITWM – Wall Mounted Exit
 Sign Light D15-9
 FAN – Ceiling Fan D15-9
 FIBMOD – Fiber Optic Module.....D15-9
 FIXSPB – Surface Pendant Battery
 Fixture.....D15-9
 FIXSPQ – Surface Pendant Battery
 Quartz Restrike D15-9
 FIXSPR – Surface Pendant Battery
 Receptacle D15-9
 FIXWM – Wall Mounted Fixture.....D15-9
 FIXWMB – Wall Mounted Battery
 Fixture.....D15-9
 FL14WB – 1 X 4 Wall Mounted Fixture
 w/Battery.....D15-10
 FL14WM – 1 X 4 Wall Mounted
 Fixture.....D15-10
 FL1X4 – 1 X 4 Light Fixture D15-10
 FL1X4B – 1 X 4 Light Fixture
 w/Battery.....D15-10
 FL1X4C – 1 X 4 Light Fixture,
 Continuous.....D15-10
 FL2X2 – 2 X 2 Light Fixture D15-10
 FL2X2B – 2 X 2 Light Fixture
 w/Battery.....D15-10
 FL2X2C – 2 X 2 Light Fixture,
 Continuous.....D15-10
 FL2X4 – 2 X 4 Light Fixture D15-10
 FL2X4B – 2 X 4 Light Fixture
 w/Battery.....D15-11
 FL2X4C – 2 X 4 Light Fixture,
 Continuous.....D15-11
 FLDPNL – Field Panel.....D15-11
 FLTN – New Floodlight.....D15-11

FLTX – Existing Floodlight.....D15-11
 FUSRAT – Fuse with Rating D15-11
 GENRTR – Generator D15-11
 GLASBR – Glass Breakage Sensor...D15-11
 GRDROD – Grounding Rod.....D15-11
 GROUND – Earth Ground D15-12
 GUYWR – Guy Wire D15-12
 HAS1H – 1 Hot Leg.....D15-12
 HAS1N – 1 Neutral Leg.....D15-12
 HAS1S – 1 Switch Leg D15-12
 HAS2H – 2 Hot Legs D15-12
 HAS2S – 2 Switch Legs.....D15-12
 HAS3HN – 3 Hot, 1 Neutral Leg D15-12
 HAS3MK – Hot/Neutral/Ground D15-12
 HAS3S – 3 Switch Legs.....D15-13
 HAS4MK – 2 Hot/Neutral/Ground ...D15-13
 HAS5MK – 3 Hot/Neutral/Ground ...D15-13
 HASGND – 1 Ground Leg.....D15-13
 HEDASW – Aerial Service Weather
 Head.....D15-13
 HLL – Hoverlane.....D15-13
 HLLL – Hoverlane Limit Light.....D15-13
 HPIL – Helipad Inset Light D15-13
 HPLEL – Elevated Helipad
 Perimeter Light D15-13
 HPPLSF – Semiflush Helipad
 Perimeter Light D15-14
 HRUN1 – Home Run D15-14
 HRUN2 – Home Run D15-14
 HRUN3 – Home Run D15-14
 INTAG – Interconnection
 w/Substation, Aboveground.....D15-14
 INTCOM – Intercom.....D15-14
 INTAG – Interconnection
 w/Substation, Underground D15-14
 JNBX – Junction Box.....D15-14
 JNBXWM – Wall Mtd. Junction BoxD15-14
 KEYBRD – Keyboard.....D15-15
 KEYN1 – Keynote Indicator.....D15-15
 KEYN2 – Keynote Indicator.....D15-15
 KEYPAD – Keypad Device D15-15
 LEADER – Leader Line.....D15-15
 LTPLN – New Light Pole D15-15
 LTPLX – Existing Light Pole D15-15
 MICROW – Outdoor Microwave
 Transmit Unit.....D15-15
 MONITR – Monitor D15-15
 MOTION – Motion Detector.....D15-16
 MOTR1P – Motor, Single Phase.....D15-16
 MOTR3P – Motor, Three Phase.....D15-16

OBSTRL – Obstruction Light D15-16
 PAPI – PAPI Light Unit D15-16
 PBFMC – Flush Mounted
 Panelboard Cabinet D15-16
 PBSMC – Surface Mounted
 Panelboard/Cabinet D15-16
 PHANDH – Primary Elec Handhole..D15-16
 PHOTO – Photoelectric Relay D15-16
 PHOTOV – Photovoltaic Power D15-17
 POLEAR – Aerial Pole w/Guying D15-17
 POLEID – Pole Ident. Symbol D15-17
 PRINTR – Printer D15-17
 PSHST1 – One Pushbutton Station ...D15-17
 PSHST2 – Two Pushbutton Station ..D15-17
 PSHST3 – Three Pushbutton Station D15-17
 PWRDVC – Power System Device...D15-17
 PWRSPY – Power Supply D15-17
 RCNC – Normally Closed Relay
 Contact D15-18
 RCNO – Normally Open Relay
 Contact D15-18
 RDRKPD – Card Reader w/Keypad .D15-18
 RECDER – Recorder.....D15-18
 RECDFM – Floor Outlet, Double
 Flush Mounted D15-18
 RECDSM – Double Surf Mount
 Floor Outlet.....D15-18
 RECDUP – Duplex Receptacle D15-18
 RECLOS – Recloser Aerial
 Automatic.....D15-18
 RECPT2 – Special Receptacle D15-18
 RECQUA – Quadraplex Receptacle..D15-19
 RECRAN – Receptacle Range D15-19
 RECSDP – Switched Duplex
 Receptacle D15-19
 RECSFM – Floor Outlet, Single
 Flush Mounted D15-19
 RECSIN – Single Receptacle D15-19
 RECSNS – Single Receptacle
 with Switch D15-19
 RECSPR – Special Purpose
 Receptacle D15-19
 RECSSM – Single Surf Mount
 Floor Outlet.....D15-19
 REIL – Reil Light Unit.....D15-19
 RELAY – Relay. D15-20
 RELYOP – Relay OP Coil D15-20
 RESHTR – Elec. Resistance Heater ..D15-20
 RWCLL – Runway Center Light D15-20

RWEL – Runway End Light D15-20
 RWLEL – Elevated Runway Edge
 Light.....D15-20
 RWLSF – Semiflush Runway Edge
 Light.....D15-20
 SCRDEV – Screening Device. D15-20
 SECSA – Security Screen w/Alarm. .D15-20
 SECSW – Security Window Screen..D15-21
 SECTAA – Sectionalizer Aerial
 Auto D15-21
 SENGV – Generic Volumetric
 Sensor.....D15-21
 SENULS – Ultrasonic Sensor. D15-21
 SFL – Sequenced Flasher Light D15-21
 SHREDR – Document Destroyer. D15-21
 SLLN – New Streetlight.....D15-21
 SLLX – Existing Streetlight. D15-21
 SLREG – Constant Current
 Transformer.....D15-21
 SOUNDS – Sound System D15-22
 STP14 – 1 X 4 Strip, Surface Pendant
 Recessed.....D15-22
 STP14B – 1 X 4 Strip, Surface Pendant
 Recessed w/Battery.....D15-22
 STP18 – 1 X 8 Strip, Surface Pendant
 Recessed.....D15-22
 STP18B – 1 X 8 Strip, Surface Pendant
 Recessed w/Battery.....D15-22
 SUBSTA – Substation.....D15-22
 SW3ABC – 3 Three Way Switches...D15-22
 SWABC – Three Single Switches....D15-22
 SWFLNC – Normally Closed
 Float Switch D15-22
 SWFLNO – Normally Open
 Float Switch D15-23
 SWFNC – Normally Closed
 Flow Switch D15-23
 SWFNO – Normally Open Flow
 Switch D15-23
 SWFONC – Normally Closed
 Foot-Operated Switch D15-23
 SWI2WY – Double Pole Switch D15-23
 SWI3WY – Three Way Switch D15-23
 SWI4WY – Four Way Switch.....D15-23
 SWICB – Circuit Breaker.....D15-23
 SWICHA – Auto. Monitor. Switch. ..D15-23
 SWICHM – Man. Operated Switch...D15-24
 SWIDM1 – Dimmer D15-24
 SWIDM2 – Dimmer Switch.....D15-24

SWIDSF – Disconnect Switch,
Fused.....D15-24
SWIDSU – Disconnect Switch,
Unfused.....D15-24
SWIDUR – Duress Switch. D15-24
SWIFUS – Fused Switch.....D15-24
SWIKEY – Key-Operated Switch.....D15-24
SWILVM – Low Voltage
Master Switch D15-24
SWIPLT – Switch w/Pilot Light D15-25
SWITCH – Single Pole Switch D15-25
SWITIM – Timer Operated Switch...D15-25
SWLAMP – Lamp Holder Pole
Switch D15-25
SWLNC – Normally Closed
Limit Switch D15-25
SWLNO – Normally Open
Limit Switch D15-25
SWMOTR – Motor Switch D15-25
SWMULT – Multiposition Switch....D15-25
SWPCM – Ceiling Mounted
Pull Switch.....D15-25
SWPCOI – Pressure Switch-Close
on Increase D15-26
SWPOOI – Pressure Switch-Open
on Increase D15-26
SWSBRK – Single Break Switch.....D15-26
SWTANC – Normally Closed Temp
Activated Switch.....D15-26
SWTANO – Normally Open Temp
Activated Switch.....D15-26
SWTDNC – Normally Closed Time
Delay Switch.....D15-26
SWTDNO – Normally Open Time
Delay Switch.....D15-26
TARDR – Card Reader w/Time/Att..D15-26
TDZL – Touchdown Zone Light.....D15-26
TELEDL – Telephone Dialer. D15-27
THINGE – Power Transfer Hinge.....D15-27
THL – Threshold Light D15-27
TMANH – Telephone Manhole. D15-27
TOWER – Transmission Tower.....D15-27
TRANSF – Transformer, Current.....D15-27
TRFARM – Traffic Arm. D15-27
TRFCLP – Vehicle Loop Detector....D15-27
TRFSIG – Traffic Signal Mast Arm..D15-27
TRNSTL – Turnstile. D15-28
TSCTRL – Traffic Signal Controller D15-28
TSHEAD – Traffic Signal Head.....D15-28

TSPHS – Traffic Signal Phase #,
Thru.....D15-28
TSPHT – Traffic Signal Phase #,
Turn.....D15-28
TSTAT – Thermostat D15-28
TSVLDT – Traffic Signal Vehicle
Loop Detector D15-28
TVOUT – Television Outlet.....D15-28
TWCLL – Taxiway Centerline Light D15-28
TWELEL – Elevated Taxiway End
Light.....D15-29
TWELSF – Semiflush Taxiway End
Light.....D15-29
TWGSGN – Taxiway Guidance SignD15-29
TWLEL – Elevated Taxiway Edge
Light.....D15-29
TWLSF – Semiflush Taxiway Edge
Light.....D15-29
UTPLN – New Pole D15-29
UTPLX – Existing Pole.....D15-29
VIDCR – Camera w/Card Reader. D15-29
VIDCTL – Video Control Keyboard.D15-29
VIDIC – Video Intercom.....D15-30
VIDICM – Video Intercom Master. ..D15-30
VIDKPD – Camera w/Keypad. D15-30
VIDMTN – Video Motion Detector..D15-30
VIDMUX – Video Multiplexer. D15-30
WYECON – XFMR Wye
Connection.....D15-30
WYEXGC – XFMR Grounded
Connection D15-30
XFRPLN – New XFMR Pole.....D15-30
XFRPLX – Existing XFMR Pole D15-30
XFRPMN – New XFMR Pad.....D15-31
XFRPMX – Existing XFMR Pad.....D15-31

Telecommunications

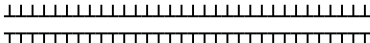
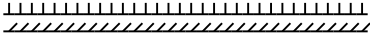
Symbols

GRDROD – Grounding Rod D16-3
RECDC – Data Communication Wall
Receptacle.....D16-3
RECDCF – Data Communication Floor
Receptacle.....D16-3
RECTDF – Telephone/Data Floor
Receptacle.....D16-3

RECTDW – Telephone/Data Wall	
Receptacle	D16-3
RECTEF – Telephone Floor	
Receptacle	D16-3
RECTEL – Telephone Wall Recep.	D16-3
SIPR – SIPRNet Receptacle.....	D16-3
SIPRF – SIPRNet Floor Receptacle.	D16-3
TBOOTH – Telephone Booth	D16-4

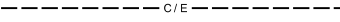
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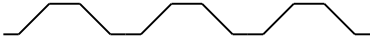
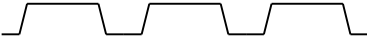
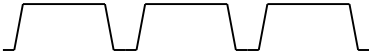
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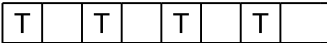
		
Name: 16THLN 16TH SECTION LINE Element type: Line	Name: ACIDWS ACID WASTE Element type: Line	Name: AIRRLF AIR RELIEF Element type: Line
		
Name: BANKLF BANK LEFT Element type: Line	Name: BANKRT BANK RIGHT Element type: Line	Name: BARDIT DITCH BARRIER Element type: Line
		
Name: BARDTB DITCH AND BEAM BARRIER Element type: Line	Name: BARGEN GENERIC SECURITY BARRIER Element type: Line	Name: BARMAS SECURITY MASONRY BARRIER Element type: Line

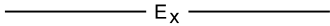
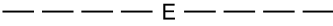
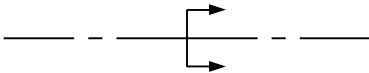
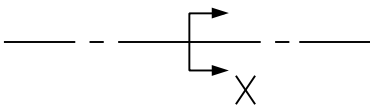
		
Name: BERM BERM Element type: Line	Name: BOILBD BOILER BLOW DOWN Element type: Line	Name: BRINER BRINE RETURN Element type: Line
		
Name: BRINES BRINE SUPPLY Element type: Line	Name: BUSWAY BUSWAY Element type: Line	Name: CABLTV CABLE TV Element type: Line
		
Name: CCTV CLOSED CIRCUIT TV Element type: Line	Name: CDRNAF CONDENSATE DRAIN Element type: Line	Name: CLDWTR POTABLE COLD WATER Element type: Line

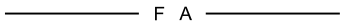
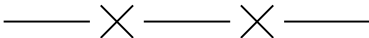
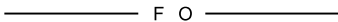
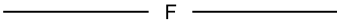
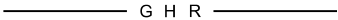
		
Name: CMP12 CMP 12IN DIAMETER Element type: Line	Name: CMP127 CMP 127MMX25MM OR 5IN X 1IN Element type: Line	Name: CMP152 CMP 152MMX51MM OR 6IN X 2IN Element type: Line
		
Name: CMP38 CMP38MMX6MM OR 1.5INX.25IN Element type: Line	Name: CMP51 CMP51MMX13MM OR 2IN X .5IN Element type: Line	Name: CMP68 CMP68MMX13MM OR 2.7INX.5IN Element type: Line
		
Name: CMP76 CMP76MMX25MM OR 3IN X 1IN Element type: Line	Name: CMPAIR COMPRESSED AIR Element type: Line	Name: CMPU12 CMPU 12IN DIAMETER Element type: Line

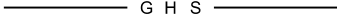
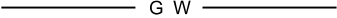
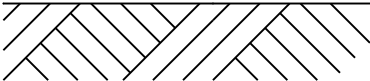
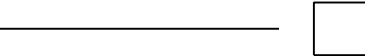
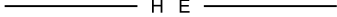
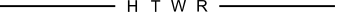
		
Name: COMARN NEW COMMUNICATION AERIAL Element type: Line	Name: COMARX EXIST COMMUNICATION AERIAL Element type: Line	Name: COMUGN NEW COMMUNICATION UNDERGROUND Element type: Line
		
Name: COMUGX EXIST COMMUNICATION UNDERGROUND Element type: Line	Name: CONDFL FLEXIBLE CONDUIT Element type: Line	Name: CONDP PUMPED CONDENSATE Element type: Line
		
Name: CONDWR CONDENSER WATER RETURN Element type: Line	Name: CONDWS CONDENSER WATER SUPPLY Element type: Line	Name: CONEMT CONSTRUCTION EASEMENT Element type: Line

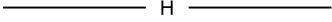
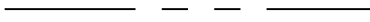
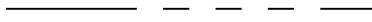
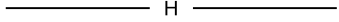
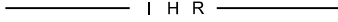
		
Name: CONLMT CONSTRUCTION LIMIT Element type: Line	Name: CULVRT CULVERT PIPE Element type: Line	Name: CWR CHILLED WATER RETURN Element type: Line
		
Name: CWS CHILLED WATER SUPPLY Element type: Line	Name: DCAGN DIRECT CURRENT ABOVEGROUND Element type: Line	Name: DCUGN DIRECT CURRENT UNDERGROUND Element type: Line
		
Name: DECKCR CORRUGATED METAL DECK Element type: Line	Name: DECKFL METAL DECK FLOOR Element type: Line	Name: DECKRF METAL DECK ROOF Element type: Line

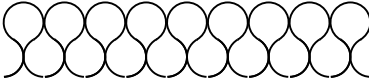
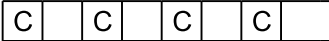
		
Name: DEMO DEMOLITION LINE (NCS) Element type: Line	Name: DEMOLN DEMOLITION LINE (AEC) Element type: Line	Name: DIOWTR DEIONIZED WATER Element type: Line
		
Name: DITCH DITCH LINE Element type: Line	Name: DSTWTR DISTILLED WATER Element type: Line	Name: DTR DUAL TEMPERATURE RETURN Element type: Line
		
Name: DTS DUAL TEMPERATURE SUPPLY Element type: Line	Name: DUCTTR TROLLEY DUCT Element type: Line	Name: EPARN NEW ELEC PRIMARY AERIAL Element type: Line

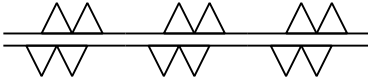
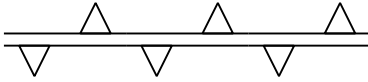
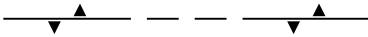
		
Name: EPARX EXIST ELEC PRIMARY AERIAL Element type: Line	Name: EPUGN NEW ELEC PRIMARY UNDERGROUND Element type: Line	Name: EPUGX EXIST ELEC PRIMARY UNDERGROUND Element type: Line
		
Name: ESARN NEW ELEC SECONDARY AERIAL Element type: Line	Name: ESARX EXIST ELEC SECONDARY AERIAL Element type: Line	Name: ESUGN NEW ELEC SECONDARY UNDERGROUND Element type: Line
		
Name: ESUGX EXIST ELEC SECONDARY UNDERGROUND Element type: Line	Name: EUDUCN NEW UNDERGROUND DUCT BANK Element type: Line	Name: EUDUCX EXIST UNDERGROUND DUCT BANK Element type: Line

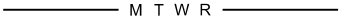
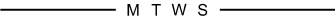
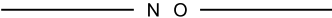
		
Name: FALARM FIRE ALARM Element type: Line	Name: FENCE FENCE Element type: Line	Name: FIBOPT FIBER OPTICS Element type: Line
		
Name: FILL FILL LINE Element type: Line	Name: FIRE FIRE PROTECTION WATER SUPPLY Element type: Line	Name: FUELOR FUEL OIL RETURN Element type: Line
		
Name: FUELOS FUEL OIL SUPPLY Element type: Line	Name: FUELOV FUEL OIL TANK VENT Element type: Line	Name: GHR GLYCOL HEATING RETURN Element type: Line

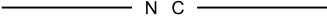
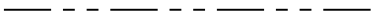
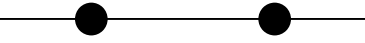
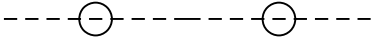
		
Name: GHS GLYCOL HEATING SUPPLY Element type: Line	Name: GOVTKL GOVERNMENT TAKING LINE Element type: Line	Name: GRAY GRAYWATER Element type: Line
		
Name: GROUND GROUND Element type: Line	Name: GUARD GUARD RAIL Element type: Line	Name: HAZMAT HAZARDOUS MATERIALS Element type: Line
		
Name: HELIUM HELIUM Element type: Line	Name: HPCNDR HIGH PRESSURE CONDENSATE Element type: Line	Name: HTHWR HIGH TEMP HOT WATER RETURN Element type: Line

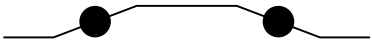
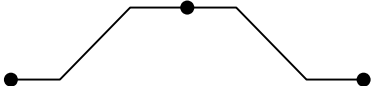
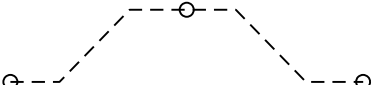
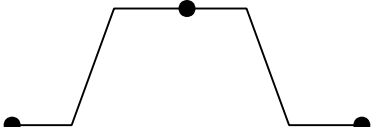
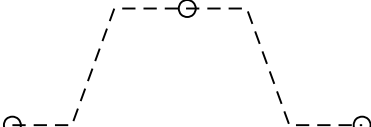
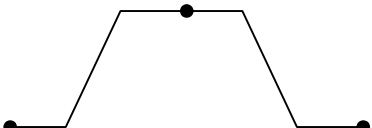
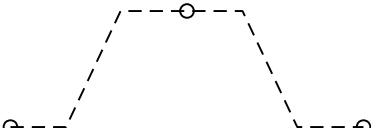
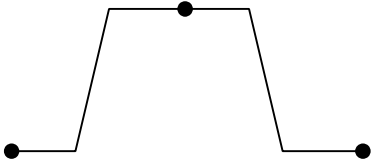
		
Name: HTHWS HIGH TEMP HOT WATER SUPPLY Element type: Line	Name: HUMID HUMIDIFICATION LINE Element type: Line	Name: HWR LOW TEMP HOT WATER RETURN Element type: Line
		
Name: HWS LOW TEMP HOT WATER SUPPLY Element type: Line	Name: HWTR POTABLE HOT WATER Element type: Line	Name: HWTRR POTABLE HOT WATER RETURN Element type: Line
		
Name: HYDRGN HYDROGEN Element type: Line	Name: ICWTR INDUSTRIAL COLD WATER Element type: Line	Name: IHWTRR INDUSTRIAL HOT WATER RETURN Element type: Line

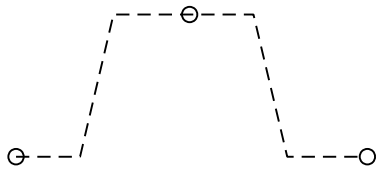
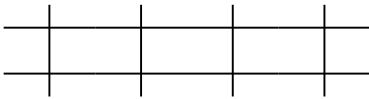
		
Name: IHWTRS INDUSTRIAL HOT WATER SUPPLY Element type: Line	Name: INBATT LOOSE FILL BATT INSULATION Element type: Line	Name: INDDRN INDIRECT DRAIN Element type: Line
		
Name: INDXDC INDEX DEPTH CONTOUR Element type: Line	Name: INTCOM INTERCOM Element type: Line	Name: INTRLK INTERLOCK SLOPE PROTECTION Element type: Line
		
Name: IWASTE INDUSTRIAL WASTE Element type: Line	Name: LADDER CABLE LADDER Element type: Line	Name: LAWNSP LAWN SPRINKLER SUPPLY Element type: Line

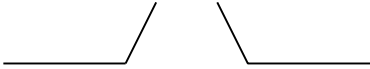
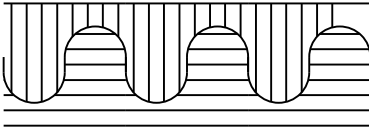
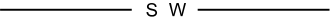
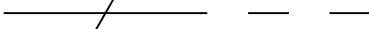
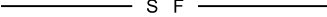
		
Name: LEVEBO OTHER EXISTING LEVEE Element type: Line	Name: LEVEE LEVEE NEW Element type: Line	Name: LEVEEX EXISTING LEVEE Element type: Line
		
Name: LEVERP LEVEE TO BE REPAIRED Element type: Line	Name: LIQNIT LIQUID NITROGEN Element type: Line	Name: LIQOXY LIQUID OXYGEN Element type: Line
		
Name: LIQPET LIQUID PETROLEUM GAS Element type: Line	Name: LPCNDR LOW PRESSURE CONDENSATE Element type: Line	Name: MAKEUP MAKEUP WATER Element type: Line

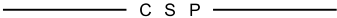
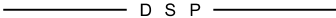
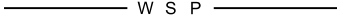
		
Name: MANSUC SUCTION MAIN Element type: Line	Name: MINRDC MINOR DEPTH CONTOUR Element type: Line	Name: MPCNDR MEDIUM PRESSURE CONDENSATE Element type: Line
		
Name: MTHWR MEDIUM TEMP HOT WATER RETURN Element type: Line	Name: MTHWS MEDIUM TEMP HOT WATER SUPPLY Element type: Line	Name: NITOXI NITROUS OXIDE Element type: Line
		
Name: NITROG NITROGEN Element type: Line	Name: NONPOT NONPOTABLE WATER Element type: Line	Name: NTGASN NEW NATURAL GAS PIPING Element type: Line

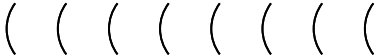
		
Name: NTGASX EXIST NATURAL GAS PIPING Element type: Line	Name: NURSE NURSE CALL Element type: Line	Name: OXYGEN OXYGEN Element type: Line
		
Name: PHONE TELEPHONE Element type: Line	Name: PNTUBE PNEUMATIC TUBE RUNS Element type: Line	Name: PROJBL PROJECT BOUNDARY LINE Element type: Line
		
Name: PROPL PROPERTY LINE Element type: Line	Name: PS31 PS31 SHEET PILE Element type: Line	Name: PS31H PS31 SHEET PILE HIDDEN Element type: Line

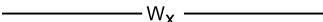
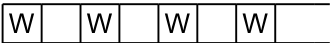
		
Name: PSA23 PSA23 SHEET PILE Element type: Line	Name: PSA23H PSA23 SHEET PILE HIDDEN Element type: Line	Name: PZ22 PZ22 SHEET PILE Element type: Line
		
Name: PZ22H PZ22 SHEET PILE HIDDEN Element type: Line	Name: PZ27 PZ27 SHEET PILE Element type: Line	Name: PZ27H PZ27 SHEET PILE HIDDEN Element type: Line
		
Name: PZ35 PZ35 SHEET PILE Element type: Line	Name: PZ35H PZ35 SHEET PILE HIDDEN Element type: Line	Name: PZ40 PZ40 SHEET PILE Element type: Line

		
Name: PZ40H PZ40 SHEET PILE HIDDEN Element type: Line	Name: RAILRD RAILROAD Element type: Line	Name: REBR12 REBAR AT 12IN Element type: Line
		
Name: REBR18 REBAR AT 18IN Element type: Line	Name: REBR6 REBAR AT 6IN Element type: Line	Name: REBR9 REBAR AT 9IN Element type: Line
		
Name: REFRD REFRIGERANT DISCHARGE Element type: Line	Name: REFRL REFRIGERANT LIQUID Element type: Line	Name: REFRS REFRIGERANT SUCTION Element type: Line

		
Name: RIPPLN RIPRAP PLAN VIEW Element type: Line	Name: ROCK ROCK Element type: Line	Name: ROOFDN ROOF DRAIN Element type: Line
		
Name: RTOFWY RIGHT OF WAY Element type: Line	Name: SFCWTR SOFT COLD WATER Element type: Line	Name: SHORLN SHORE LINE Element type: Line
		
Name: SHWTRR SANITIZING HOT WATER RETURN Element type: Line	Name: SHWTRS SANITIZING HOT WATER SUPPLY Element type: Line	Name: SILT SILT FENCE Element type: Line

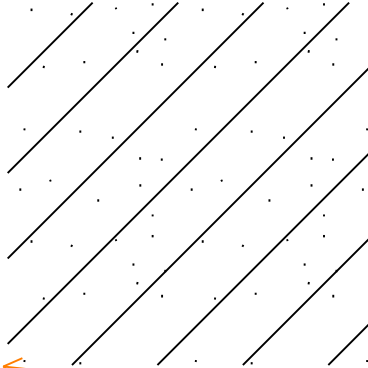
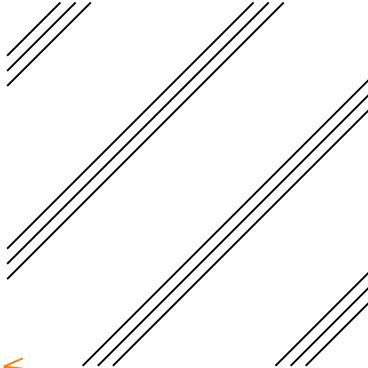
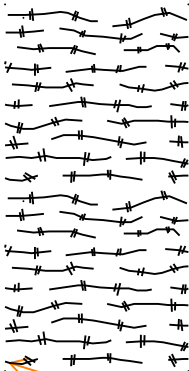
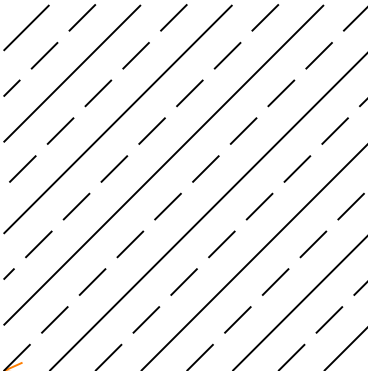
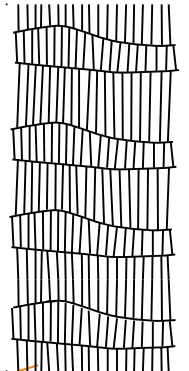
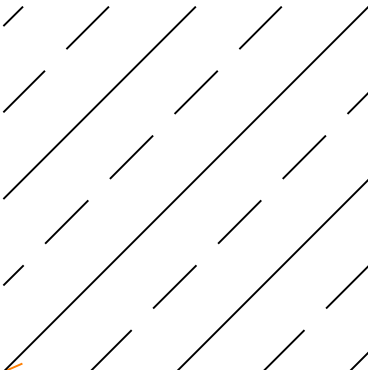
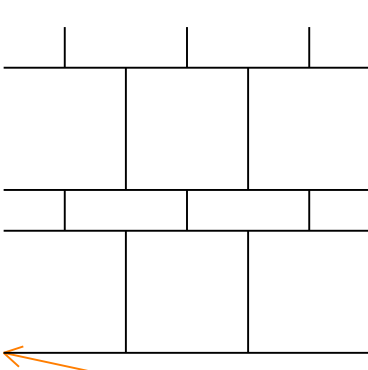
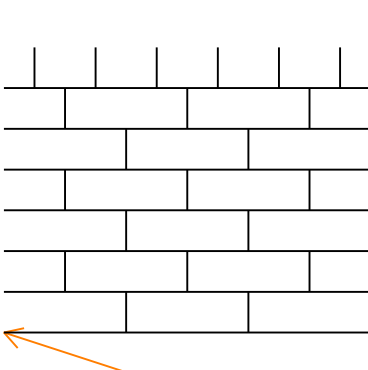
		
Name: SPRINK MAIN SUPPLY SPRINKLER Element type: Line	Name: SSILT SUPER SILT FENCE Element type: Line	Name: SSWAF NEW SANITARY SEWER Element type: Line
		
Name: SSWAFX EXIST SANITARY SEWER Element type: Line	Name: STDCOM COMBINATION STANDPIPE Element type: Line	Name: STDDRY DRY STANDPIPE Element type: Line
		
Name: STDWET WET STANDPIPE Element type: Line	Name: STEAMH HIGH PRESSURE STEAM Element type: Line	Name: STEAML LOW PRESSURE STEAM Element type: Line

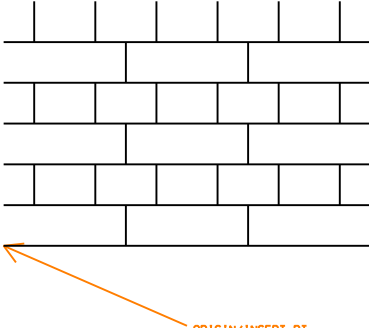
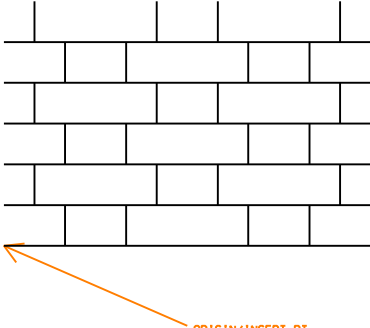
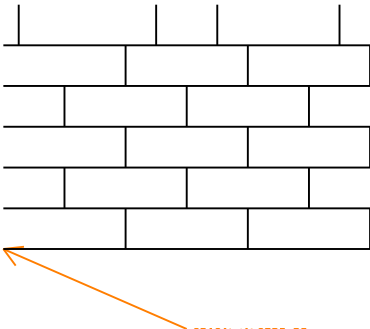
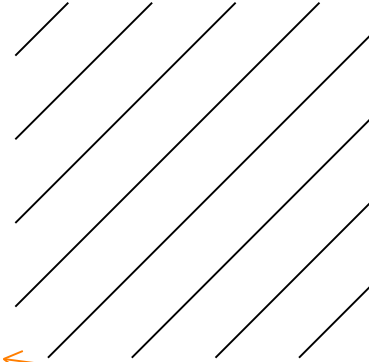
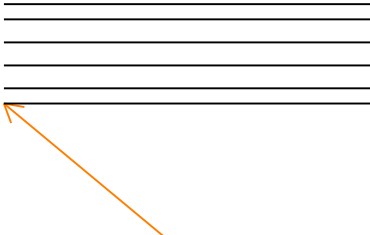
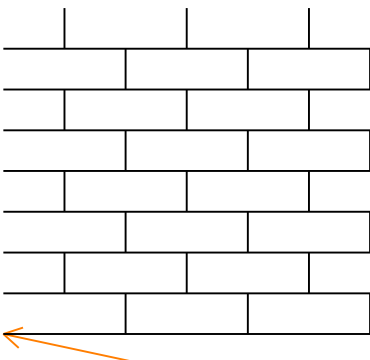
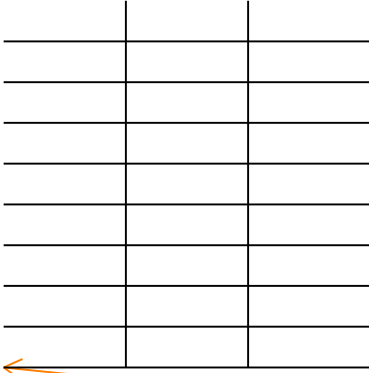
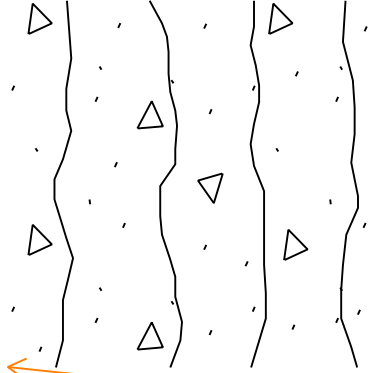
		
Name: STEAMM MEDIUM PRESSURE STEAM Element type: Line	Name: STRAF NEW STORM DRAIN Element type: Line	Name: STRAFX EXIST STORM DRAIN Element type: Line
		
Name: TREEL TREE LINE Element type: Line	Name: TUVANE TURNING VANES Element type: Line	Name: VACAIR VACUUM AIR Element type: Line
		
Name: VACPD VACUUM PUMP DISCHARGE Element type: Line	Name: VENT VENT Element type: Line	Name: VENTWS VENT AND WASTE COMBINATION Element type: Line

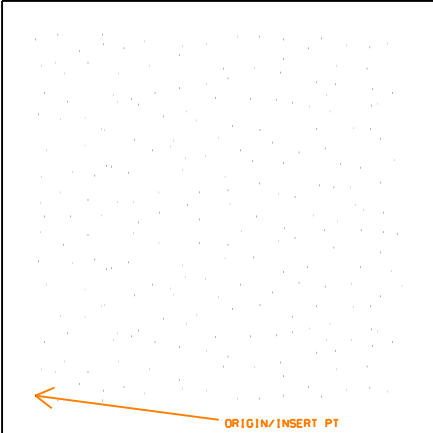
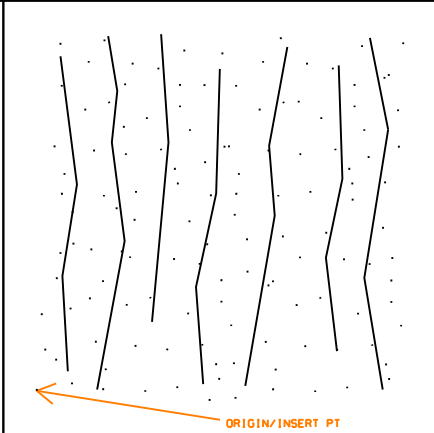
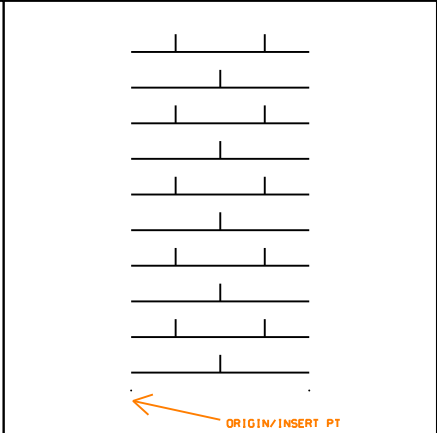
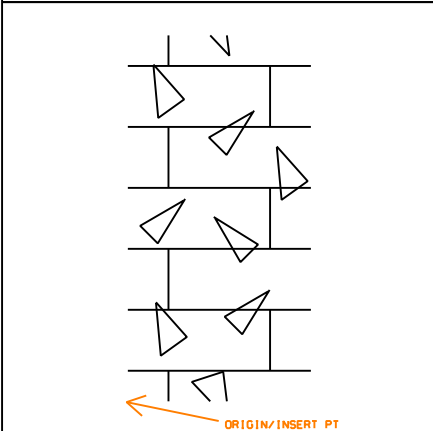
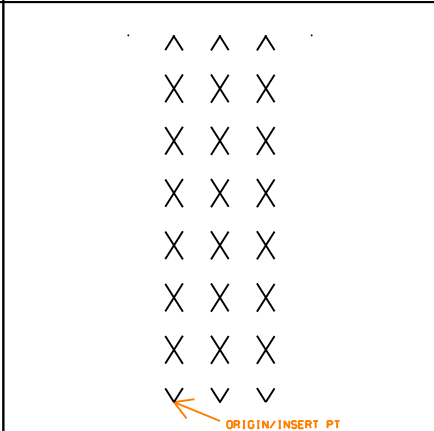
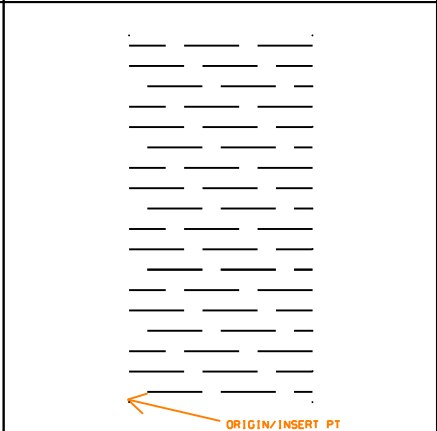
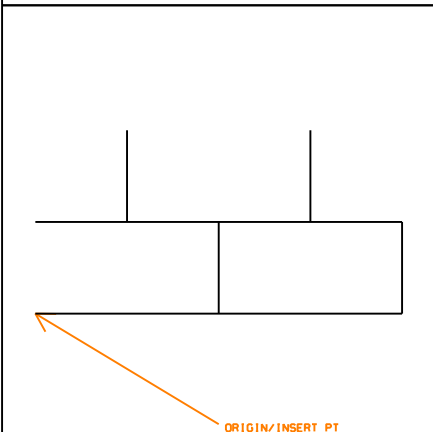
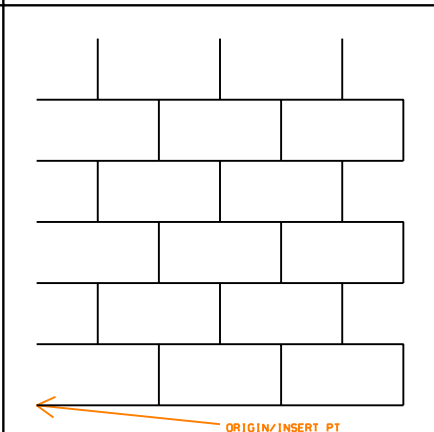
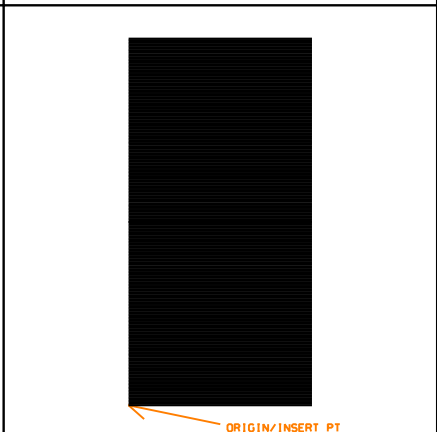
		
Name: WATERL NEW WATER LINE Element type: Line	Name: WATR EXIST WATER LINE Element type: Line	Name: WIREWY WIREWAY Element type: Line
		
Name: WWFBRC WELDED WIRE FABRIC Element type: Line		

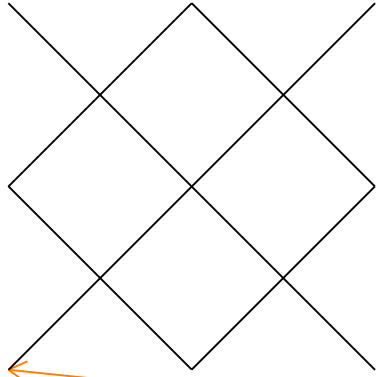
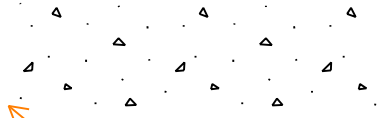
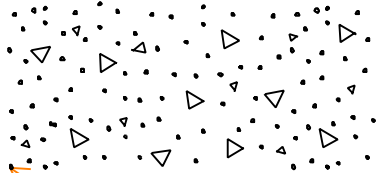
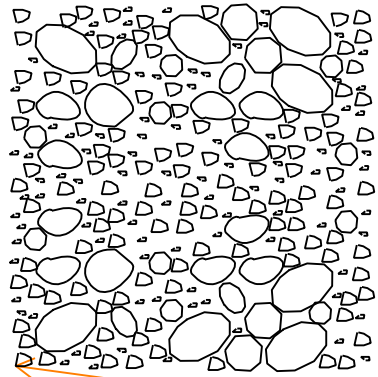
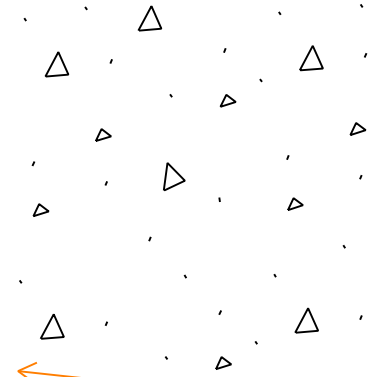
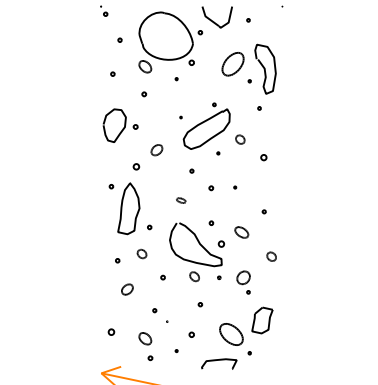
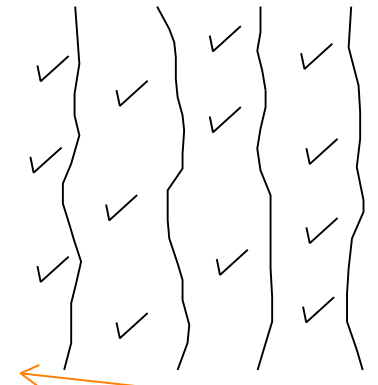
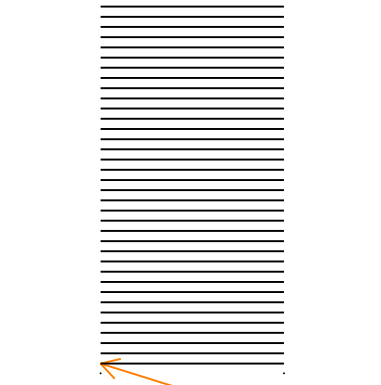
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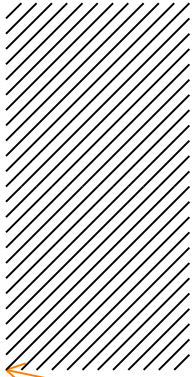
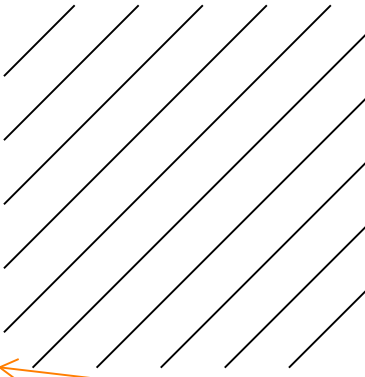
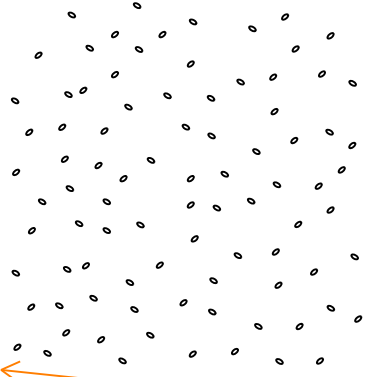
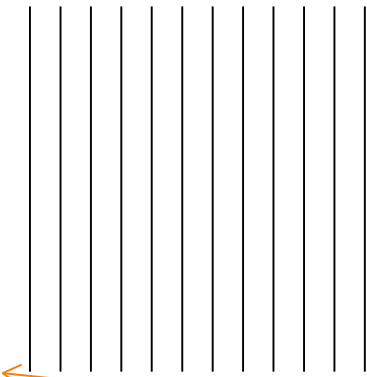
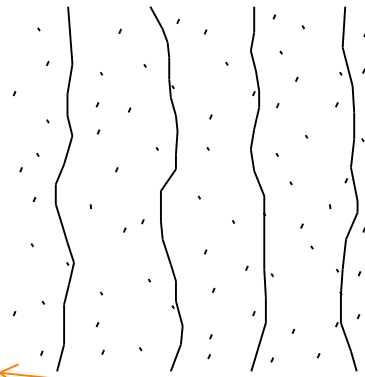
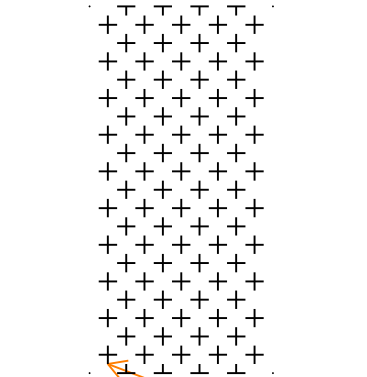
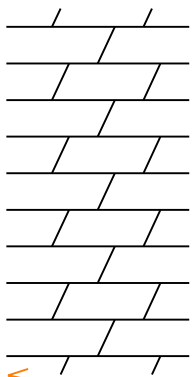
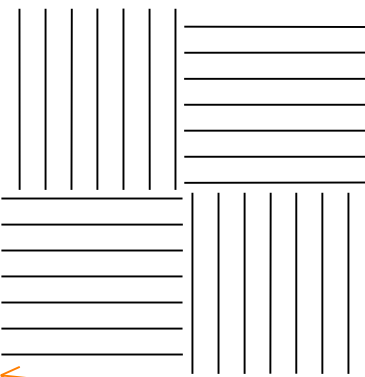
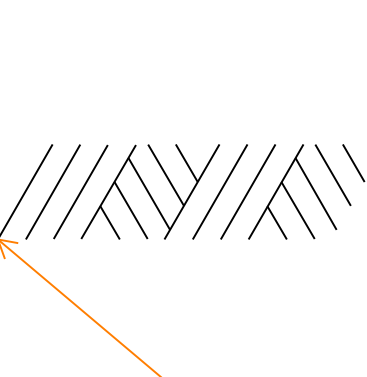
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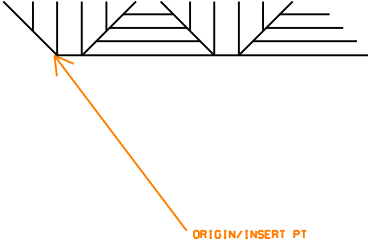
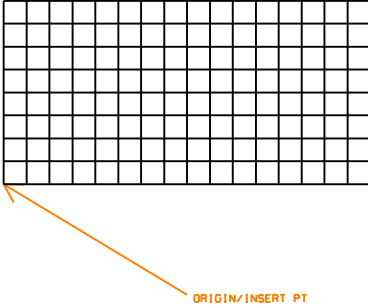
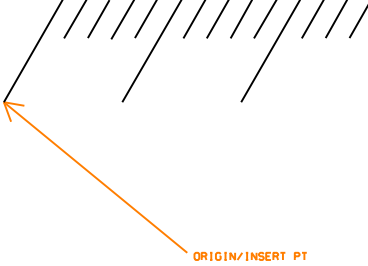
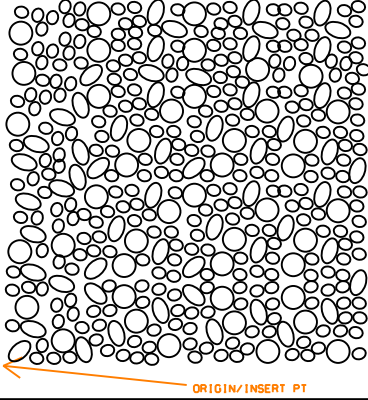
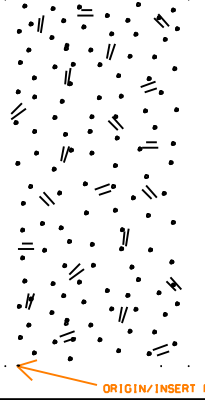
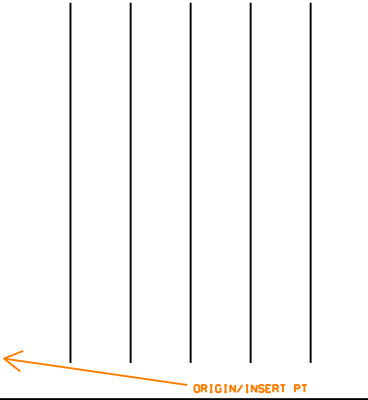
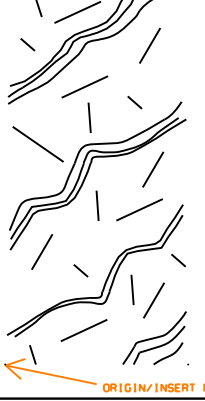
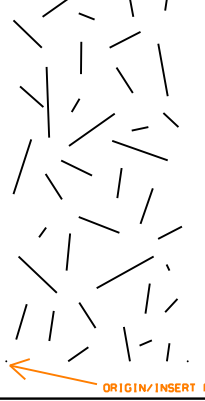
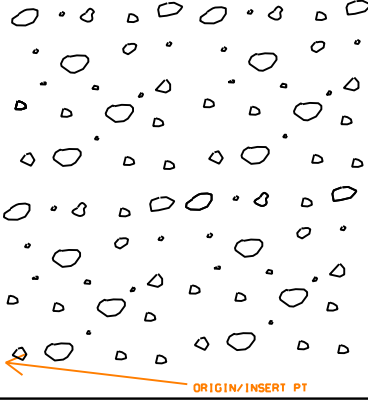
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Name: ADOBE MSNRY ADOBE RAMMED EARTHPTN Element type: Pattern	Name: AGGLOM AGGLOMERATE FLOW BRECCIA Element type: Pattern	Name: ALUMIN ALUMINUM PATTERN Element type: Pattern
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: ANDES ANDESITE Element type: Pattern	Name: ASHLER STONE ASHLER PATTERN Element type: Pattern	Name: BASALT BASALT Element type: Pattern
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: BRASS BRONZE BRASS PATTERN Element type: Pattern	Name: BRBLCO COURSED BRICK BLK PTN Element type: Pattern	Name: BRCOBD COMMON BOND BRICK PTN Element type: Pattern

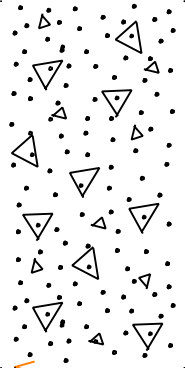
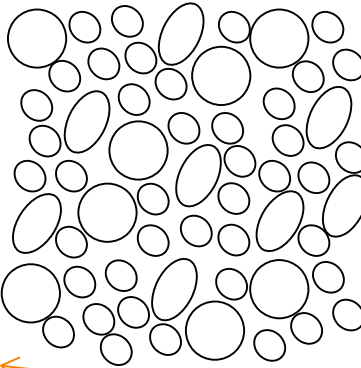
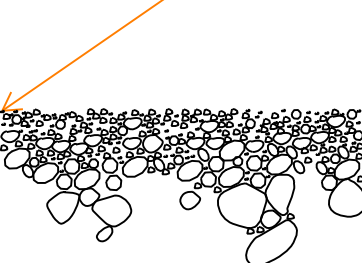
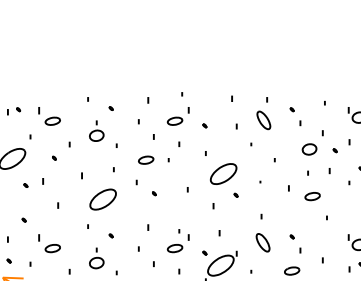
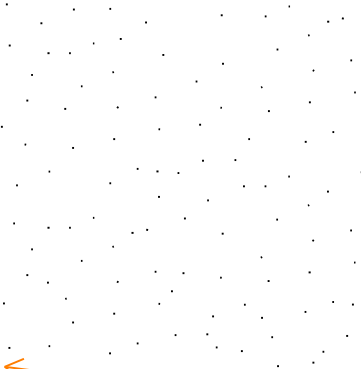
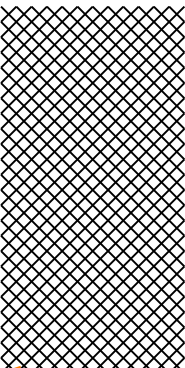
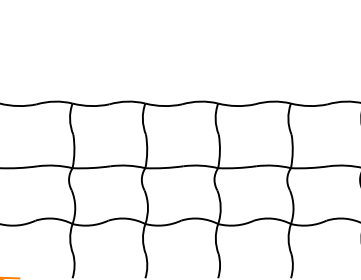
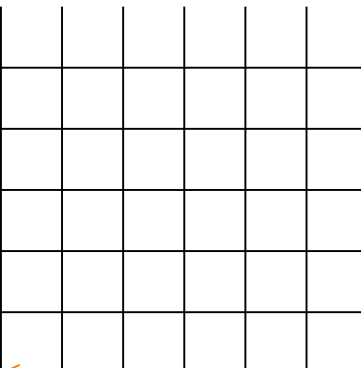
		
Name: BRECCA BRECCIA Element type: Pattern	Name: BRENBD ENGLISH BOND BRICK PTN Element type: Pattern	Name: BRFLBD FLEMISH BOND BRICK PTN Element type: Pattern
		
Name: BRFLCB FLEMISH COM BOND PTN Element type: Pattern	Name: BRKCF COMMON FACE BRICK PTN Element type: Pattern	Name: BRKELE BRICK ELEVATION PTN Element type: Pattern
		
Name: BRRNBD BRICK RUNNING BOND PTN Element type: Pattern	Name: BRSTBD BRICK STACK BOND PATTERN Element type: Pattern	Name: CCBSS CAST CONC BLK SM SCALE PTN Element type: Pattern

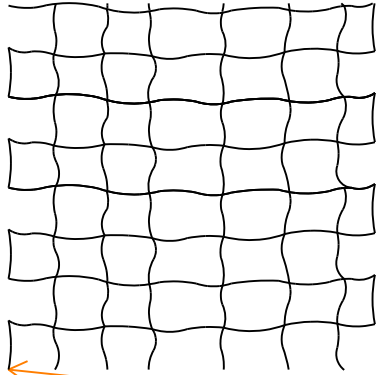
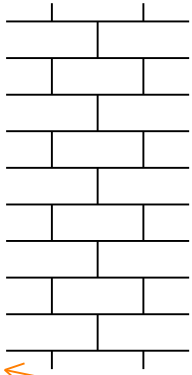
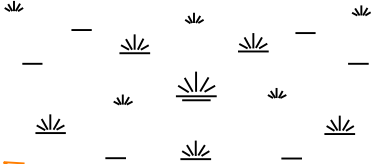
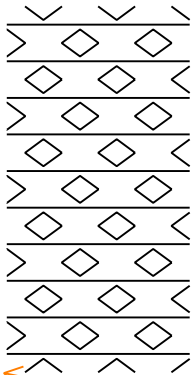
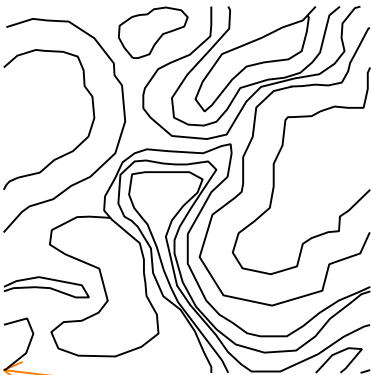
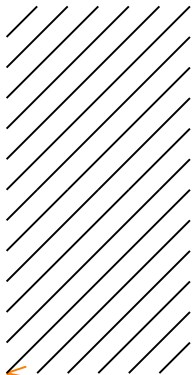
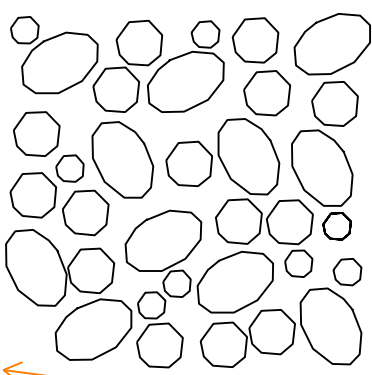
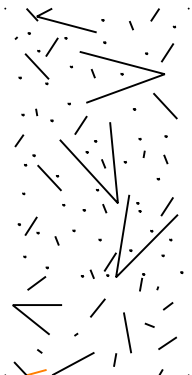
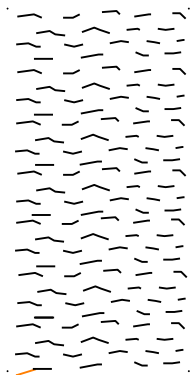
		
Name: CCELEV CONC CEMENT ELEV PTN Element type: Pattern	Name: CDTOP CEMENTITIOUSDECK TOPPINGPTN Element type: Pattern	Name: CHALK CHALK OR MARL Element type: Pattern
		
Name: CHERT CHERT Element type: Pattern	Name: CLAYST CLAYSTONE OR SILTSTONE Element type: Pattern	Name: CMPSHL COMPACTION SHALE Element type: Pattern
		
Name: CMUBP CMU BLOCK PATTERN Element type: Pattern	Name: CMUELB ELEVATION BLOCK PTN Element type: Pattern	Name: COAL COAL Element type: Pattern

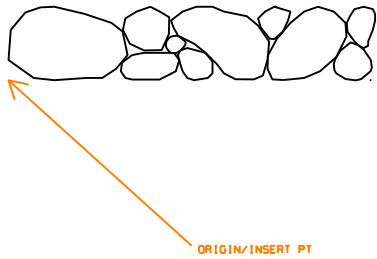
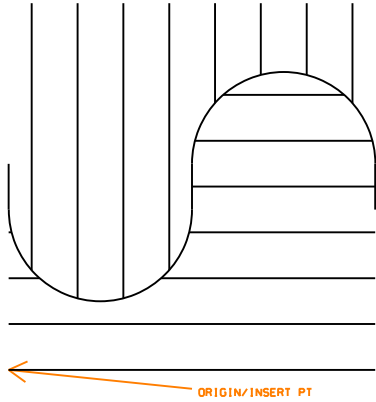
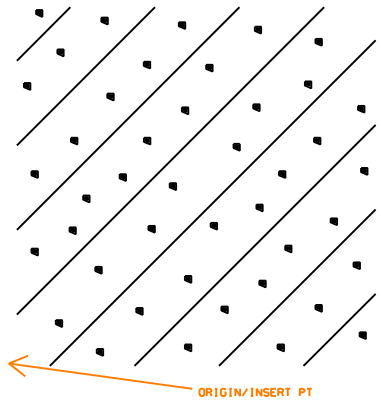
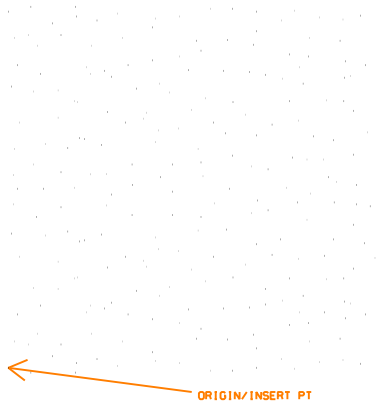
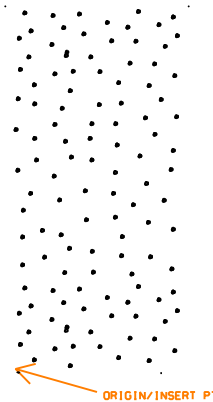
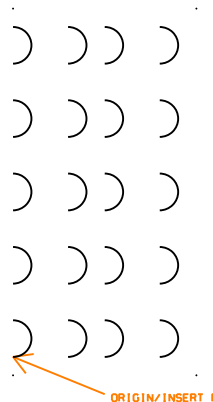
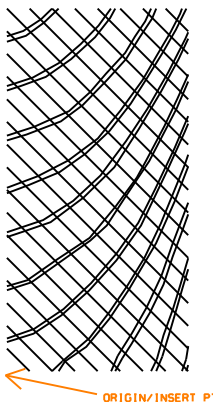
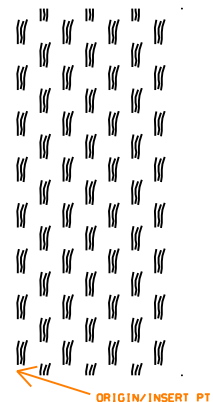
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: CONBLK CONCRETE BLOCK PATTERN Element type: Pattern	Name: CONC CONCRETE Element type: Pattern	Name: CONCCN CONCRETE CINDER Element type: Pattern
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: CONCLW CONCRETE LIGHT WEIGHT Element type: Pattern	Name: CONCPR PRECAST CASTIN PLACECONCPTN Element type: Pattern	Name: CONCST CONCRETE STONE Element type: Pattern
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: CONGLM CONGLOMERATE Element type: Pattern	Name: CONPBS PUMICE BLK CONC SMSCALE PTN Element type: Pattern	Name: CSHALE CEMENTED SHALE Element type: Pattern

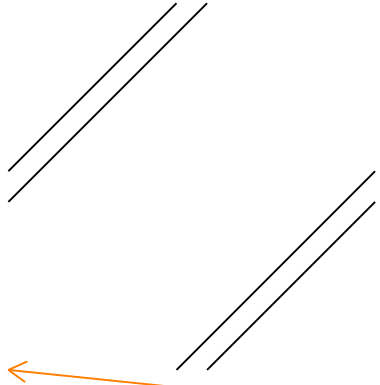
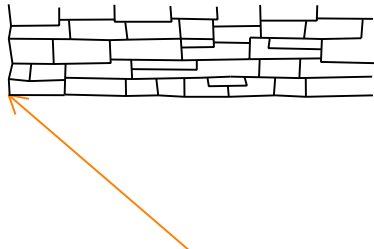
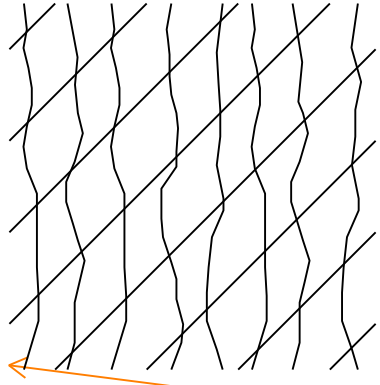
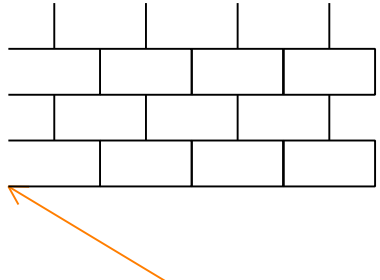
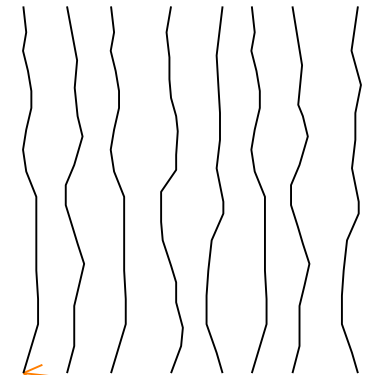
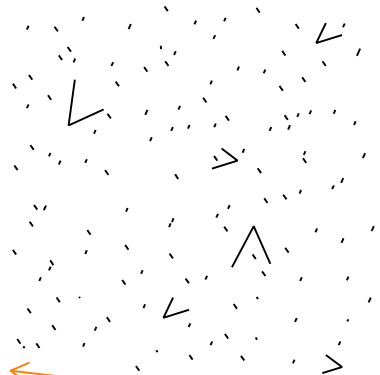
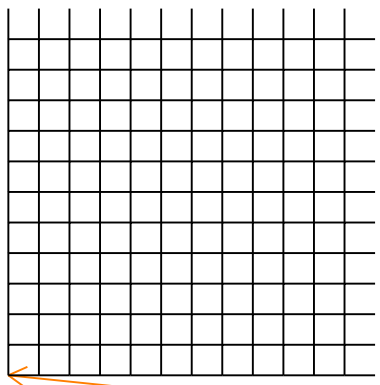
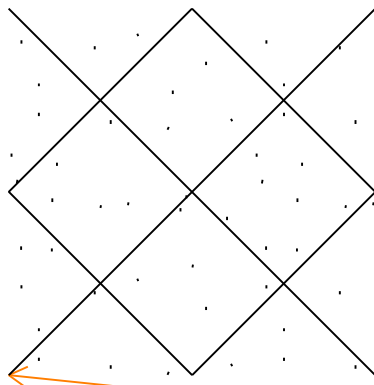
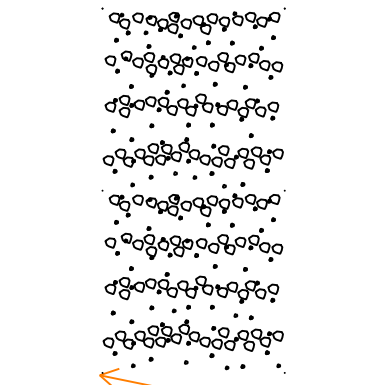
		
Name: CSJNT CLOSELY SPACED JOINTS Element type: Pattern	Name: CSTIRN CAST IRON PATTERN Element type: Pattern	Name: CSTSTN CAST STONE PATTERN Element type: Pattern
		
Name: CTILSS CERAMIC TILE SM SCALE Element type: Pattern	Name: CUTSTN CUT STONE PATTERN Element type: Pattern	Name: DIORIT DIORITE Element type: Pattern
		
Name: DOLOM DOLOMITE Element type: Pattern	Name: EARTH COMPACTD FILL EARTHWRK PTN Element type: Pattern	Name: EEARTH EXISTING EARTH Element type: Pattern

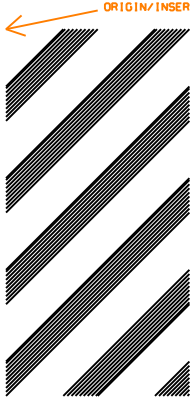
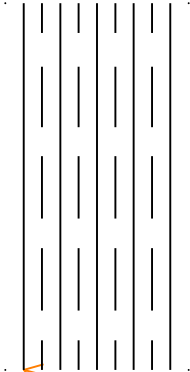
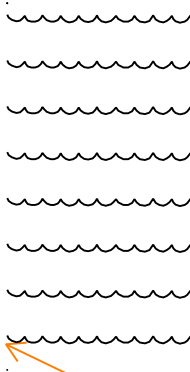
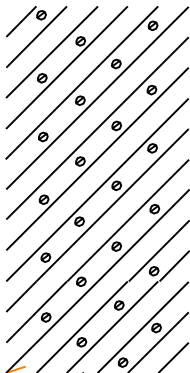
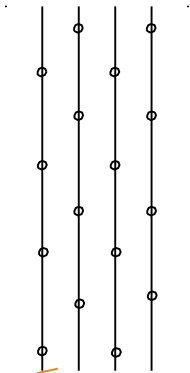
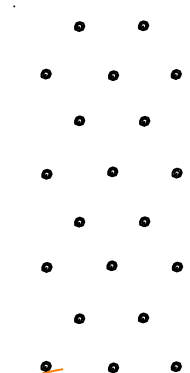
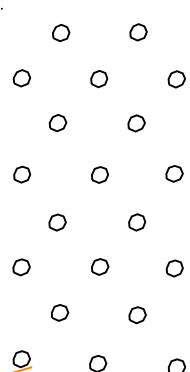
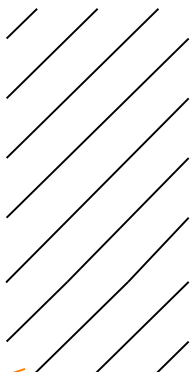
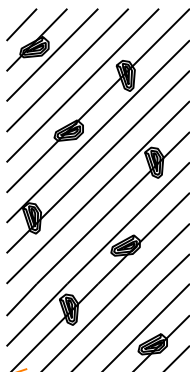
		
Name: EROCK EXISTING ROCK Element type: Pattern	Name: FIBFSF FIBROUS FIRE SAFING PTN Element type: Pattern	Name: FILLSC FILL SECTION Element type: Pattern
		
Name: FILTBD FILTRATION BED Element type: Pattern	Name: GABBRO GABBRO Element type: Pattern	Name: GLASS STRUCTURAL GLASS PTN Element type: Pattern
		
Name: GNEISS GNEISS Element type: Pattern	Name: GRANIT GRANITE Element type: Pattern	Name: GRAVEL GRAVEL Element type: Pattern

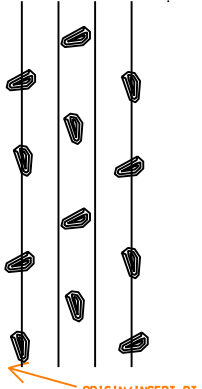
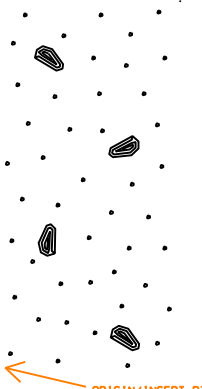
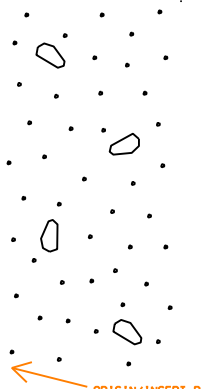
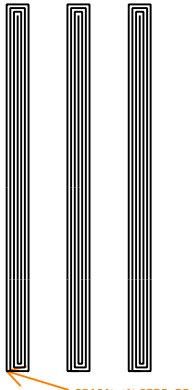
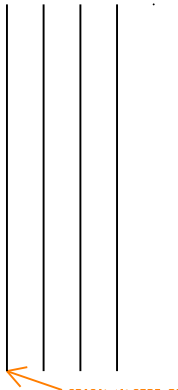
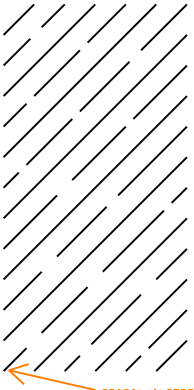
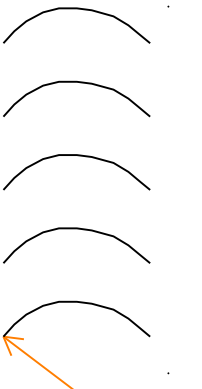
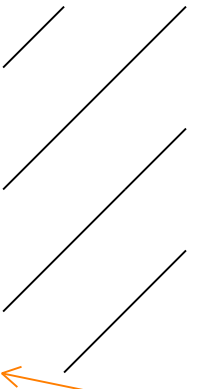
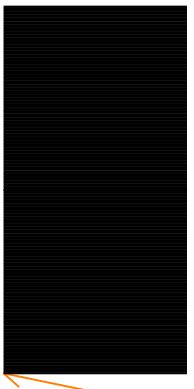
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Name: GRAYWC GRAYWACKE Element type: Pattern	Name: GROUT GROUT Element type: Pattern	Name: GRVCRE CRUSHED ROCK EARTH GRVL PTN Element type: Pattern
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: GRVPFE POROUSFILLGRAVLEARTHWRKPTN Element type: Pattern	Name: GRVSCL SAND CLAY GRAVEL PATTERN Element type: Pattern	Name: GYPPE GYPSUM PLASTERPLAN ELEV PTN Element type: Pattern
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: HFRACT HIGHLY FRACTURED Element type: Pattern	Name: INSQLT LRGSCALE INSULATNQUILTSPN Element type: Pattern	Name: INSRIG RIGID INSULATION PATTERN Element type: Pattern

 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: INSSCM SOLIDCORKMAGNESIA INSULPTN Element type: Pattern	Name: LIMEST LIMESTONE Element type: Pattern	Name: LSWAMP LARGE SWAMP Element type: Pattern
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: MARBL1 MARBLE ELEVATION VIEW Element type: Pattern	Name: MARBL2 MARBLE STONE PLAN VIEW Element type: Pattern	Name: MSJNT MODERATELY SPACED JOINTS Element type: Pattern
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: POROUS POROUS Element type: Pattern	Name: QUARTZ QUARTZITE Element type: Pattern	Name: RHYOLT RHYOLITE Element type: Pattern

		
Name: RIPRAP RIPRAP PATTERN Element type: Pattern	Name: ROCK ROCK EARTHWORK PATTERN Element type: Pattern	Name: RUBBLE STONE RUBBLE PATTERN Element type: Pattern
		
Name: SAND SAND PATTERN Element type: Pattern	Name: SANDST SANDSTONE Element type: Pattern	Name: SCHIST SCHIST Element type: Pattern
		
Name: SHELL SHELLS Element type: Pattern	Name: SLATE SLATE Element type: Pattern	Name: SOAPST SOAPSTONE OR SERPENTINE Element type: Pattern

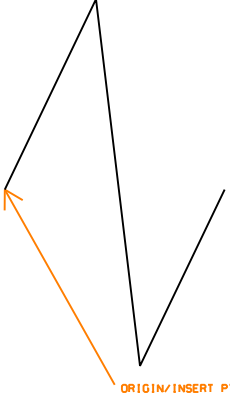
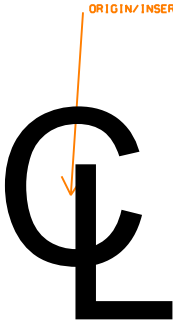
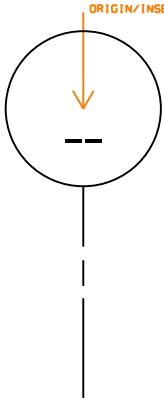
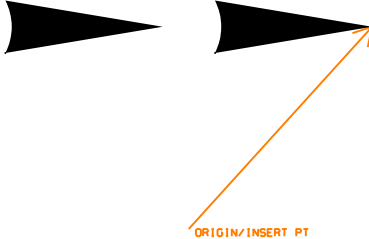
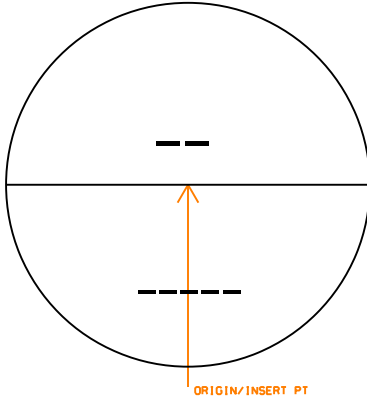
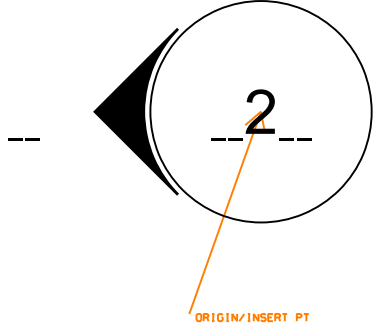
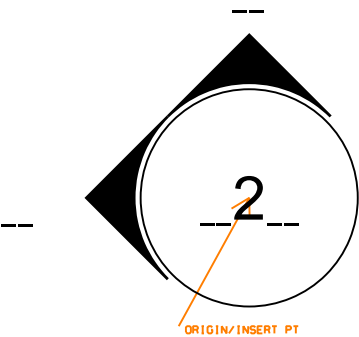
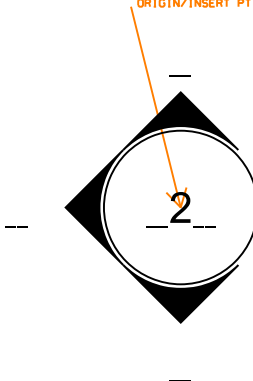
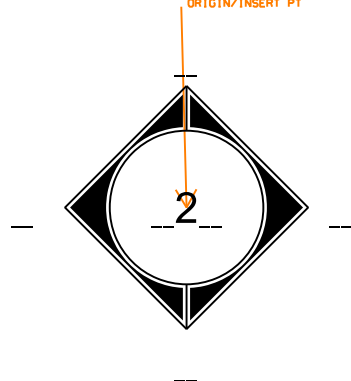
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: STEEL STEEL OTHER METALS PATTERN Element type: Pattern	Name: STNSQR SQUARED STONE PATTERN Element type: Pattern	Name: TCBCSS TERACOTA SMSCALE BRICKCOTA Element type: Pattern
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: TCELEV TERRA COTTA ELEVATION PTN Element type: Pattern	Name: TCUSS TERACOTA SMSCALE UNGLZDPTN Element type: Pattern	Name: TERRZO TERRAZZO PATTERN Element type: Pattern
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: TILCER CERAMIC TILE ELEVATION PTN Element type: Pattern	Name: TILESF STRUCTURAL FACING TILE PTN Element type: Pattern	Name: TUFF TUFF OR TUFF BRECCIA Element type: Pattern

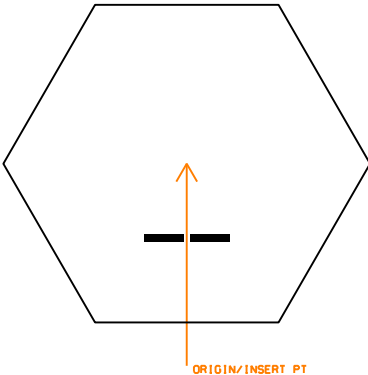
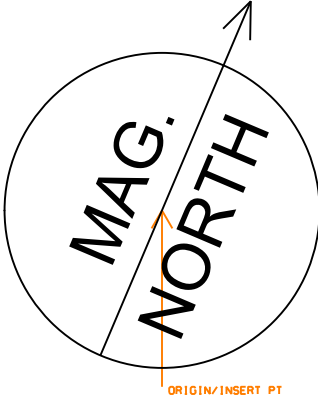
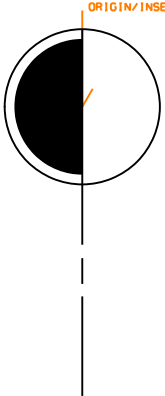
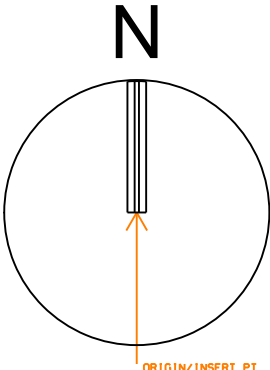
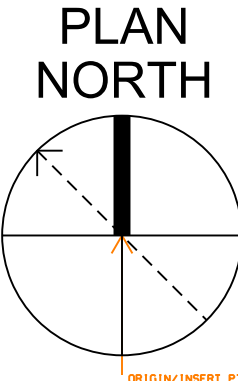
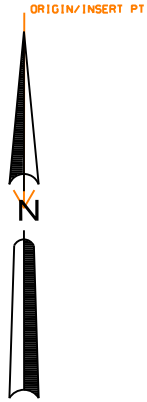
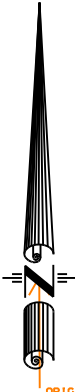
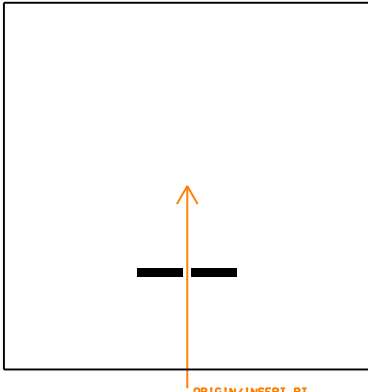
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: USCS1 OL ORGANIC CLAY OR SILT LOW Element type: Pattern	Name: USCS10 OL ORGANIC CLAY OR SILT LOW Element type: Pattern	Name: USCS11 PT PEAT Element type: Pattern
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: USCS12 SC CLAYEY SAND Element type: Pattern	Name: USCS13 SM SILTY SAND Element type: Pattern	Name: USCS14 SP POORLY GRADED SAND Element type: Pattern
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Name: USCS15 SW WELL GRADED SAND Element type: Pattern	Name: USCS2 CL LEAN CLAY Element type: Pattern	Name: USCS3 GC CLAYEY GRAVEL Element type: Pattern

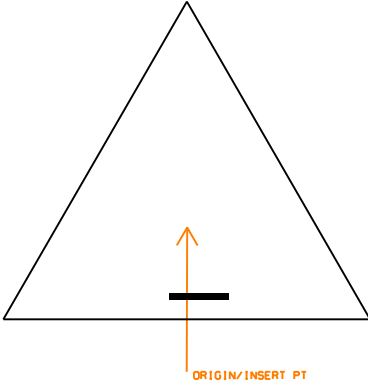
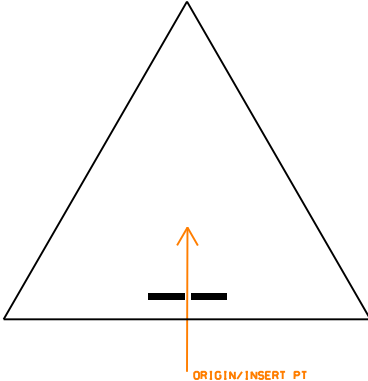
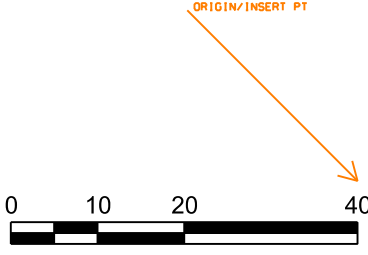
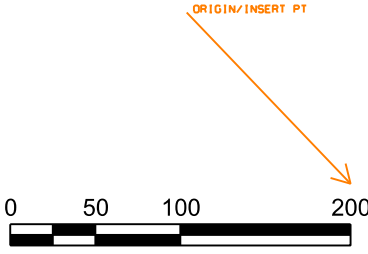
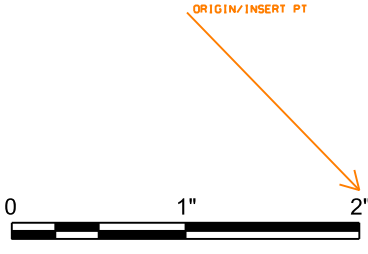
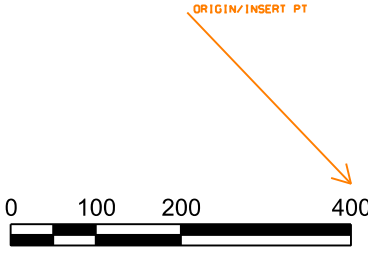
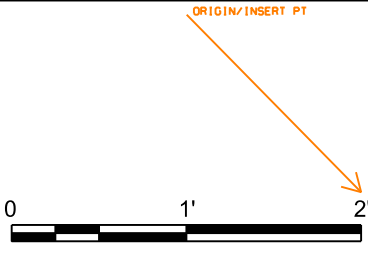
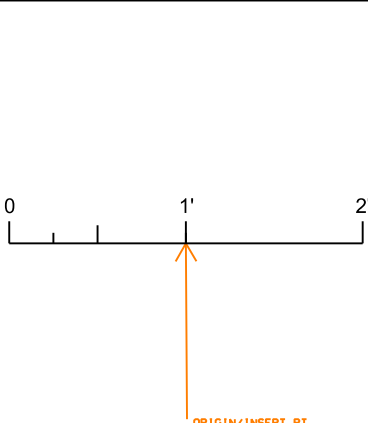
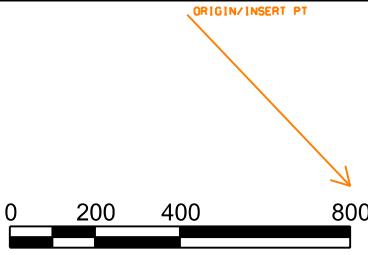
		
Name: USCS4 GM SILTY GRAVEL Element type: Pattern	Name: USCS5 GP POORLY GRADED GRAVEL Element type: Pattern	Name: USCS6 GW WELL GRADED GRAVEL Element type: Pattern
		
Name: USCS7 MH INORGANIC SILT HIGH LIQUIDITY Element type: Pattern	Name: USCS8 ML INORGANIC SILT LOW LIQUIDITY Element type: Pattern	Name: USCS9 OH ORGANIC CLAY OR SILT HIGH LIQUIDITY Element type: Pattern
		
Name: WOOD WOOD SYMBOL Element type: Pattern	Name: WSJNT WIDELY SPACED JOINTS Element type: Pattern	Name: ZONECL ZONES OF CORE LOSS Element type: Pattern

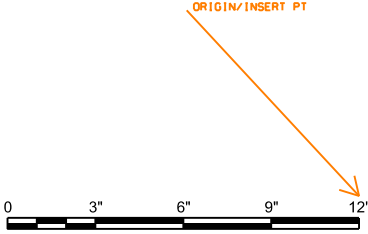
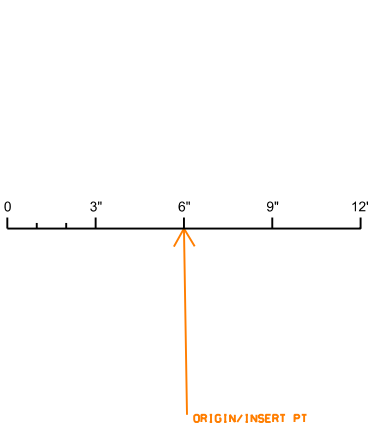
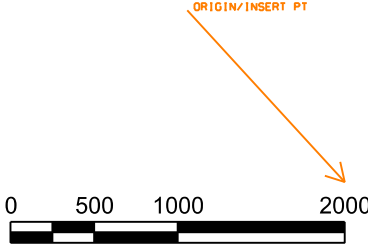
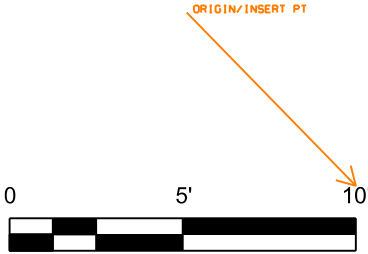
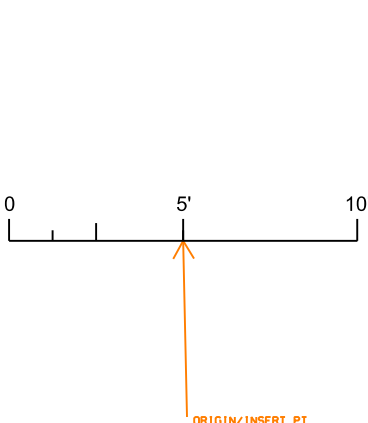
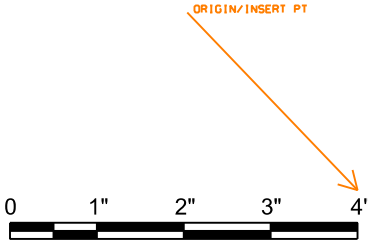
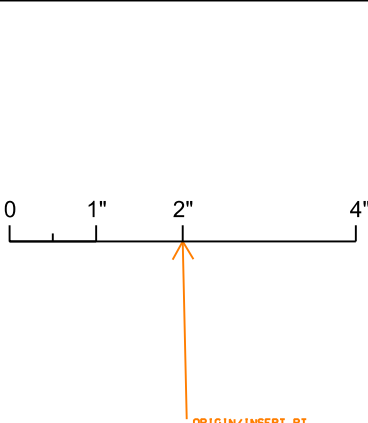
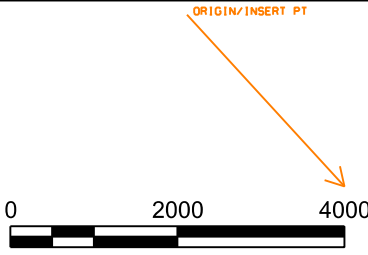
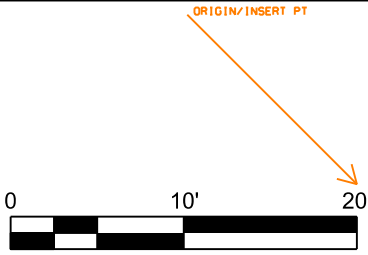
3 General Symbols Library

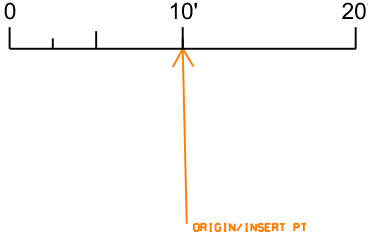
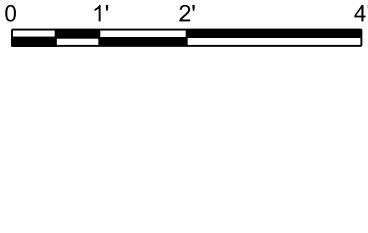
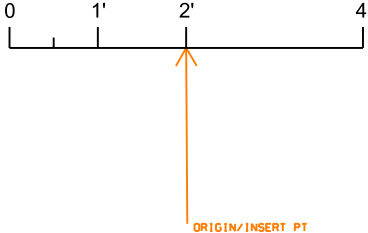
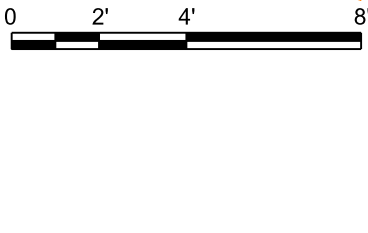
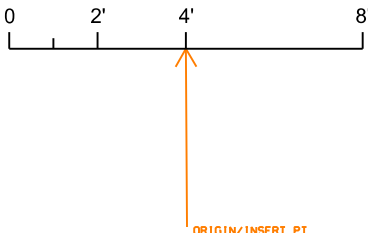
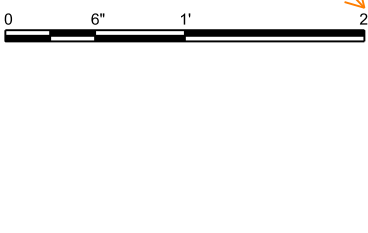
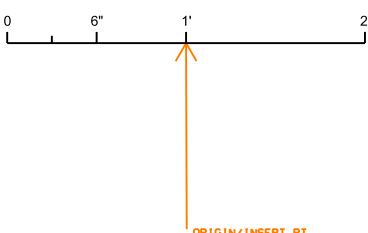
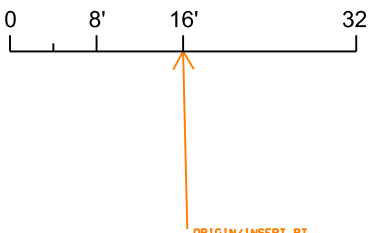
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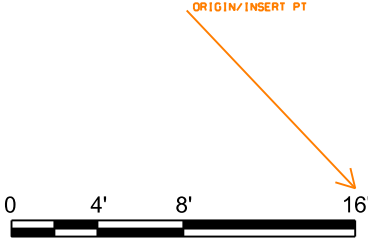
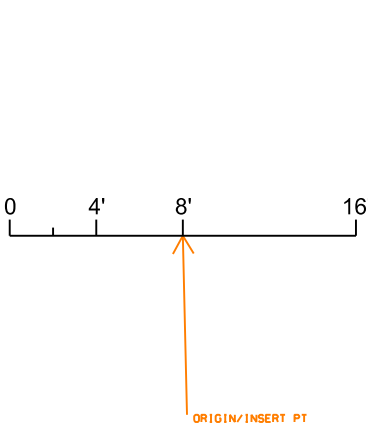
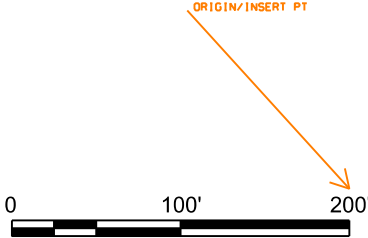
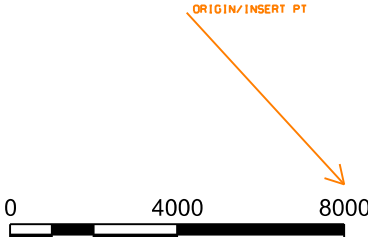
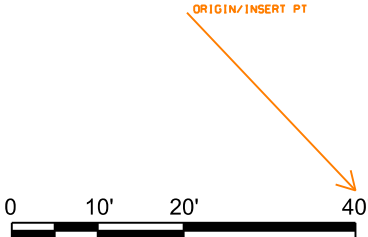
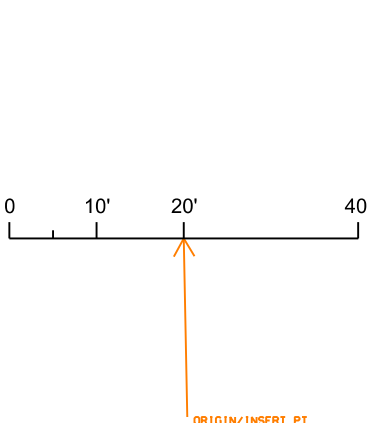
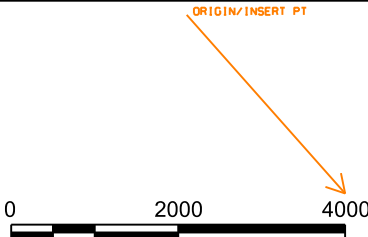
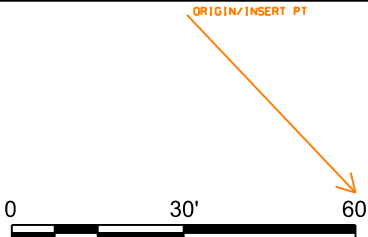
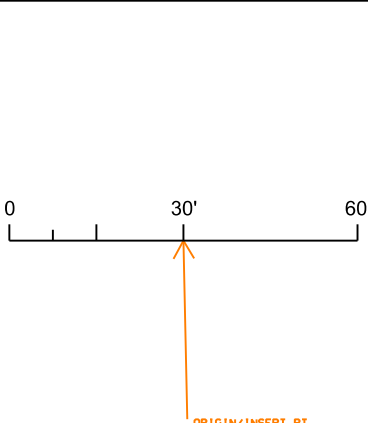
		
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General: DBLARR DOUBLE ARROW TERMINATOR Element type: Symbol	General: DTLIND DETAIL INDICATOR Element type: Symbol	General: ELEV1 ELEVATION INDICATOR, INTERIOR Element type: Symbol
		
General: ELEV2 ELEVATION INDICATOR, INTERIOR Element type: Symbol	General: ELEV3 ELEVATION INDICATOR, INTERIOR Element type: Symbol	General: ELEV4 ELEVATION INDICATOR, INTERIOR Element type: Symbol

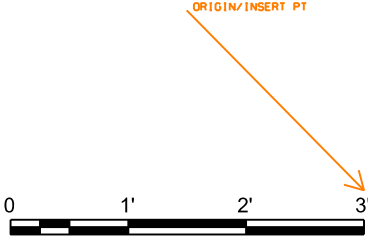
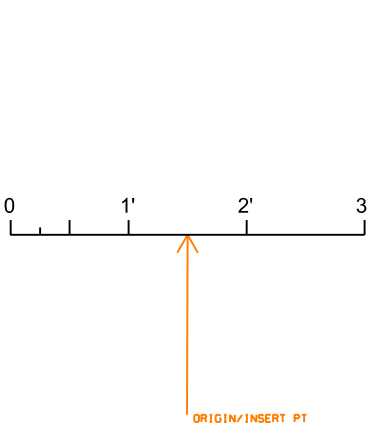
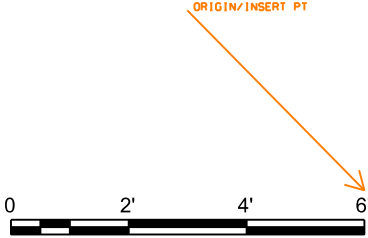
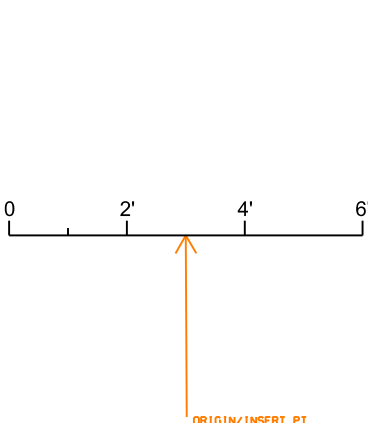
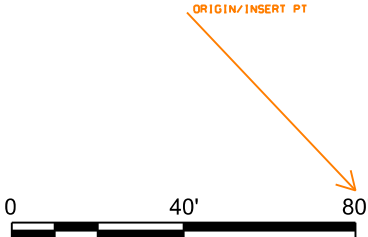
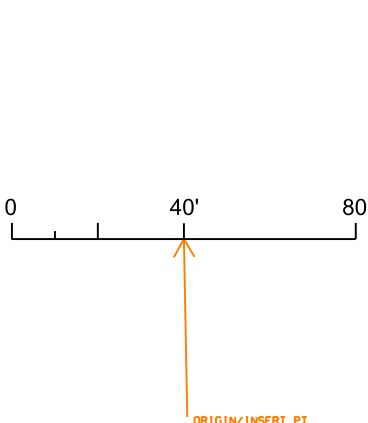
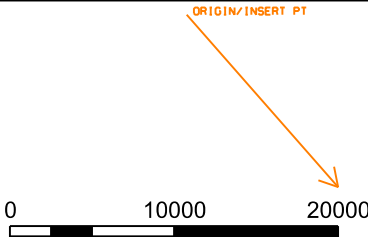
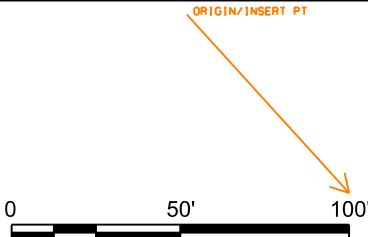
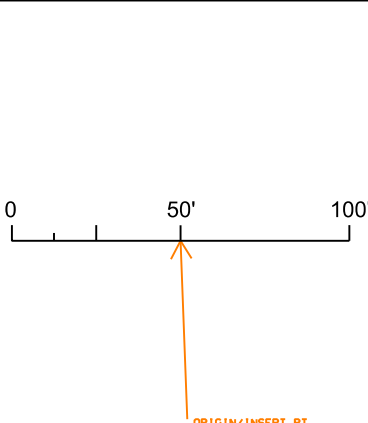
		
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General: NORIND NORTH INDICATOR Element type: Symbol	General: NORNCS NORTH INDICATOR (NCS) Element type: Symbol	General: NORTH1 NORTH INDICATOR Element type: Symbol
		
General: NORTH2 NORTH INDICATOR Element type: Symbol	General: NORTH3 NORTH INDICATOR Element type: Symbol	General: NOTIND NOTE INDICATOR Element type: Symbol

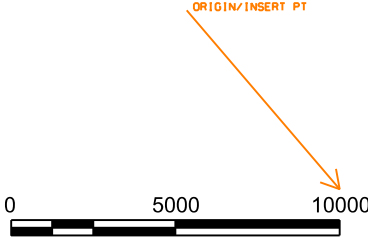
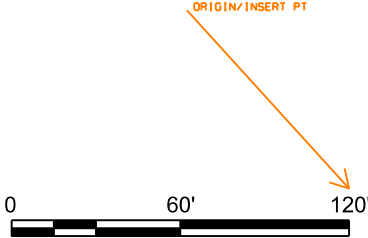
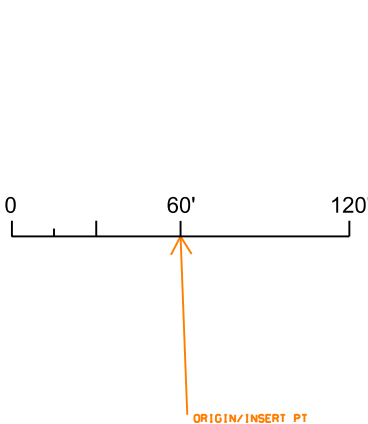
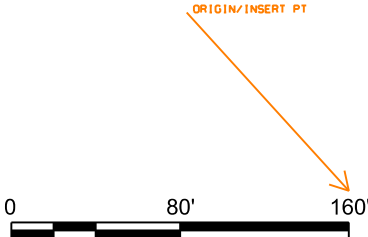
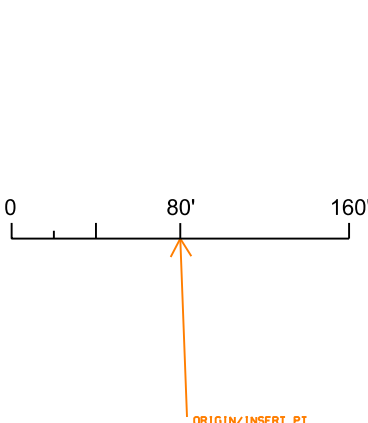
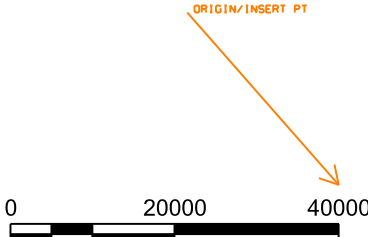
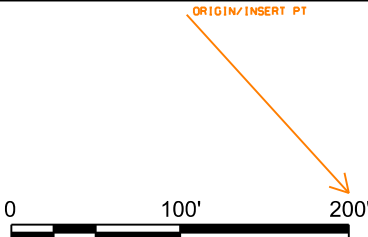
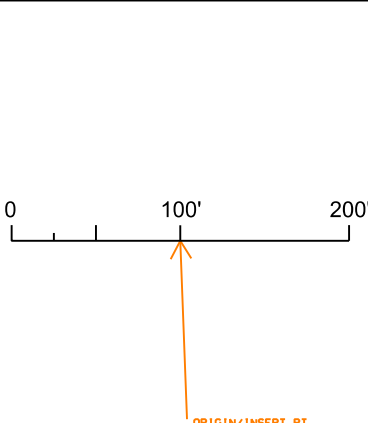
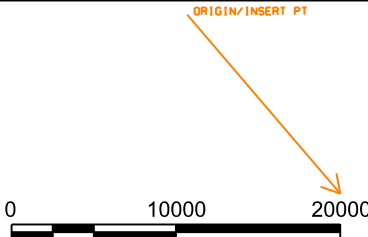
		
General: REVID1 REVISION INDICATOR 1 CHARACTER Element type: Symbol	General: REVID2 REVISION INDICATOR 2 CHARACTERS Element type: Symbol	General: S00001 SCALE 1 = 1 (metric) Element type: Symbol
		
General: S00005 SCALE 1 = 5 (metric) Element type: Symbol	General: S0000B SCALE FULL Element type: Symbol	General: S00010 SCALE 1 = 10 (metric) Element type: Symbol
		
General: S0001B SCALE 1" = 1' Element type: Symbol	General: S0001G SCALE 1" = 1' Element type: Symbol	General: S00020 SCALE 1 = 20 (metric) Element type: Symbol

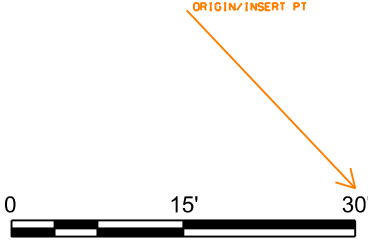
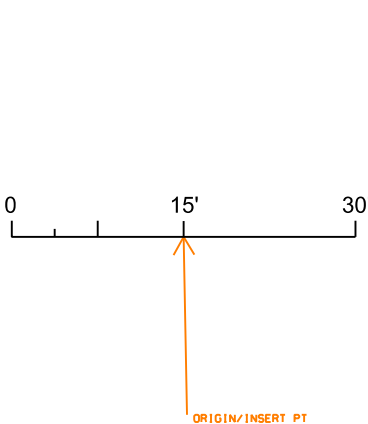
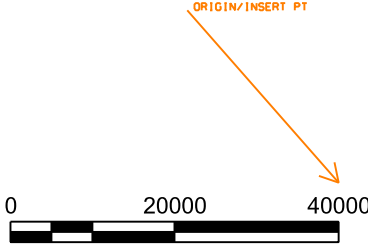
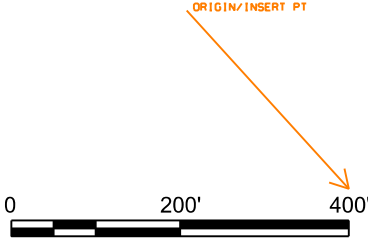
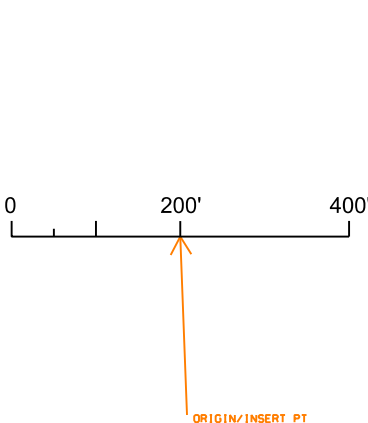
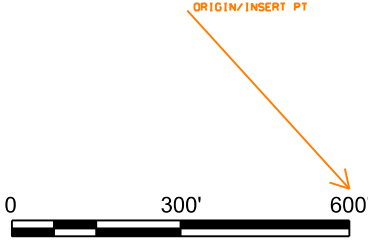
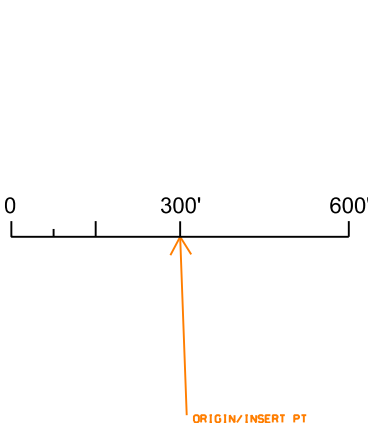
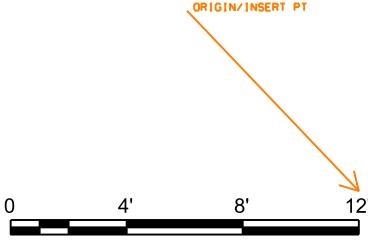
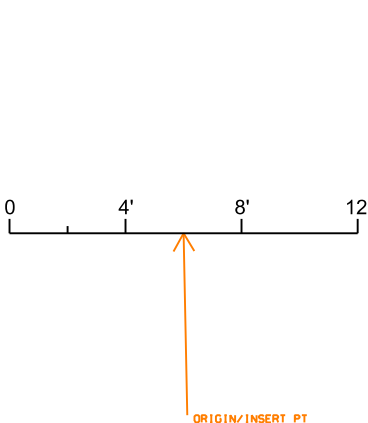
		
General: S0003B SCALE 3" = 1' Element type: Symbol	General: S0003G SCALE 3" = 1' Element type: Symbol	General: S00050 SCALE 1 = 50 (metric) Element type: Symbol
		
General: S0005B SCALE 1" = 5' Element type: Symbol	General: S0005G SCALE 1" = 5' Element type: Symbol	General: S0006B SCALE 6" = 1' Element type: Symbol
		
General: S0006G SCALE 6" = 1' Element type: Symbol	General: S00100 SCALE 1 = 100 (metric) Element type: Symbol	General: S0010B SCALE 1" = 10' Element type: Symbol

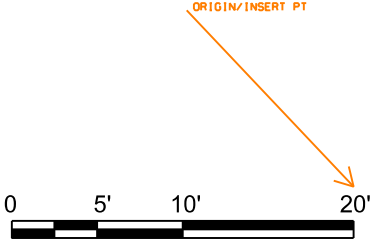
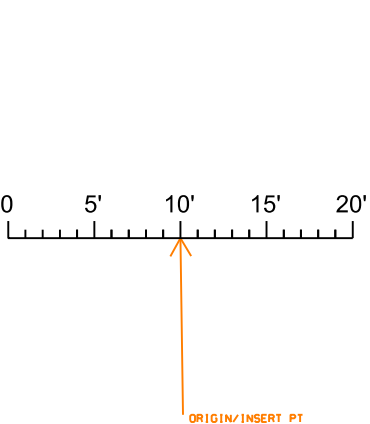
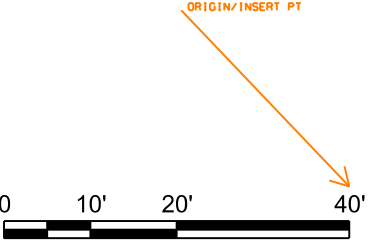
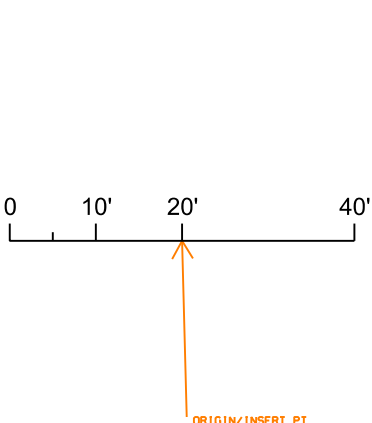
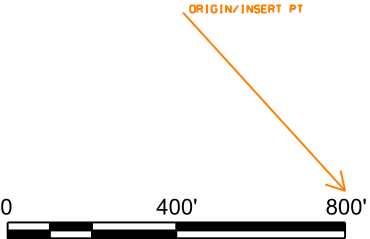
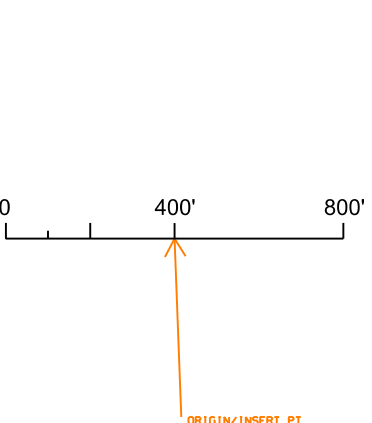
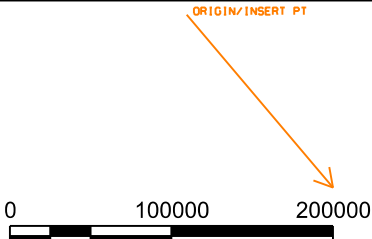
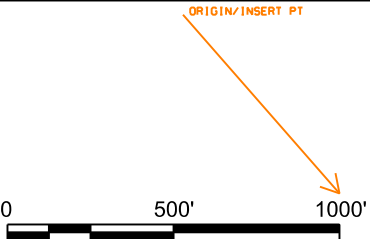
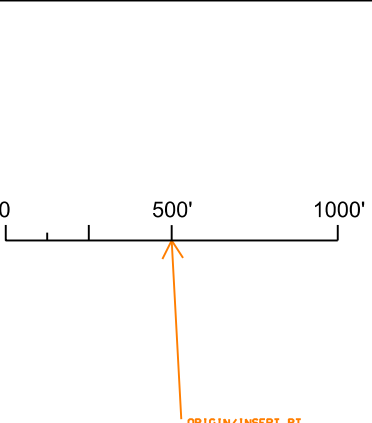
		
General: S0010G SCALE 1" = 10' Element type: Symbol	General: S0012B SCALE 1/2" = 1' Element type: Symbol	General: S0012G SCALE 1/2" = 1' Element type: Symbol
		
General: S0014B SCALE 1/4" = 1' Element type: Symbol	General: S0014G SCALE 1/4" = 1' Element type: Symbol	General: S0015B SCALE 1 1/2" = 1' Element type: Symbol
		
General: S0015G SCALE 1 1/2" = 1' Element type: Symbol	General: S0016B SCALE 1/16" = 1' Element type: Symbol	General: S0016G SCALE 1/16" = 1' Element type: Symbol

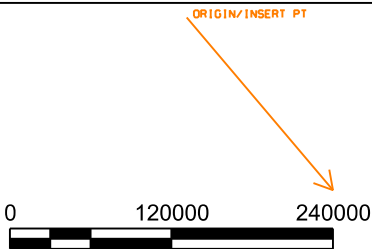
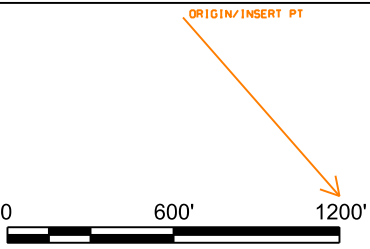
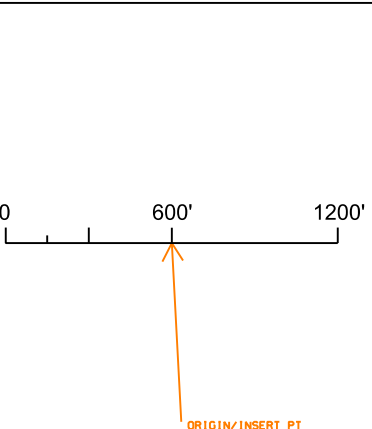
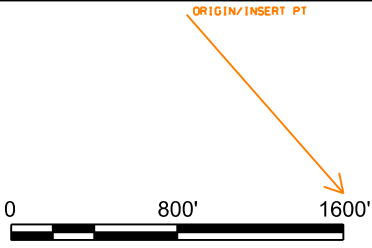
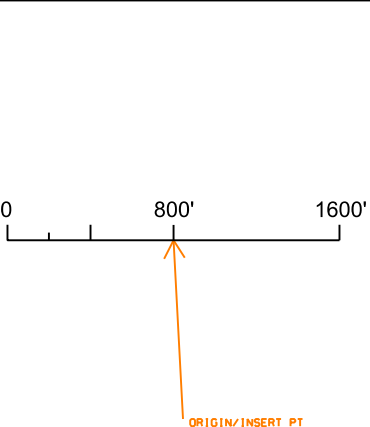
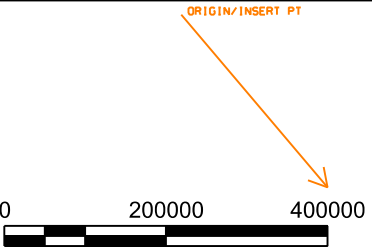
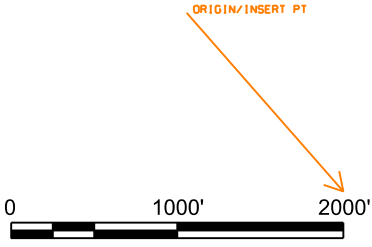
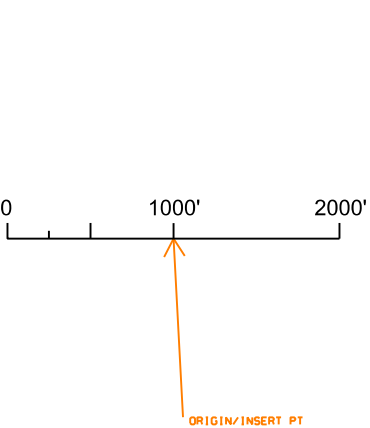
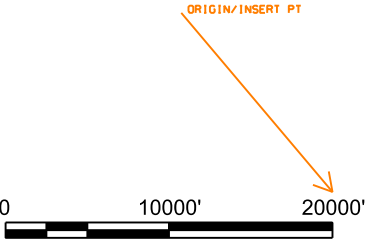
		
General: S0018B SCALE 1/8" = 1' Element type: Symbol	General: S0018G SCALE 1/8" = 1' Element type: Symbol	General: S001KB SCALE 1 = 1000 (imperial) Element type: Symbol
		
General: S00200 SCALE 1 = 200 (metric) Element type: Symbol	General: S0020B SCALE 1" = 20' Element type: Symbol	General: S0020G SCALE 1" = 20' Element type: Symbol
		
General: S002KB SCALE 1 = 2000 (imperial) Element type: Symbol	General: S0030B SCALE 1" = 30' Element type: Symbol	General: S0030G SCALE 1" = 30' Element type: Symbol

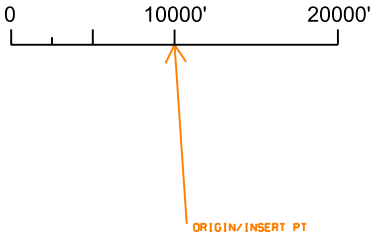
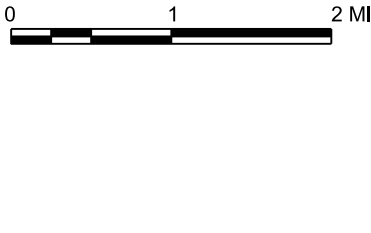
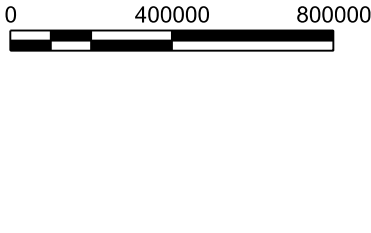
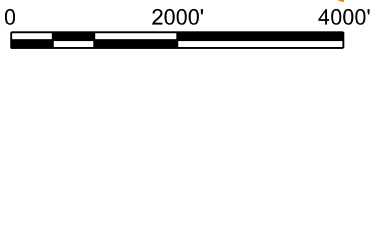
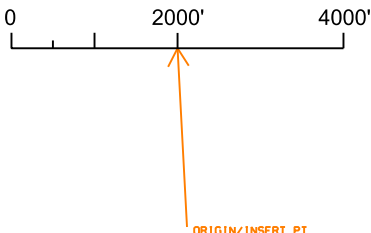
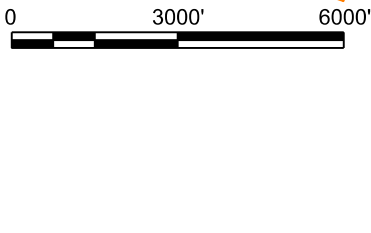
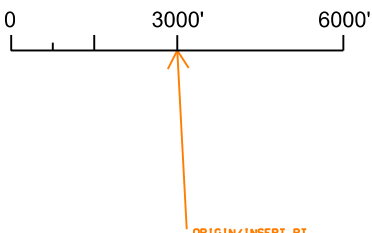
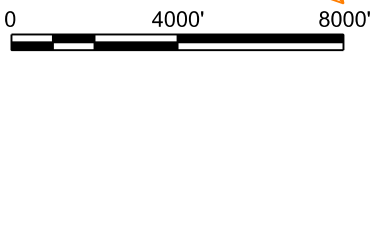
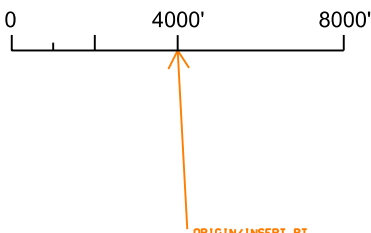
		
General: S0034B SCALE 3/4" = 1' Element type: Symbol	General: S0034G SCALE 3/4" = 1' Element type: Symbol	General: S0038B SCALE 3/8" = 1' Element type: Symbol
		
General: S0038G SCALE 3/8" = 1' Element type: Symbol	General: S0040B SCALE 1" = 40' Element type: Symbol	General: S0040G SCALE 1" = 40' Element type: Symbol
		
General: S00500 SCALE 1" = 500 (metric) Element type: Symbol	General: S0050B SCALE 1" = 50' Element type: Symbol	General: S0050G SCALE 1" = 50' Element type: Symbol

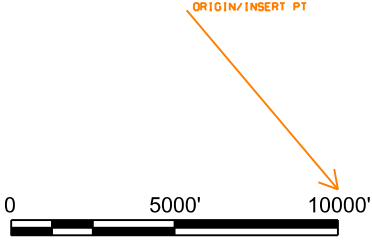
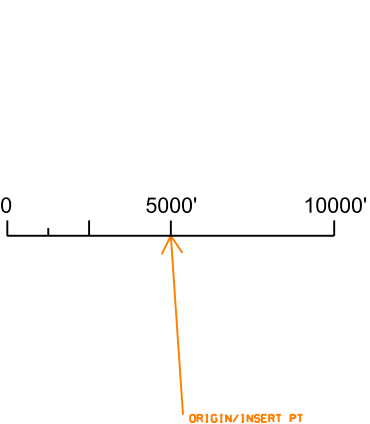
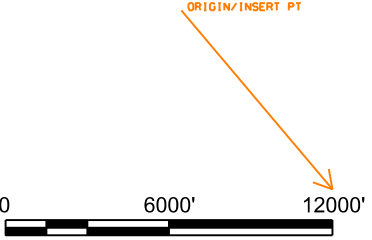
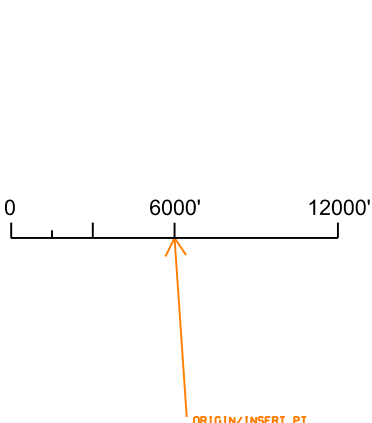
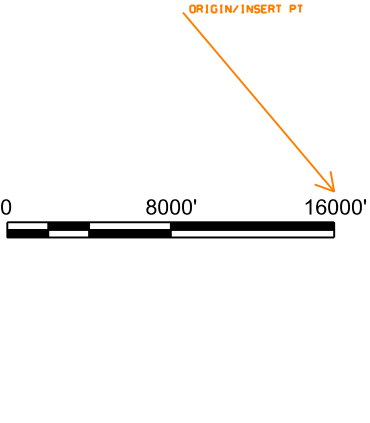
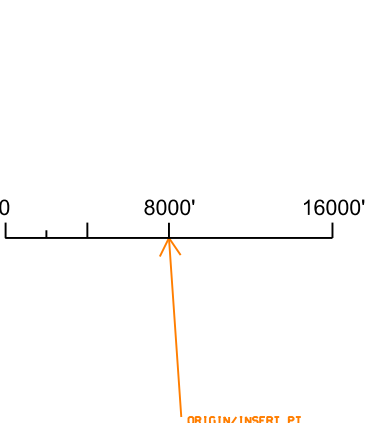
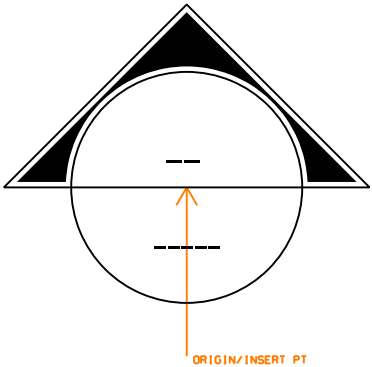
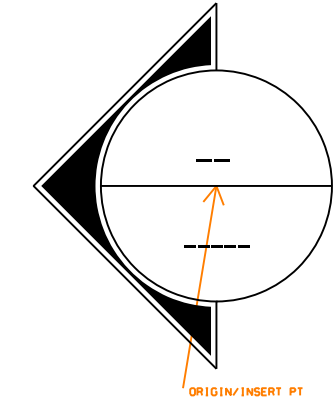
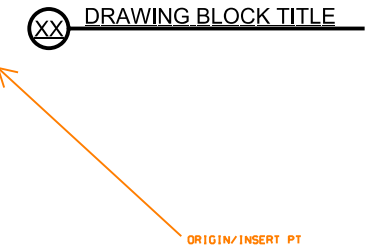
		
General: S005KB SCALE 1 = 5000 (imperial) Element type: Symbol	General: S0060B SCALE 1" = 60' Element type: Symbol	General: S0060G SCALE 1" = 60' Element type: Symbol
		
General: S0080B SCALE 1" = 80' Element type: Symbol	General: S0080G SCALE 1" = 80' Element type: Symbol	General: S01000 SCALE 1 = 1000 (metric) Element type: Symbol
		
General: S0100B SCALE 1" = 100' Element type: Symbol	General: S0100G SCALE 1" = 100' Element type: Symbol	General: S010KB SCALE 1 = 10000 (imperial) Element type: Symbol

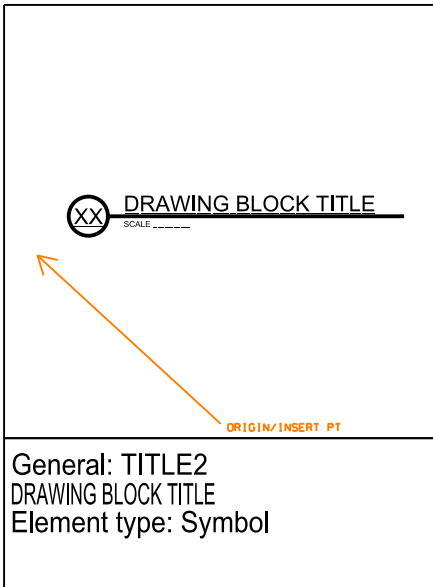
		
General: S0150B SCALE 1" = 15' Element type: Symbol	General: S0150G SCALE 1" = 15' Element type: Symbol	General: S02000 SCALE 1 = 2000 (metric) Element type: Symbol
		
General: S0200B SCALE 1" = 200' Element type: Symbol	General: S0200G SCALE 1" = 200' Element type: Symbol	General: S0300B SCALE 1" = 300' Element type: Symbol
		
General: S0300G SCALE 1" = 300' Element type: Symbol	General: S0316B SCALE 3/16" = 1' Element type: Symbol	General: S0316G SCALE 3/16" = 1' Element type: Symbol

		
General: S0332B SCALE 3/32" = 1' Element type: Symbol	General: S0332G SCALE 3/32" = 1' Element type: Symbol	General: S0364B SCALE 3/64" = 1' Element type: Symbol
		
General: S0364G SCALE 3/64" = 1' Element type: Symbol	General: S0400B SCALE 1" = 400' Element type: Symbol	General: S0400G SCALE 1" = 400' Element type: Symbol
		
General: S05000 SCALE 1" = 5000 (metric) Element type: Symbol	General: S0500B SCALE 1" = 500' Element type: Symbol	General: S0500G SCALE 1" = 500' Element type: Symbol

		
General: S06000 SCALE 1 = 6000 (metric) Element type: Symbol	General: S0600B SCALE 1" = 600' Element type: Symbol	General: S0600G SCALE 1" = 600' Element type: Symbol
		
General: S0800B SCALE 1" = 800' Element type: Symbol	General: S0800G SCALE 1" = 800' Element type: Symbol	General: S10000 SCALE 1 = 10000 (metric) Element type: Symbol
		
General: S1000B SCALE 1" = 1000' Element type: Symbol	General: S1000G SCALE 1" = 1000' Element type: Symbol	General: S10K0B SCALE 1" = 10000' Element type: Symbol

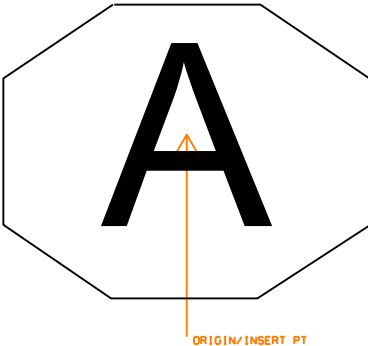
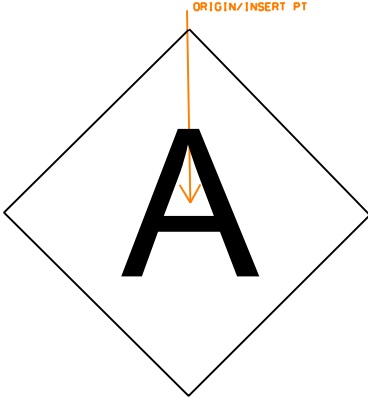
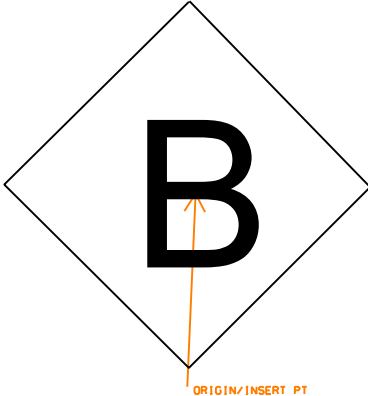
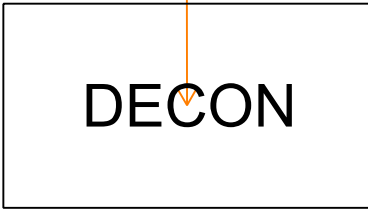
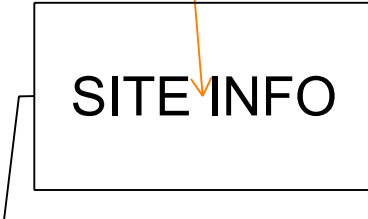
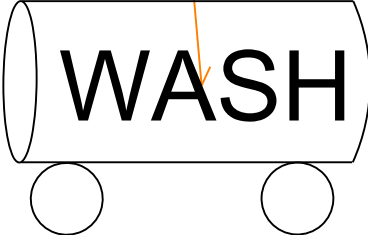
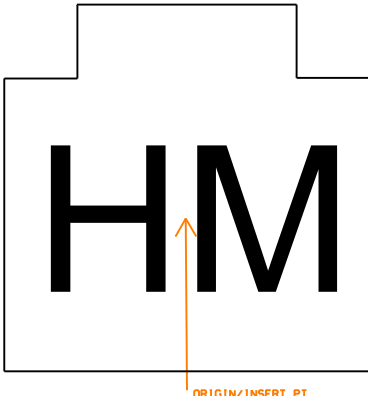
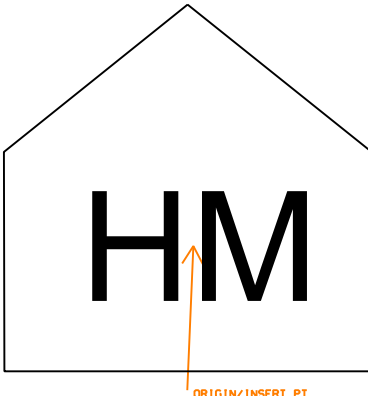
		
General: S10K0G SCALE 1" = 10000' Element type: Symbol	General: S125KB SCALE 1 = 125000 (imperial) Element type: Symbol	General: S20000 SCALE 1 = 20000 (metric) Element type: Symbol
		
General: S2000B SCALE 1" = 2000' Element type: Symbol	General: S2000G SCALE 1" = 2000' Element type: Symbol	General: S3000B SCALE 1" = 3000' Element type: Symbol
		
General: S3000G SCALE 1" = 3000' Element type: Symbol	General: S4000B SCALE 1" = 4000' Element type: Symbol	General: S4000G SCALE 1" = 4000' Element type: Symbol

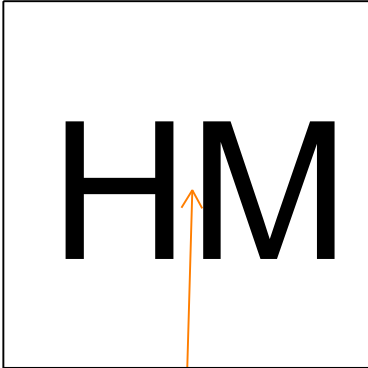
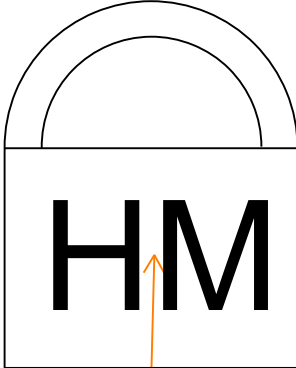
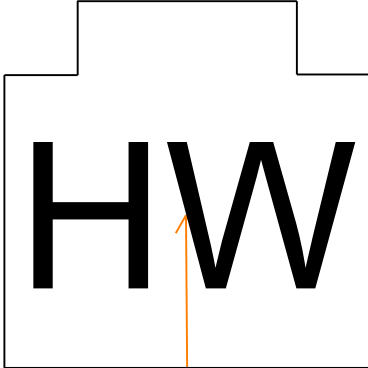
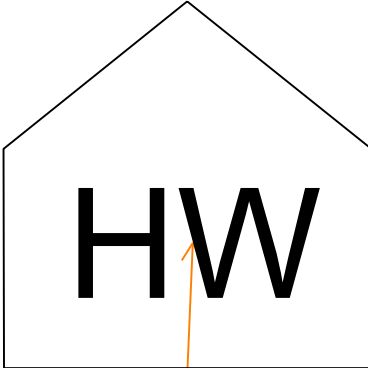
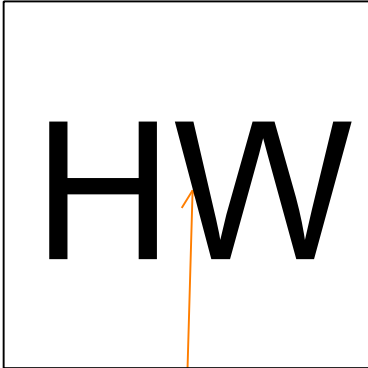
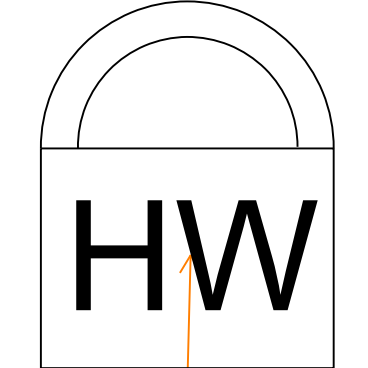
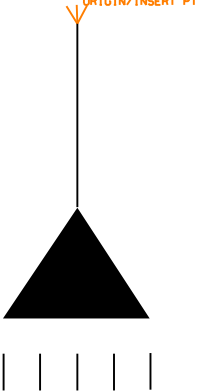
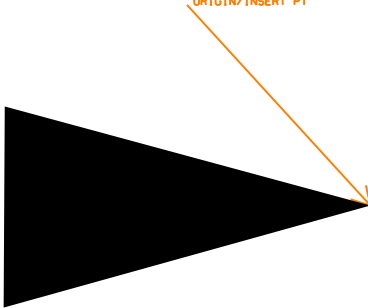
		
General: S5000B SCALE 1" = 5000' Element type: Symbol	General: S5000G SCALE 1" = 5000' Element type: Symbol	General: S6000B SCALE 1" = 6000' Element type: Symbol
		
General: S6000G SCALE 1" = 6000' Element type: Symbol	General: S8000B SCALE 1" = 8000' Element type: Symbol	General: S8000G SCALE 1" = 8000' Element type: Symbol
		
General: SECIN1 SECTION/ELEVATION INDICATOR Element type: Symbol	General: SECIN2 SECTION/ELEVATION INDICATOR Element type: Symbol	General: TITLE1 DRAWING BLOCK TITLE Element type: Symbol

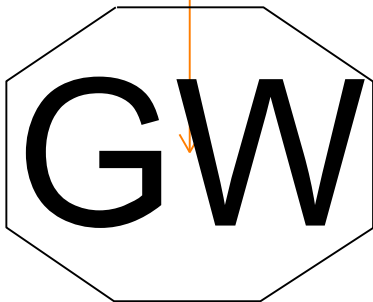
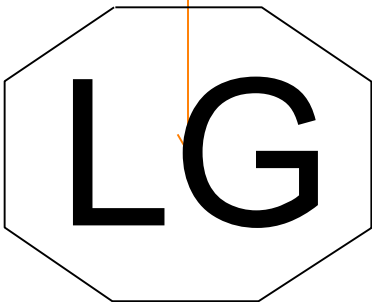
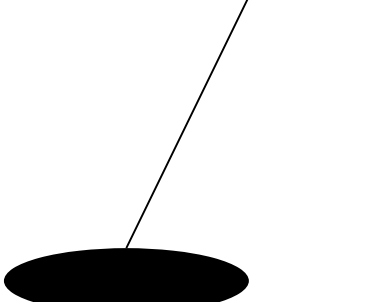
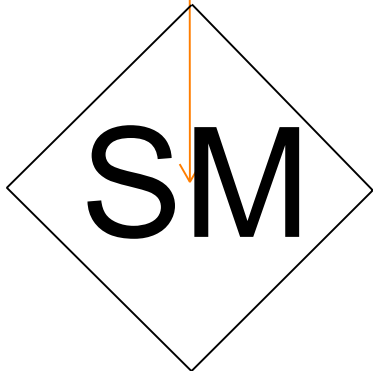
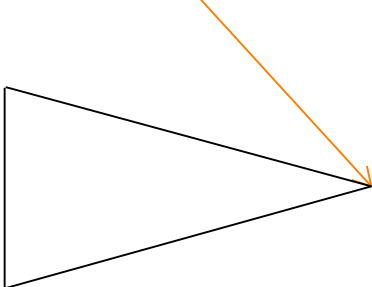
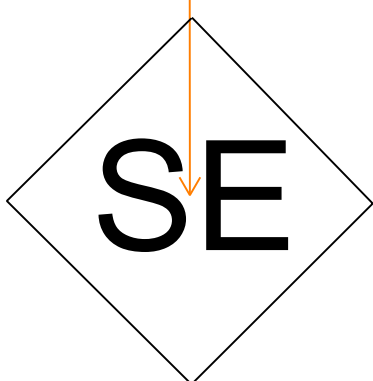
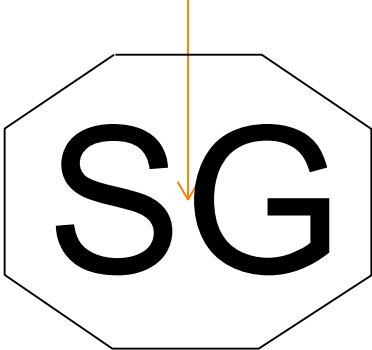
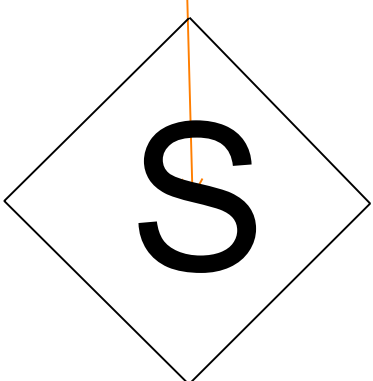


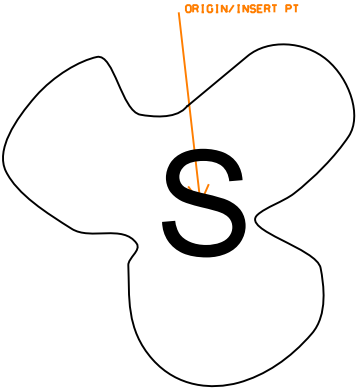
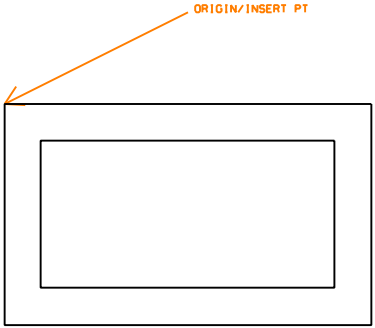
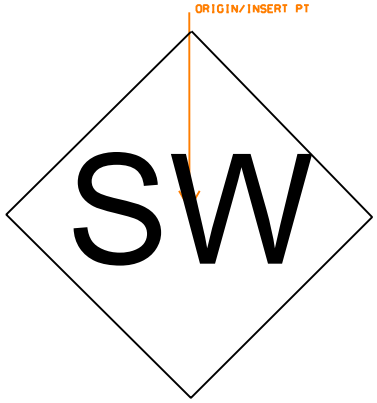
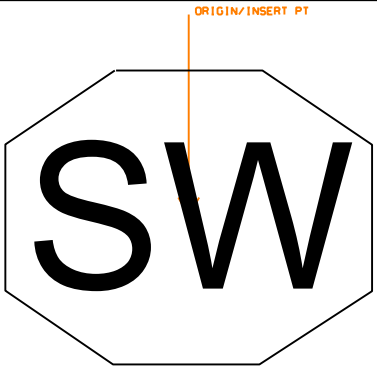
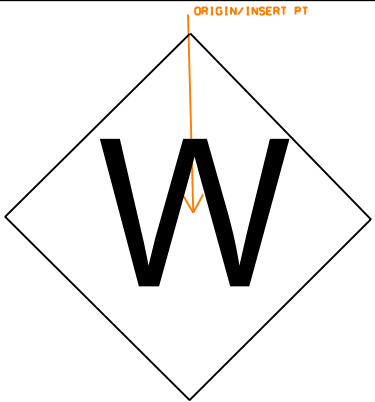
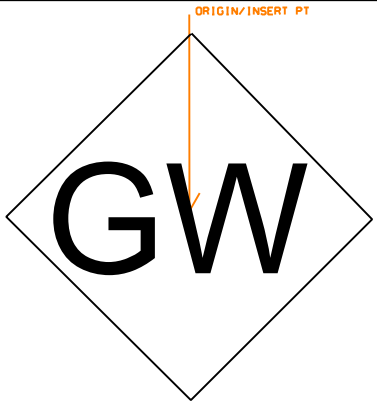
4 Hazardous Materials Symbols Library

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Hazardous Materials: AIRQST AIR QUALITY MON STA Element type: Symbol	Hazardous Materials: AIRSMP AIR SAMPLE LOCATION Element type: Symbol	Hazardous Materials: BIOSMP BIOLOGICAL SAMPLE LOC Element type: Symbol
		
Hazardous Materials: EGDECN EQUIPMENT DECON Element type: Symbol	Hazardous Materials: EGONST ONSITE COMMAND POST Element type: Symbol	Hazardous Materials: EGSITE SITE INFORMATION CENTER Element type: Symbol
		
Hazardous Materials: EGWASH WASHDOWN WATER TANK Element type: Symbol	Hazardous Materials: EHZMSA HAZMAT STOR LOCATION Element type: Symbol	Hazardous Materials: EHZMSB HAZMAT STOR BLDG Element type: Symbol

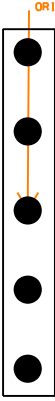
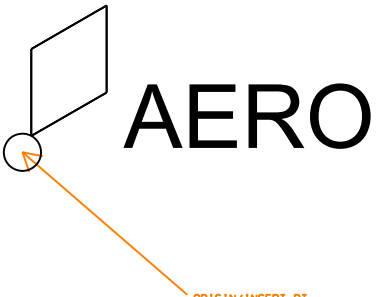
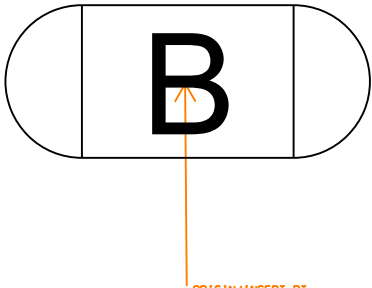
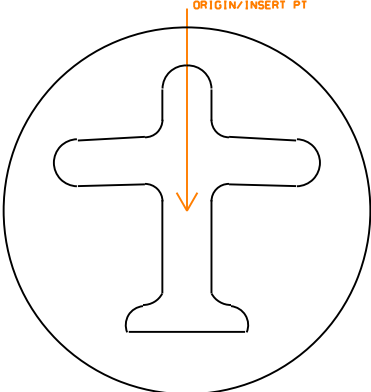
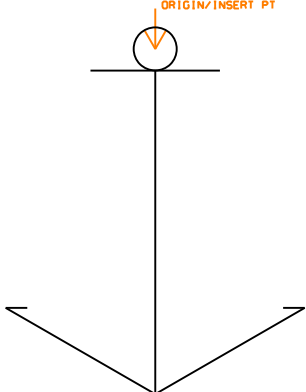
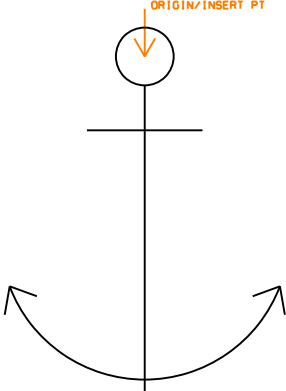
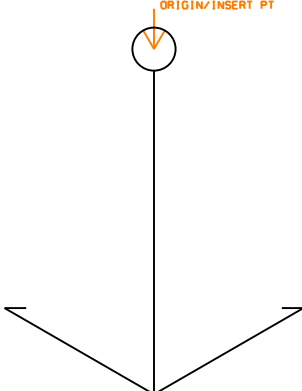
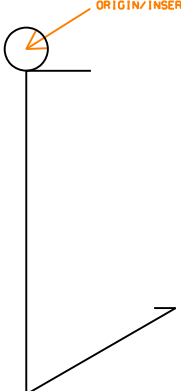
		
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Hazardous Materials: EHZWSB HAZWASTE STOR BLDG Element type: Symbol	Hazardous Materials: EHZWSR HAZWASTE STOR ROOM Element type: Symbol	Hazardous Materials: EHZWSV HAZWASTE STOR VAULT Element type: Symbol
		
Hazardous Materials: EMGSHW EMERGENCY SHOWER Element type: Symbol	Hazardous Materials: EPOLLS POLLUTION SOURCE SITE Element type: Symbol	Hazardous Materials: EYEWAS EMERGENCY EYEWASH Element type: Symbol

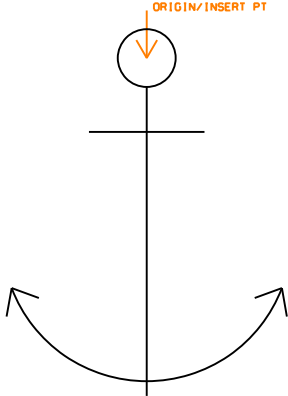
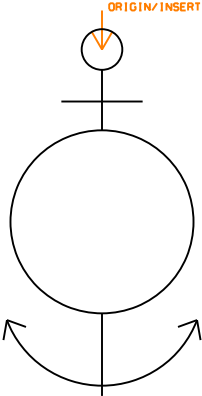
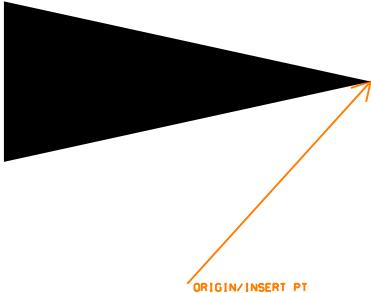
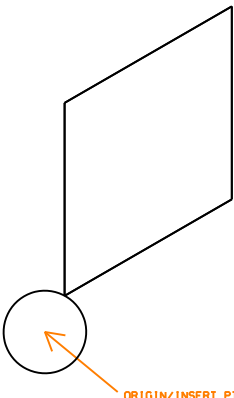
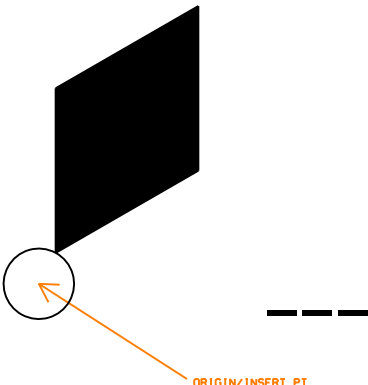
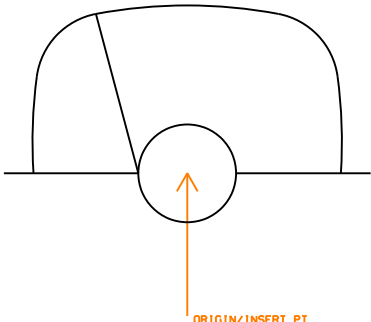
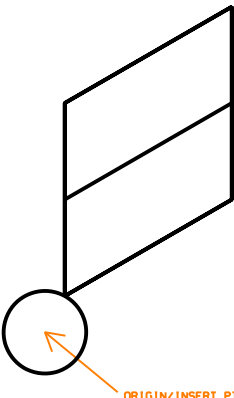
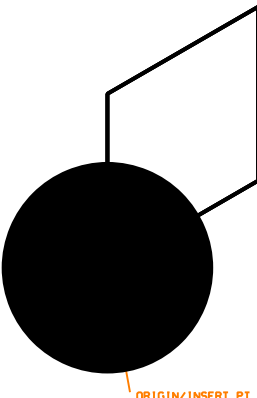
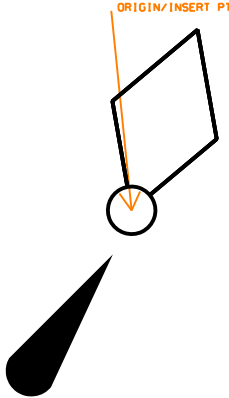
		
Hazardous Materials: GWTQST GRDWTR QUALITY MON STATION Element type: Symbol	Hazardous Materials: LANGAS LANDFILL GAS MON PROBE Element type: Symbol	Hazardous Materials: MAGLOC MAGNETOMETER DET LOC Element type: Symbol
		
Hazardous Materials: MATSMP SOLID MAT SAMPLE LOC Element type: Symbol	Hazardous Materials: PRLLOC POTENTIAL RELEASE LOC Element type: Symbol	Hazardous Materials: RESTR RESTRICTED ACCESS Element type: Symbol
		
Hazardous Materials: SEDSMP SEDIMENT SAMPLE LOC Element type: Symbol	Hazardous Materials: SOLGAS SOIL GAS MONIT PROBE Element type: Symbol	Hazardous Materials: SOLSMP SOIL SAMPLE LOCATION Element type: Symbol

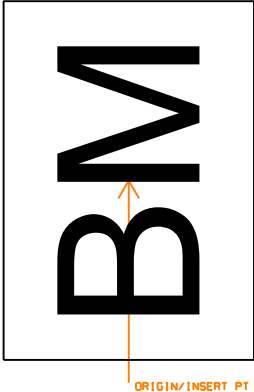
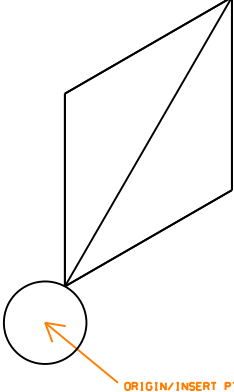
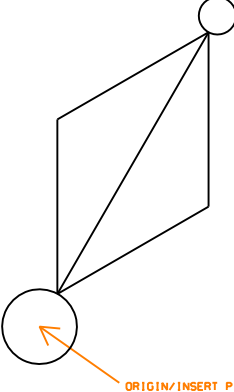
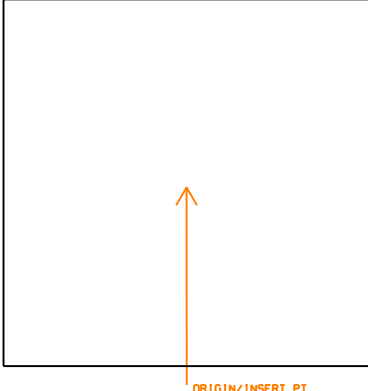
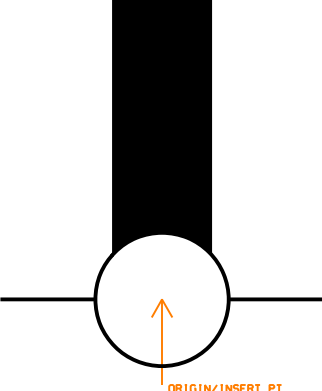
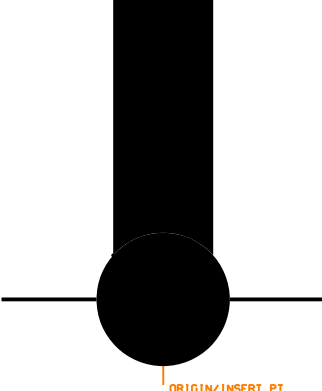
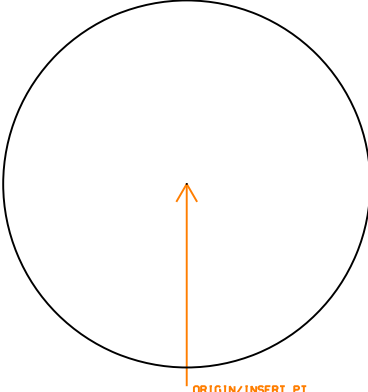
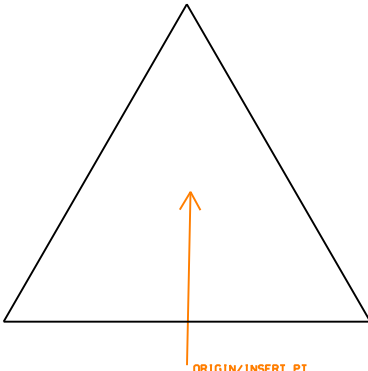
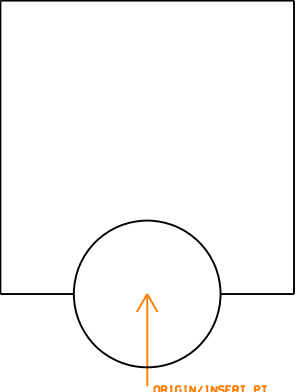
		
Hazardous Materials: SPLRES SPILL RESPONSE Element type: Symbol	Hazardous Materials: SPLTNK SPILL CONTAINMENT TANK Element type: Symbol	Hazardous Materials: SURSMP SURFACE WTR SAMPLE LOC Element type: Symbol
		
Hazardous Materials: SWTQST SURF WTR QUAL MON STATION Element type: Symbol	Hazardous Materials: WASSMP WASTE SAMPLE LOCATION Element type: Symbol	Hazardous Materials: WATSMP GROUNDWATER SAMPLE LOC Element type: Symbol

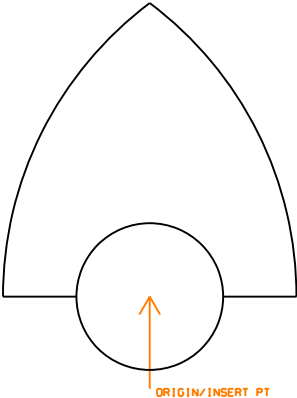
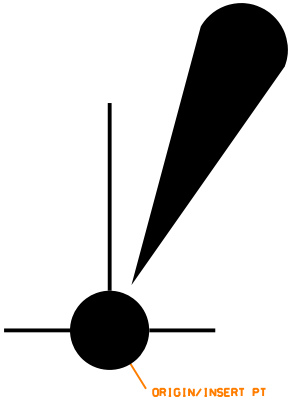
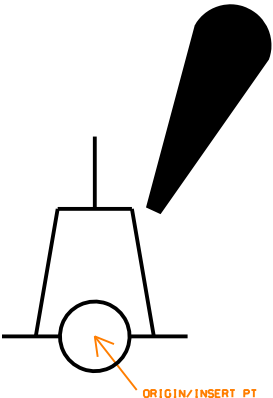
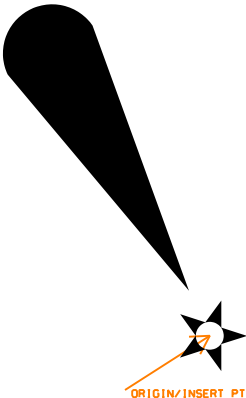
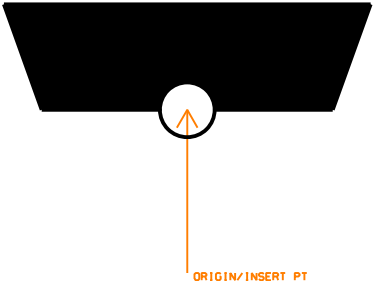
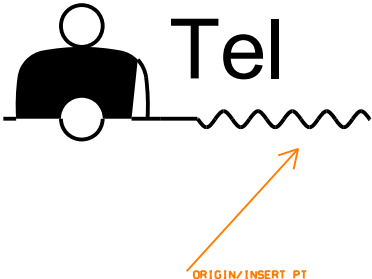
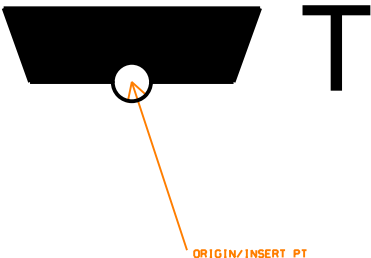
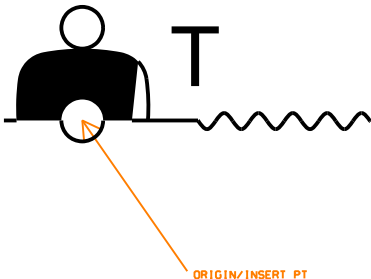
5 Survey/Mapping Symbols Library

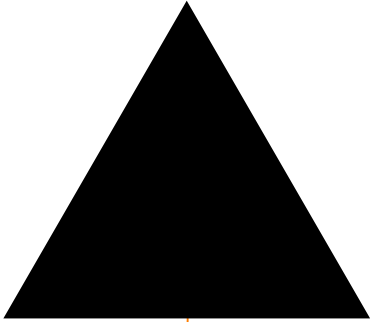
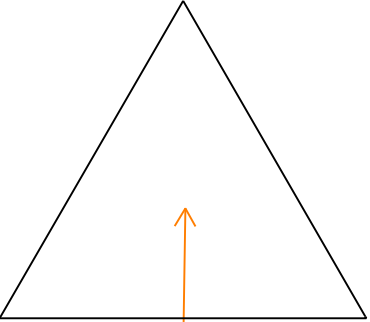
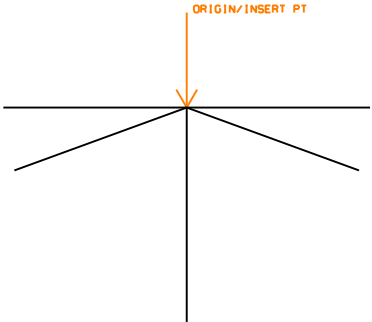
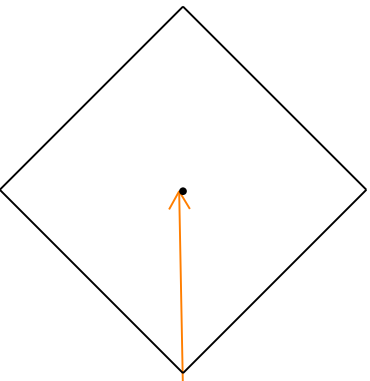
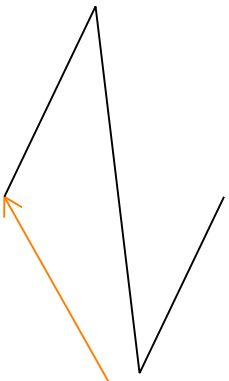
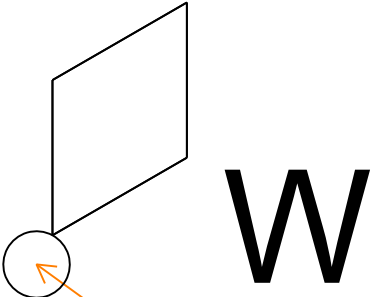
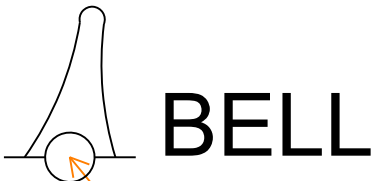
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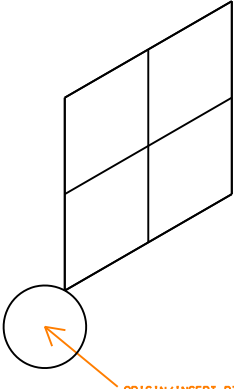
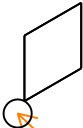
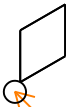
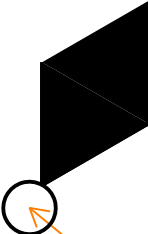
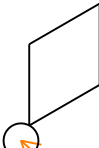
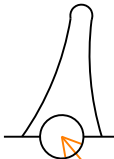
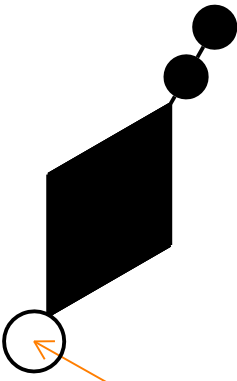
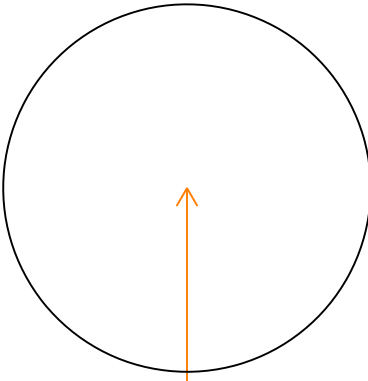
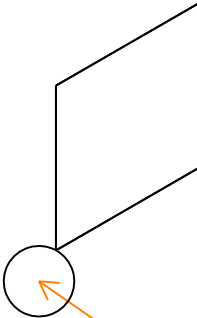
		
Survey/Mapping: ACLLEL APPROACH LIGHTBAR_ELEVATED Element type: Symbol	Survey/Mapping: ACLLSF APPROACH LIGHTBAR_SEMIFLUSH Element type: Symbol	Survey/Mapping: AERO SEAPLANE ANCHORAGE BUOY Element type: Symbol
		
Survey/Mapping: AFBCN AIRFIELD BEACON Element type: Symbol	Survey/Mapping: AIRFLD AIRFIELD SYMBOL Element type: Symbol	Survey/Mapping: ANCHR1 ANCHORAGE LARGE VESSEL Element type: Symbol
		
Survey/Mapping: ANCHR2 ANCHORAGE LARGE VESSEL Element type: Symbol	Survey/Mapping: ANCHR3 ANCHORAGE SMALL VESSEL Element type: Symbol	Survey/Mapping: ANCHR4 ANCHORAGE SMALL VESSEL Element type: Symbol

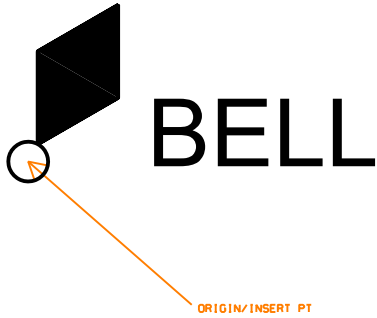
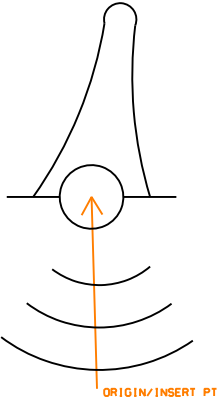
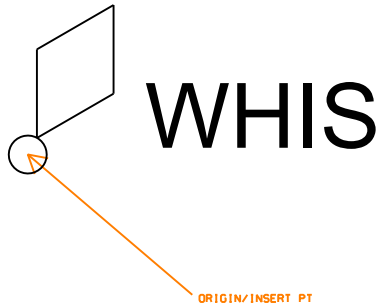
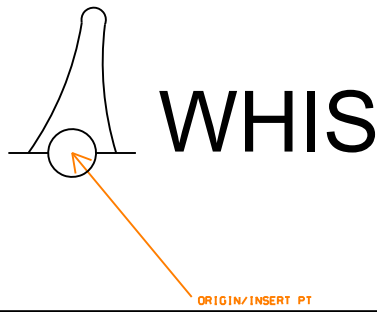
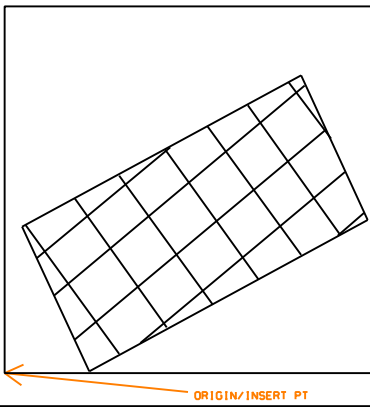
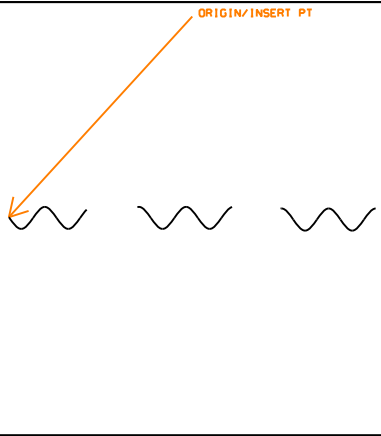
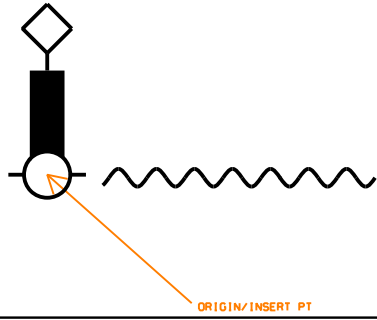
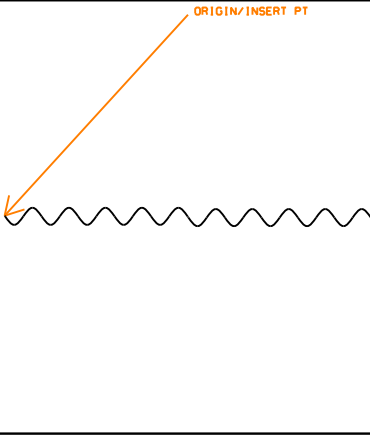
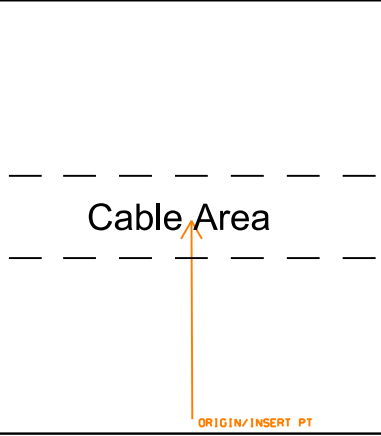
		
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Survey/Mapping: BAR1 BARREL BUOY Element type: Symbol	Survey/Mapping: BAR1C BARREL BUOY INDICATE COLOR Element type: Symbol	Survey/Mapping: BAR2 BARREL BUOY Element type: Symbol
		
Survey/Mapping: BARD DIAG STRIPE BARREL BUOY Element type: Symbol	Survey/Mapping: BARLT1 LIGHTED BARREL BUOY Element type: Symbol	Survey/Mapping: BARLT2 LIGHTED BARREL BUOY Element type: Symbol

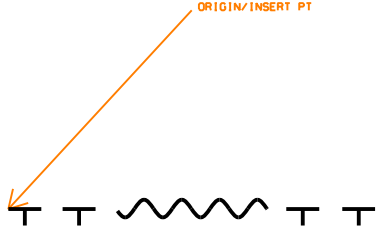
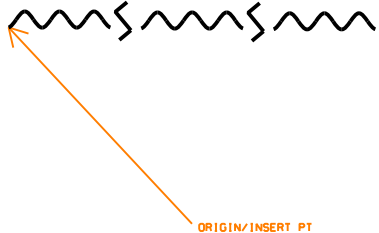
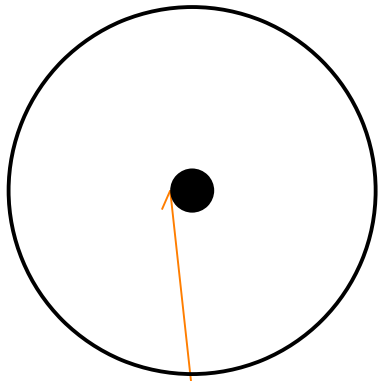
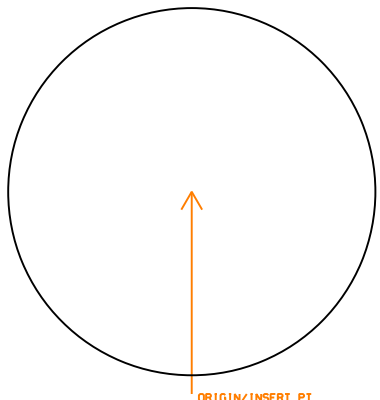
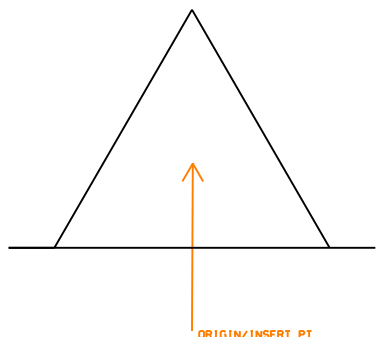
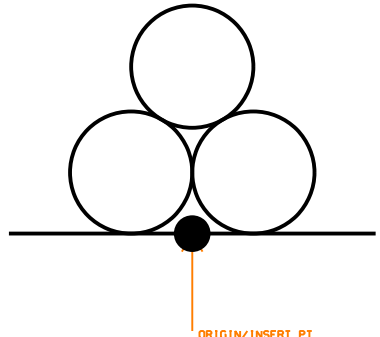
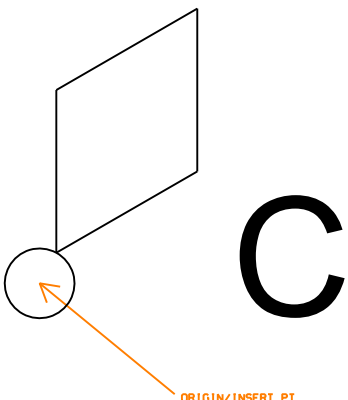
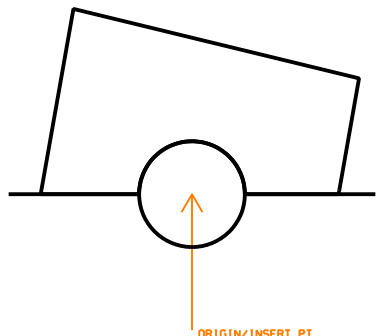
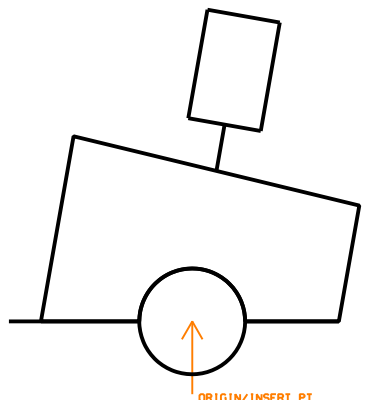
		
Survey/Mapping: BARMKR BARRIER MARKER Element type: Symbol	Survey/Mapping: BARV VERT STRIPE BARREL BUOY Element type: Symbol	Survey/Mapping: BARVT V STRP BARREL BUOY W TOPMK Element type: Symbol
		
Survey/Mapping: BCN1 GENERAL BEACON Element type: Symbol	Survey/Mapping: BCN2 GENERAL BEACON Element type: Symbol	Survey/Mapping: BCN3 GENERAL BEACON Element type: Symbol
		
Survey/Mapping: BCN4 GENERAL BEACON Element type: Symbol	Survey/Mapping: BCN5 GENERAL BEACON Element type: Symbol	Survey/Mapping: BCNBY1 BUOYANT BEACON Element type: Symbol

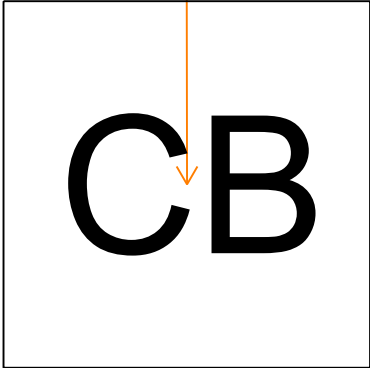
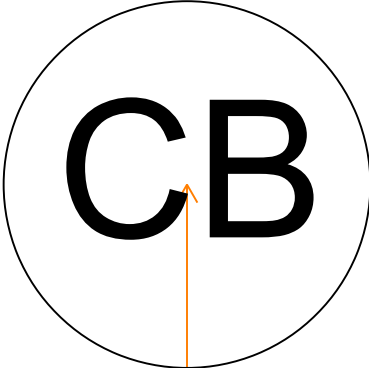
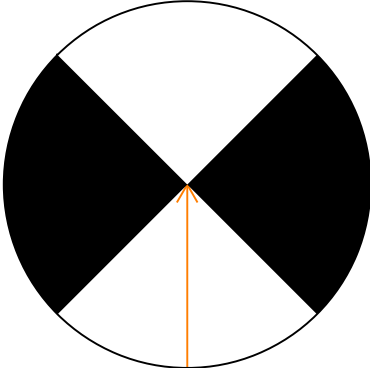
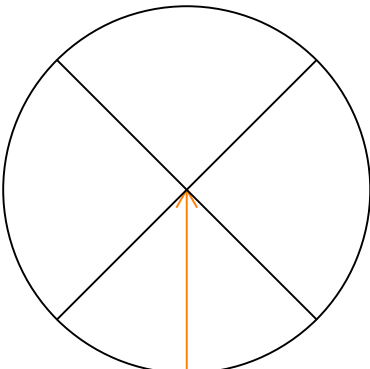
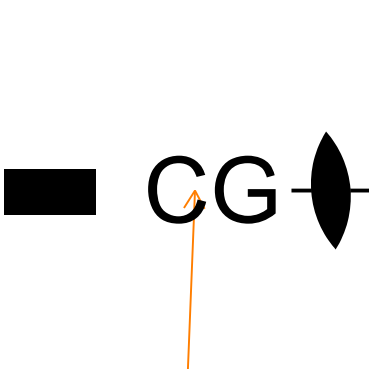
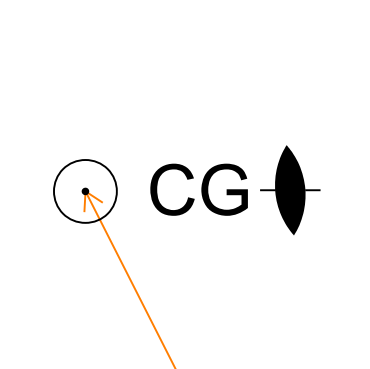
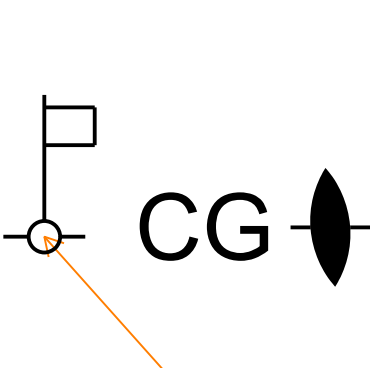
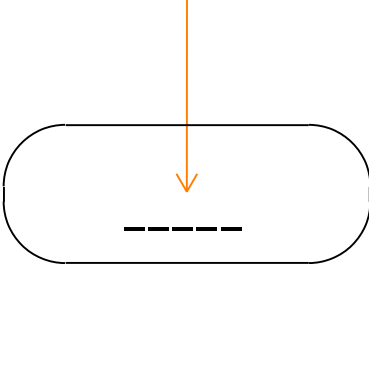
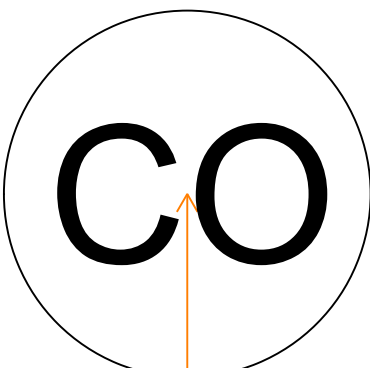
		
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Survey/Mapping: BCNTG2 TELEGRAPHIC MOORING BEACON Element type: Symbol	Survey/Mapping: BCNTP1 TELEPHONIC MOORING BEACON Element type: Symbol	Survey/Mapping: BCNTP2 TELEPHONIC MOORING BEACON Element type: Symbol

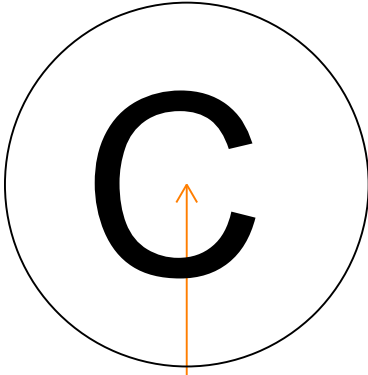
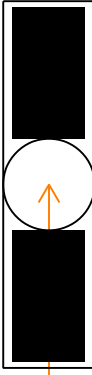
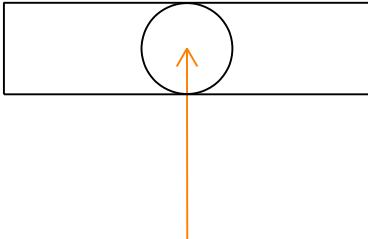
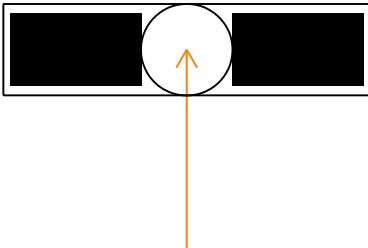
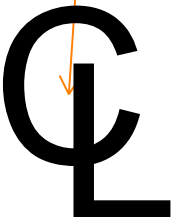
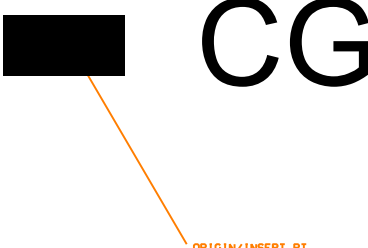
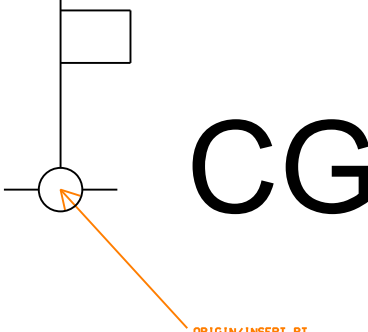
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Survey/Mapping: BCNTR1 TRIANGULAR BEACON Element type: Symbol	Survey/Mapping: BCNTR2 TRIANGULAR BEACON Element type: Symbol	Survey/Mapping: BM BENCH MARK Element type: Symbol
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Survey/Mapping: BMALT BENCH MARK ALTERNATE Element type: Symbol	Survey/Mapping: BNDMRK BOUNDARY MARK Element type: Symbol	Survey/Mapping: BREAK BREAK LINE SYMBOL Element type: Symbol
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
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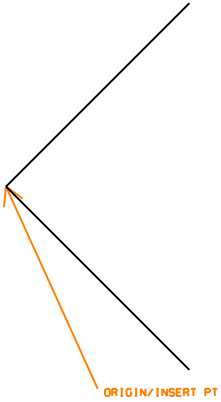
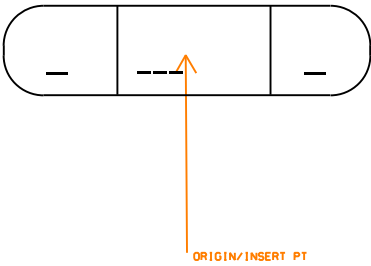
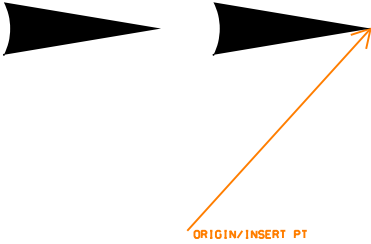
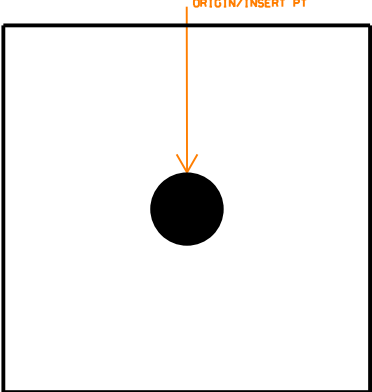
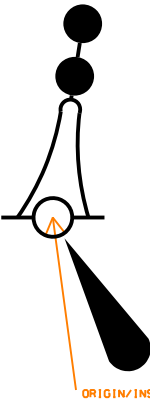
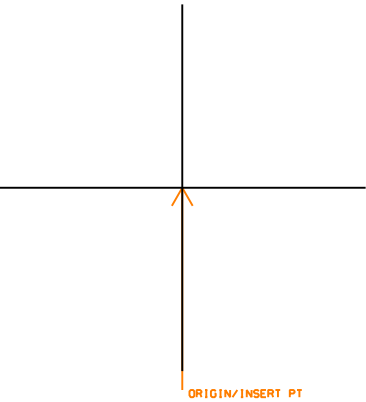
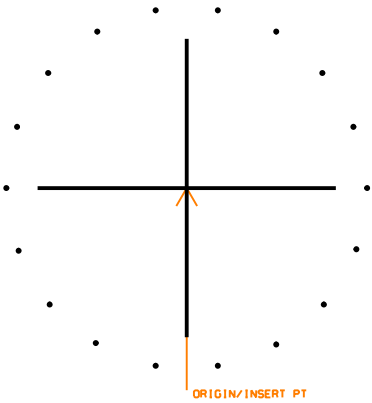
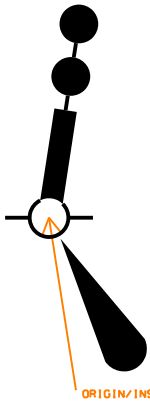
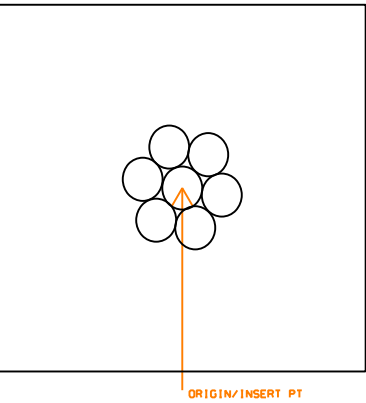
	 Deviation	 Explos Anch
Survey/Mapping: BYCHEC CHECKERED BUOY Element type: Symbol	Survey/Mapping: BYCOMP COMPASS ADJUSTMENT BUOY Element type: Symbol	Survey/Mapping: BYEXPL EXPLOSIVE ANCHORAGE BUOY Element type: Symbol
 BW	 GONG	 GONG
Survey/Mapping: BYFISH FISH TRAP BUOY Element type: Symbol	Survey/Mapping: BYGONB GONG BARREL BUOY Element type: Symbol	Survey/Mapping: BYGONP GONG PILLAR BUOY Element type: Symbol
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Survey/Mapping: BYJUNC JUNCTION BUOY Element type: Symbol	Survey/Mapping: BYPOS POSITION OF BUOY Element type: Symbol	Survey/Mapping: BYQUAR QUARANTINE BUOY Element type: Symbol

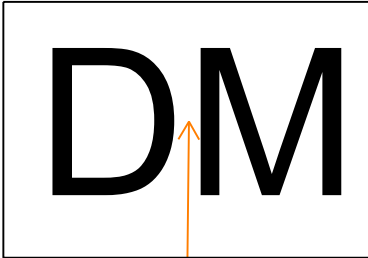
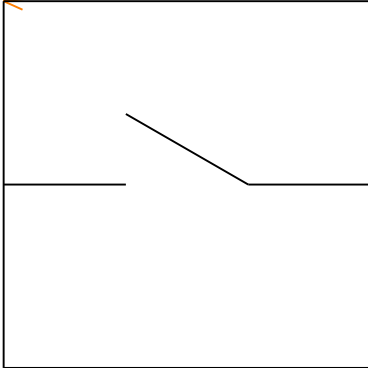
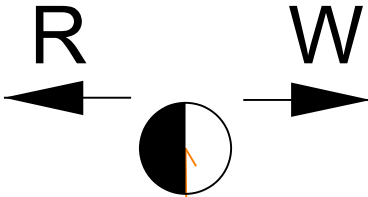
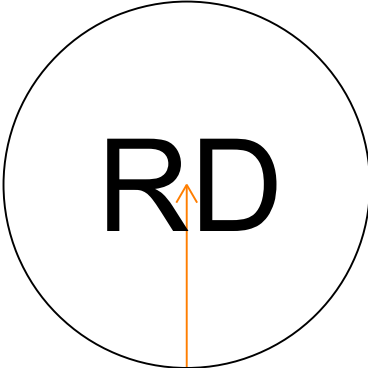
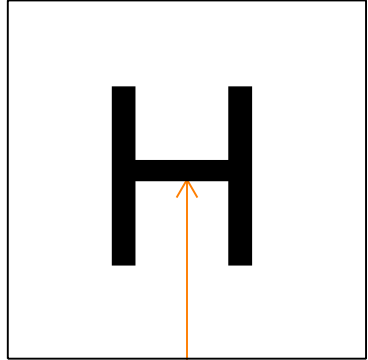
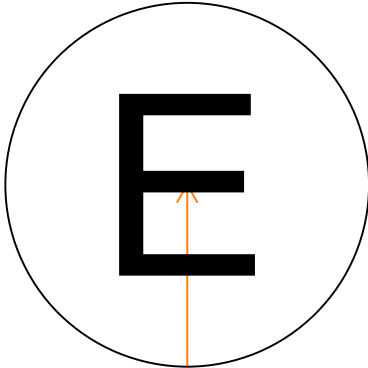
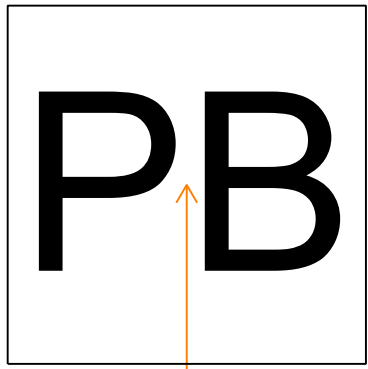
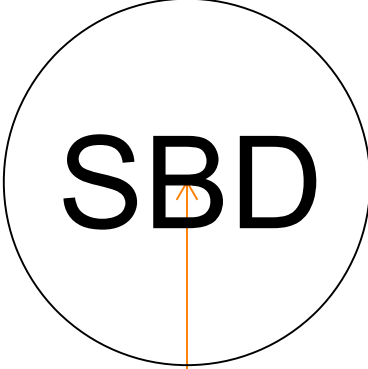
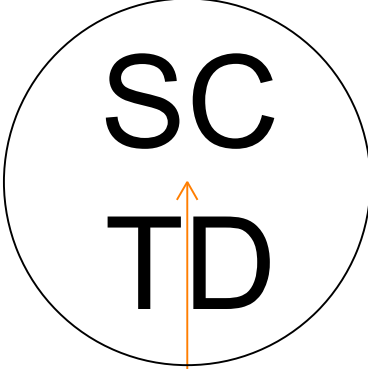
 BELL	 WHIS	 WHIS
Survey/Mapping: BYWAV1 WAVE ACTUATED BELL BUOY Element type: Symbol	Survey/Mapping: BYWAV2 WAVE ACTUATED BELL BUOY Element type: Symbol	Survey/Mapping: BYWHIB WHISTLE BARREL BUOY Element type: Symbol
 WHIS	 CABLE	 CABLE
Survey/Mapping: BYWHIP WHISTLE PILLAR BUOY Element type: Symbol	Survey/Mapping: CABCNZ CABLE CROSSING ZONE Element type: Symbol	Survey/Mapping: CABDIS DISUSED SUBMARINE CABLE Element type: Symbol
 CABLE	 CABLE	 Cable Area
Survey/Mapping: CABLAN CABLE LANDING BEACON Element type: Symbol	Survey/Mapping: CABLE SUBMARINE CABLE Element type: Symbol	Survey/Mapping: CABLE1 SUBMARINE CABLE AREA Element type: Symbol

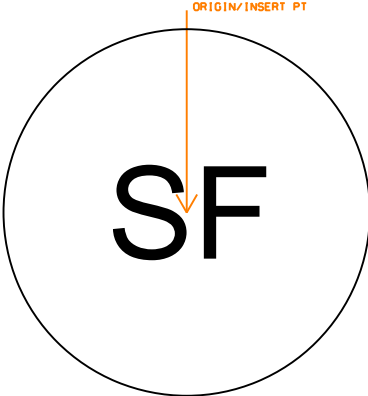
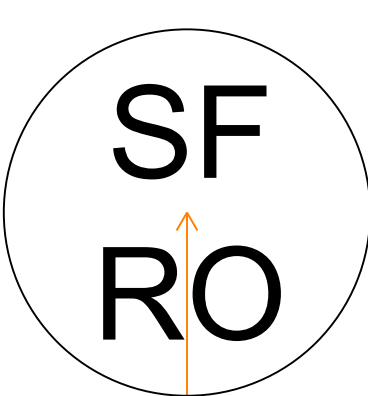
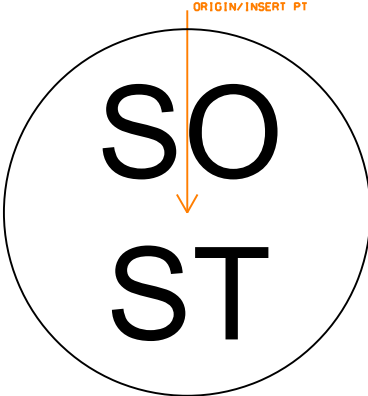
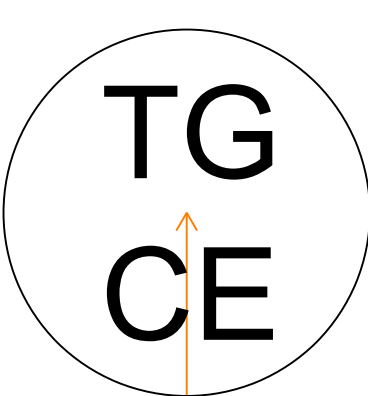
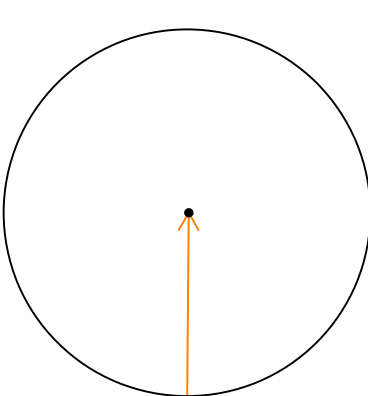
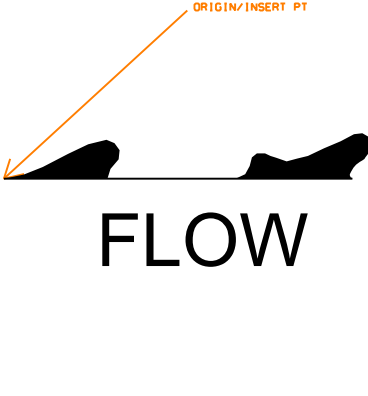
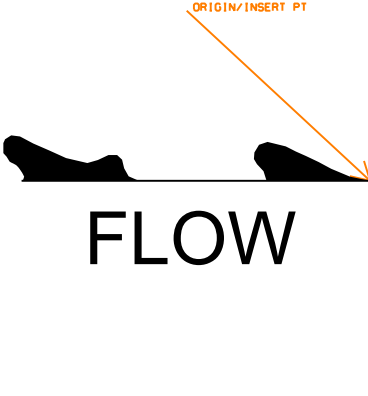
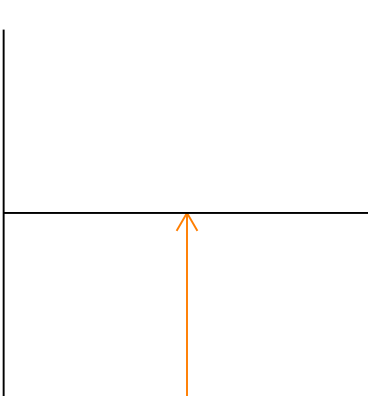
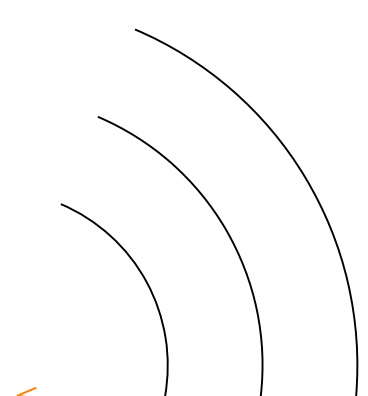
		
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Survey/Mapping: CAIRN2 CAIRN Element type: Symbol	Survey/Mapping: CAIRN3 CAIRN Element type: Symbol	Survey/Mapping: CAIRN4 CAIRN Element type: Symbol
		
Survey/Mapping: CAN1 CAN BUOY Element type: Symbol	Survey/Mapping: CAN2 CAN BUOY Element type: Symbol	Survey/Mapping: CANWT WHITE CAN BUOY W TOPMARK Element type: Symbol

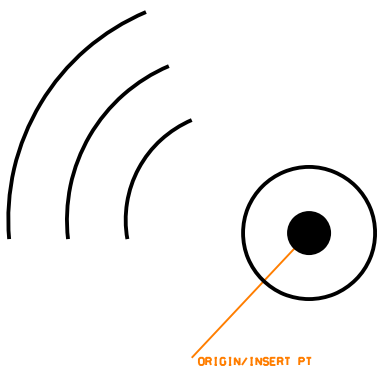
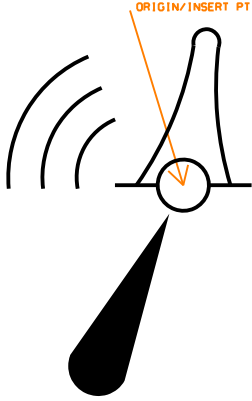
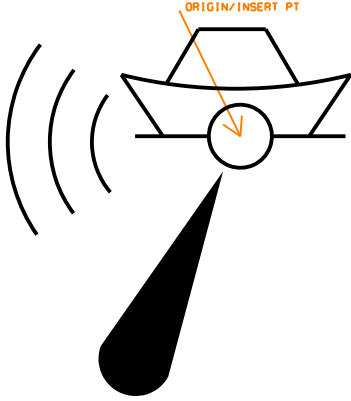
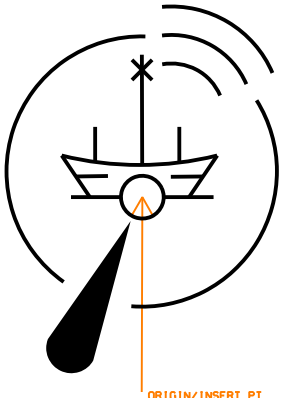
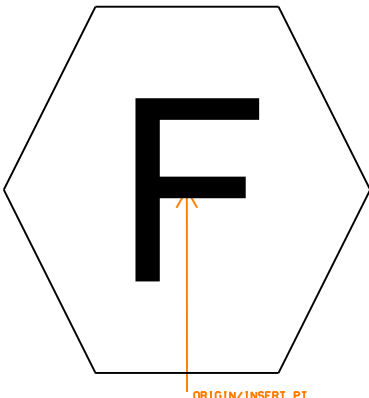
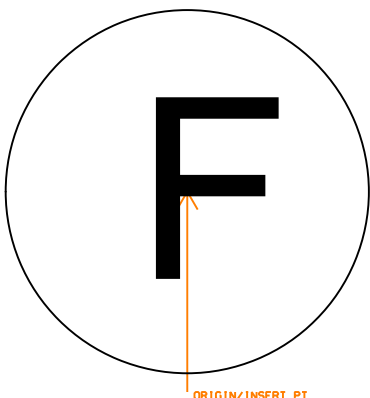
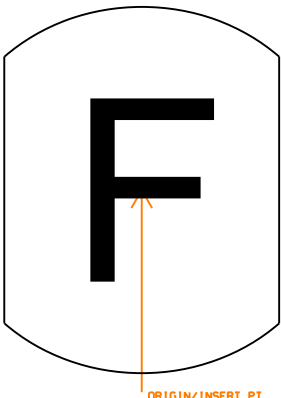
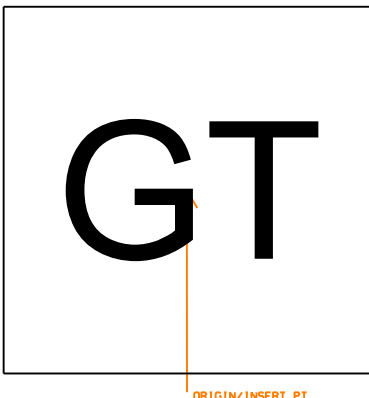
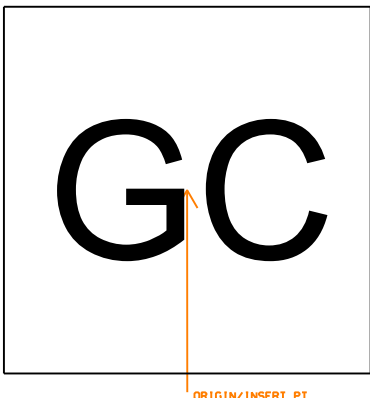
		
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Survey/Mapping: CDHUSR CORE DRILL HOLE UNDRILLED Element type: Symbol	Survey/Mapping: CGRES1 COAST GUARD RESCUE STA Element type: Symbol	Survey/Mapping: CGRES2 COAST GUARD RESCUE STA Element type: Symbol
		
Survey/Mapping: CGRES3 COAST GUARD RESCUE STA Element type: Symbol	Survey/Mapping: CKTID CIRCUIT ID SYMBOL Element type: Symbol	Survey/Mapping: CLNOUT CLEANOUT Element type: Symbol

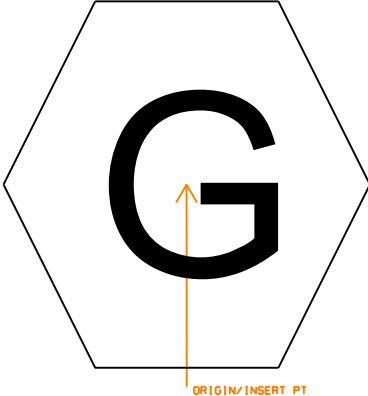
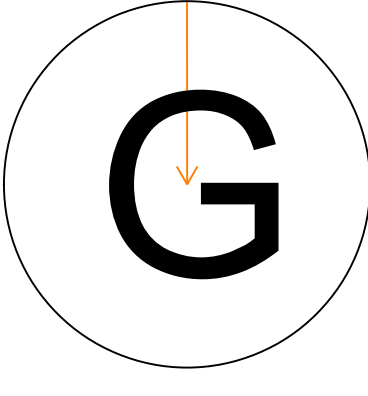
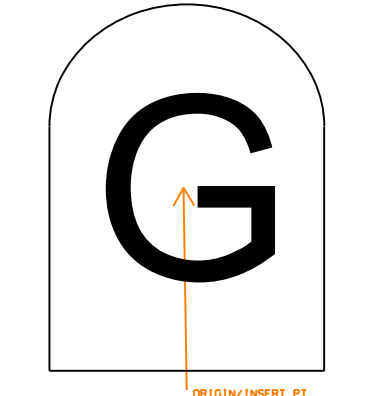
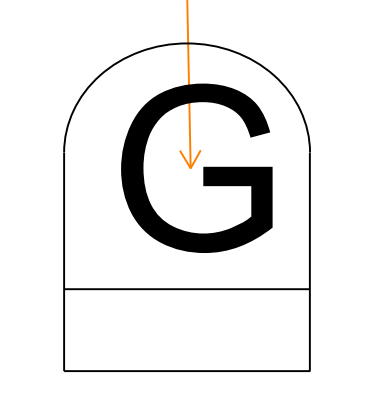
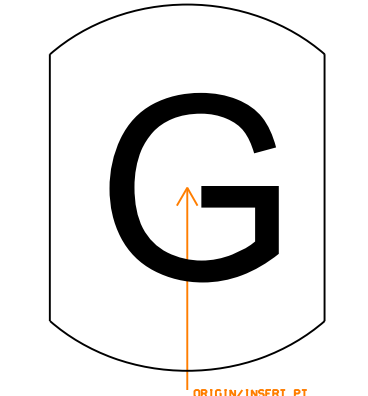
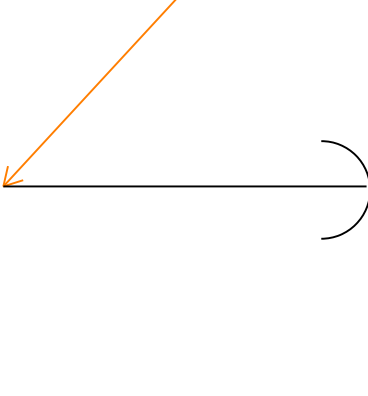
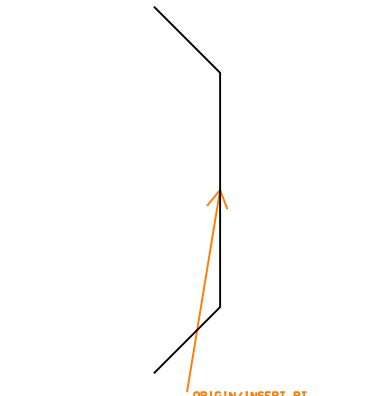
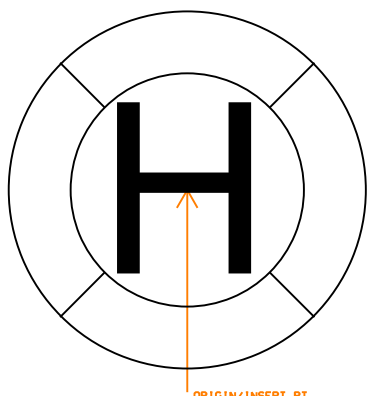
		
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Survey/Mapping: CNRSF CORNER SOLID FLAT Element type: Symbol	Survey/Mapping: CNTLIN CENTERLINE SYMBOL Element type: Symbol	Survey/Mapping: COAST1 COAST GUARD STATION Element type: Symbol
		
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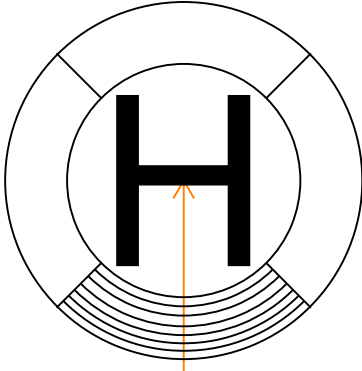
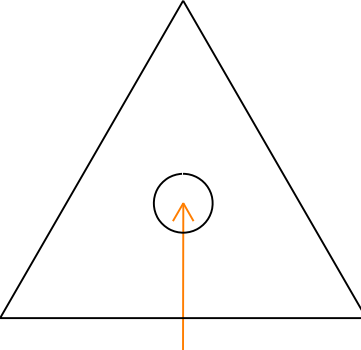
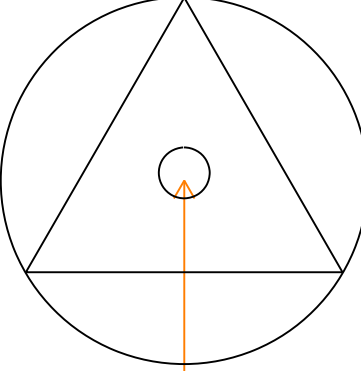
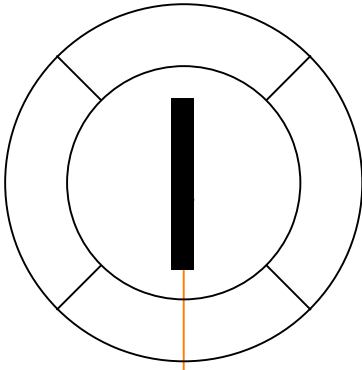
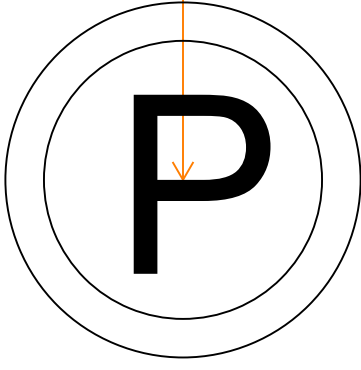
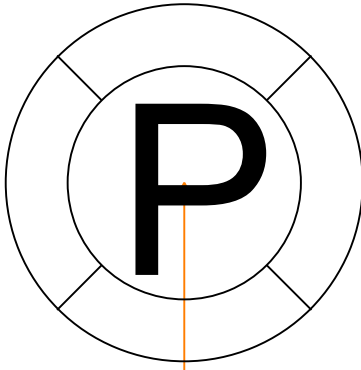
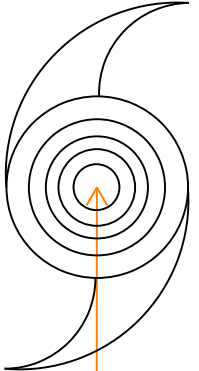
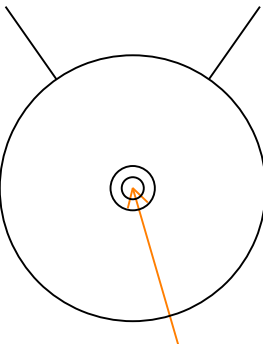
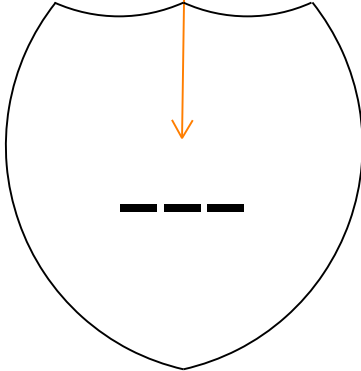
		
Survey/Mapping: CULVEE CULVERT END SYMBOL Element type: Symbol	Survey/Mapping: DBID DUCTBANK ID SYMBOL Element type: Symbol	Survey/Mapping: DBLARR DOUBLE ARROW TERMINATOR Element type: Symbol
		
Survey/Mapping: DISPLT DISUSED PLATFORM Element type: Symbol	Survey/Mapping: DNGPB LIGHTED DANGER BUOY PILLAR Element type: Symbol	Survey/Mapping: DNGRK DANGER U W ROCK DEPTH UNKNW Element type: Symbol
		
Survey/Mapping: DNGRK1 DANGER U W ROCK DEPTH UNKNW Element type: Symbol	Survey/Mapping: DNGSB LIGHTED DANGER BUOY SPAR Element type: Symbol	Survey/Mapping: DOLPHN DOLPHIN Element type: Symbol

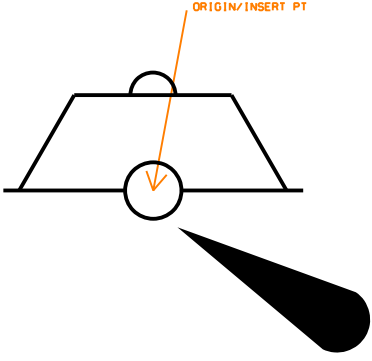
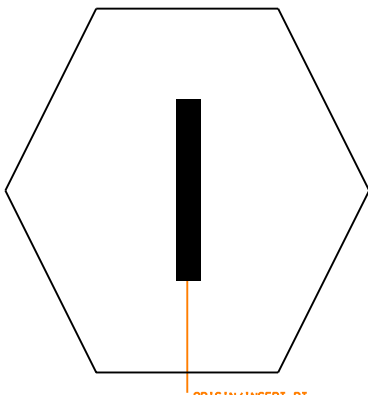
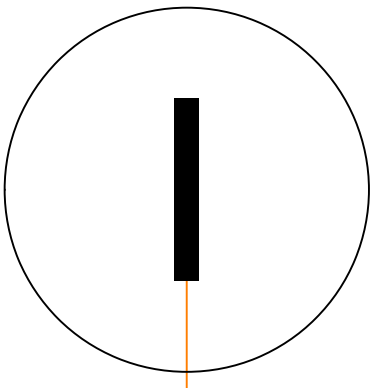
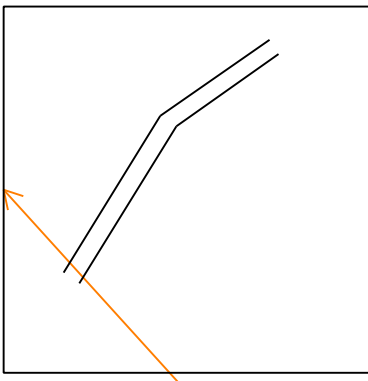
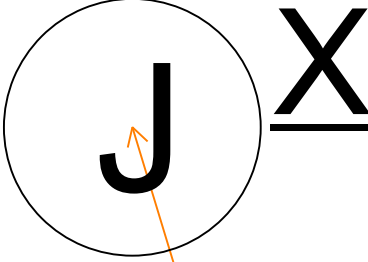
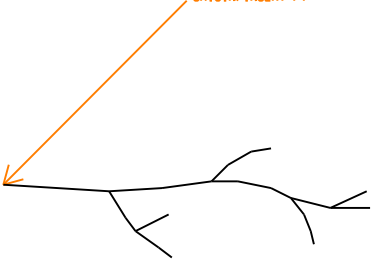
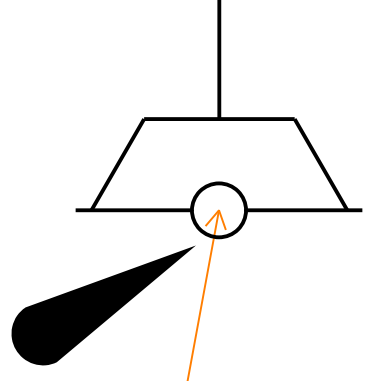
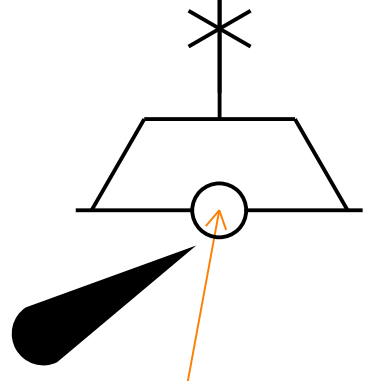
		
Survey/Mapping: DSTMKR RW DISTANCE MARKER Element type: Symbol	Survey/Mapping: DSWTCH DIST SWITCH SWITCHING STAT Element type: Symbol	Survey/Mapping: DTHL DISPLACE THRESHOLD LIGHT Element type: Symbol
		
Survey/Mapping: ECRD ROCK DAM SEDIMENT TRAP Element type: Symbol	Survey/Mapping: EHANDH ELECTRICAL HANDHOLE Element type: Symbol	Survey/Mapping: EMANH ELECTRICAL MANHOLE Element type: Symbol
		
Survey/Mapping: EPULLB ELECTRICAL PULLBOX Element type: Symbol	Survey/Mapping: ERSBD STRAW BALE DAM Element type: Symbol	Survey/Mapping: ERSCTD SEDIMENT CTRL TMPRY DIVERSION Element type: Symbol

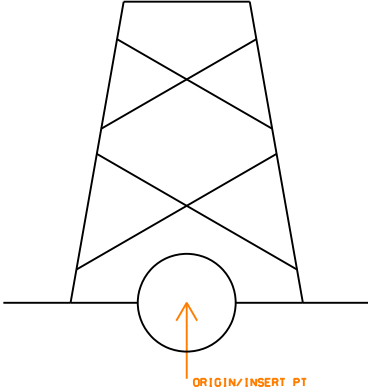
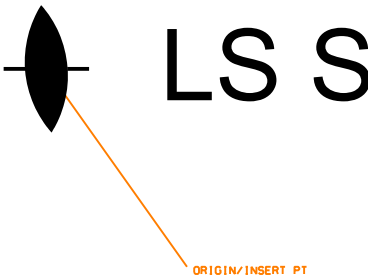
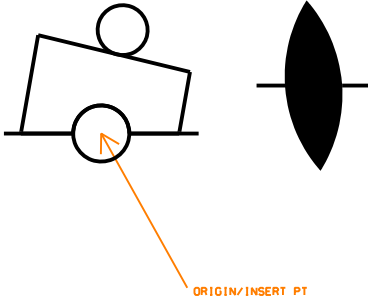
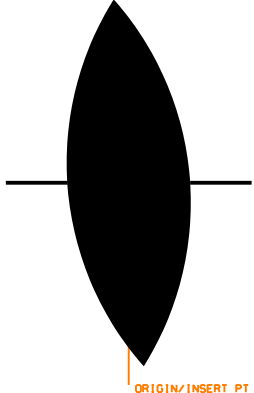
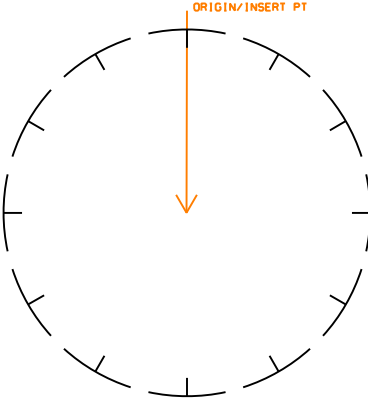
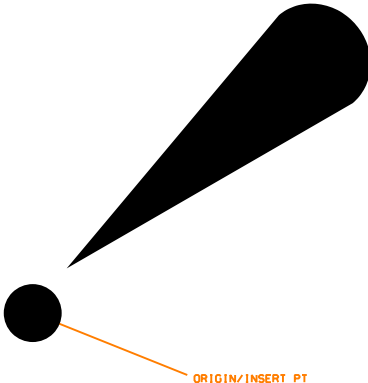
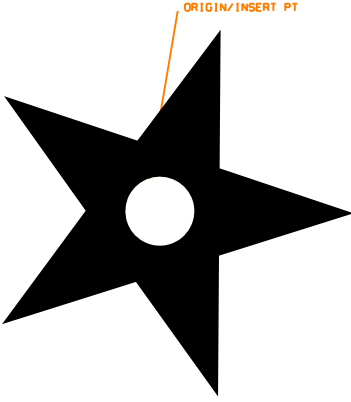
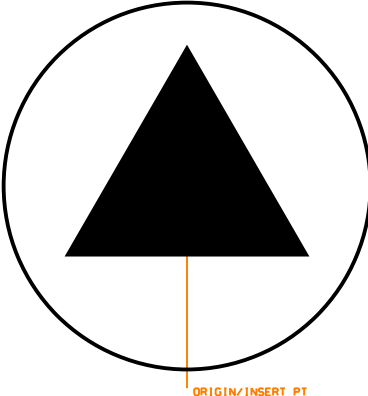
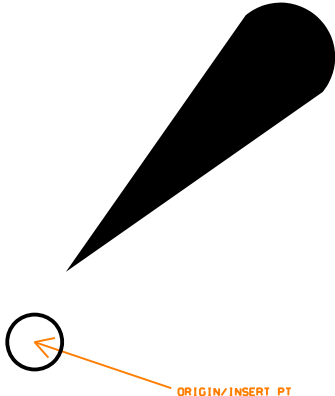
		
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Survey/Mapping: ERTGCE CONSTRUCTION ENTRANCE EXIT Element type: Symbol	Survey/Mapping: FIXPNT FIXED POINT Element type: Symbol	Survey/Mapping: FLARRL FLOW ARROW LEFT IN 0 POINT Element type: Symbol
		
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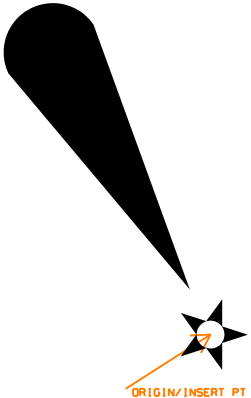
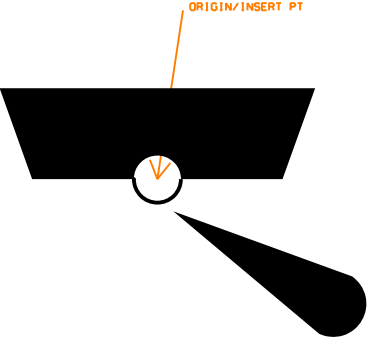
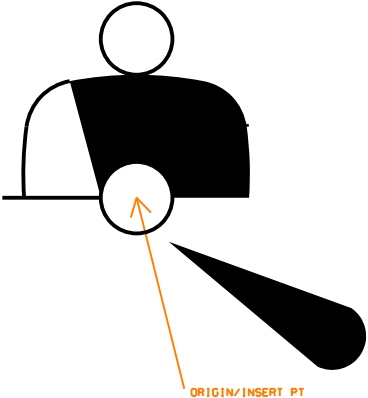
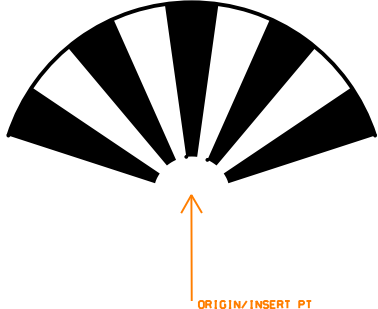
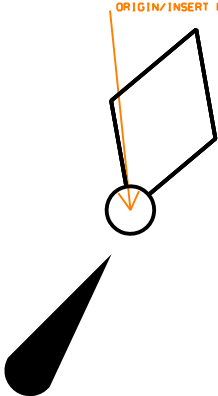
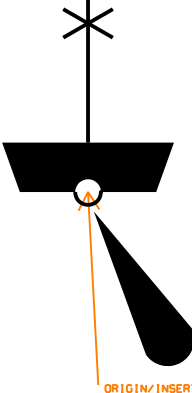
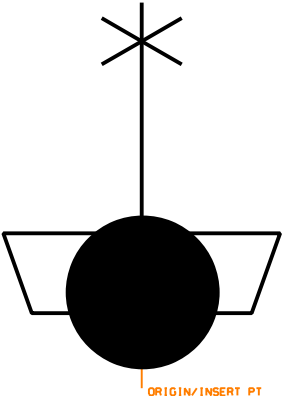
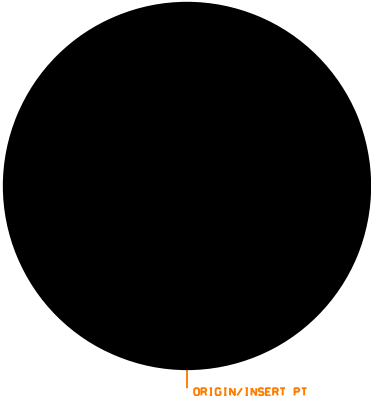
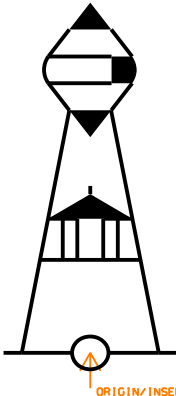
		
Survey/Mapping: FOGBCN FOG SIGNAL BEACON Element type: Symbol	Survey/Mapping: FOGBY FOG SIGNAL BUOY Element type: Symbol	Survey/Mapping: FOGLS FOG SIGNAL LIGHT SHIP Element type: Symbol
		
Survey/Mapping: FOGLSM FOG SIG LIGHT SHIP MANNED Element type: Symbol	Survey/Mapping: FOMETR FUEL OIL METER Element type: Symbol	Survey/Mapping: FOMHOL FUEL OIL MANHOLE Element type: Symbol
		
Survey/Mapping: FOVALT FUEL OIL VAULT Element type: Symbol	Survey/Mapping: GREASE GREASE TRAP Element type: Symbol	Survey/Mapping: GRITCH GRIT CHAMBER Element type: Symbol

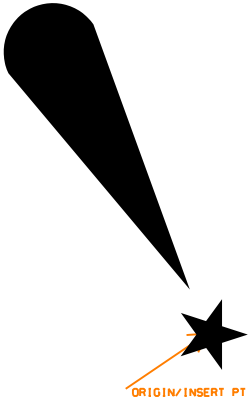
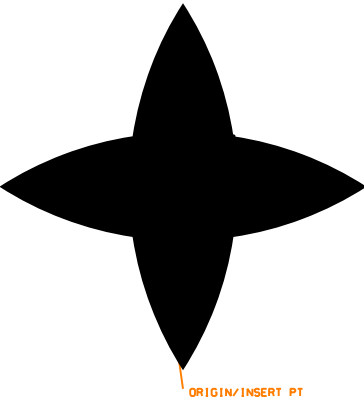
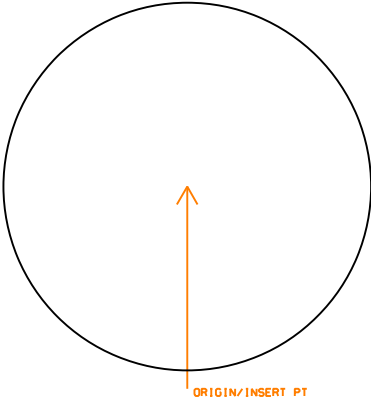
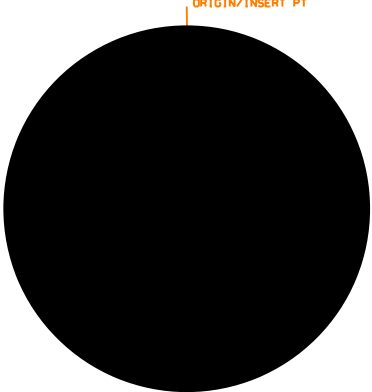
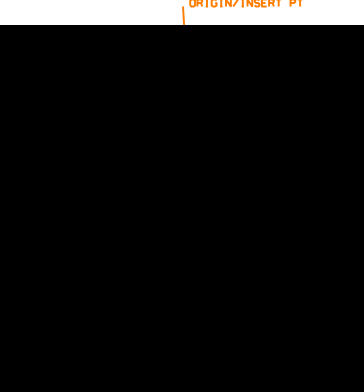
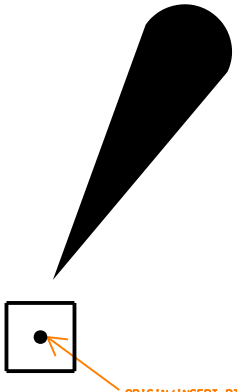
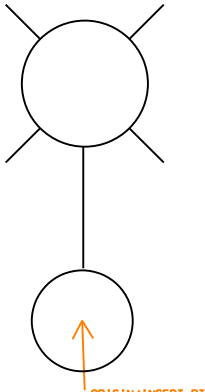
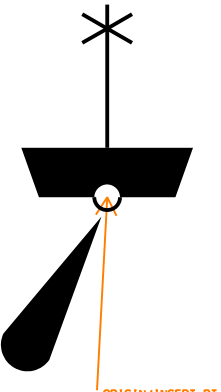
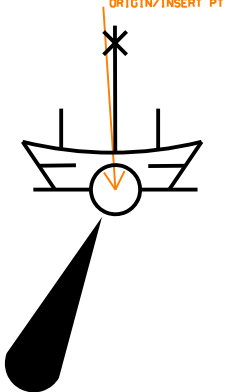
		
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Survey/Mapping: GSRECR NATURAL GAS RECEIVER Element type: Symbol	Survey/Mapping: GSTRAP NATURAL GAS TRAP Element type: Symbol	Survey/Mapping: GSVALT GAS VALVE VAULT Element type: Symbol
		
Survey/Mapping: GUYWR GUY WIRE Element type: Symbol	Survey/Mapping: HEADWL HEADWALL Element type: Symbol	Survey/Mapping: HLL HOVERLANE Element type: Symbol

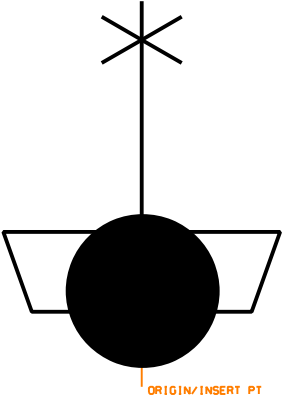
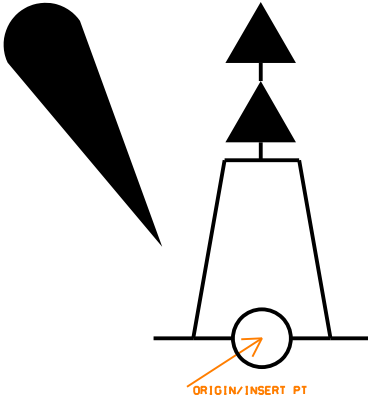
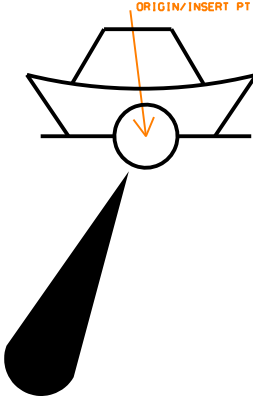
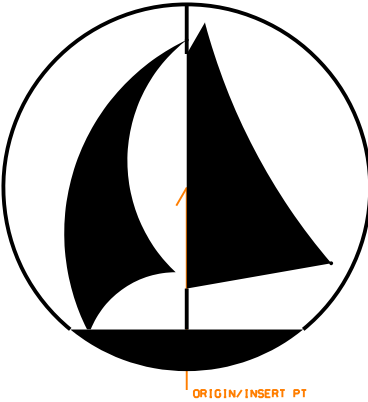
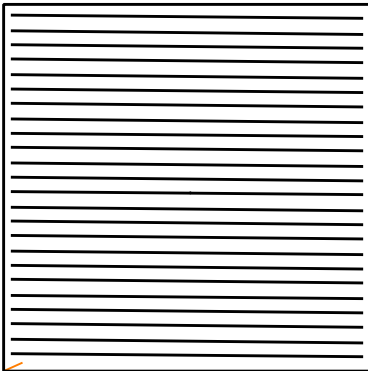
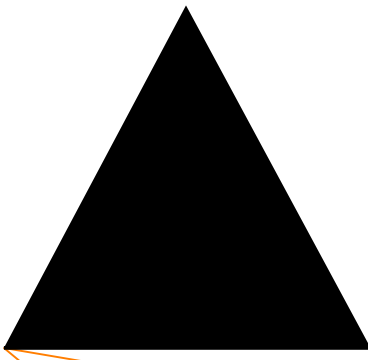
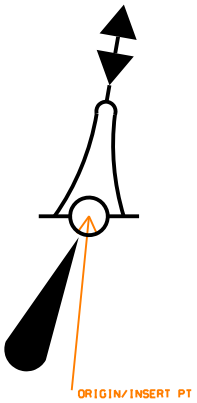
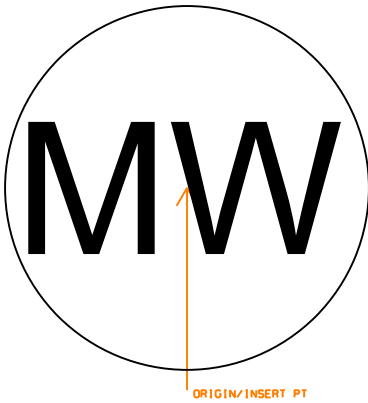
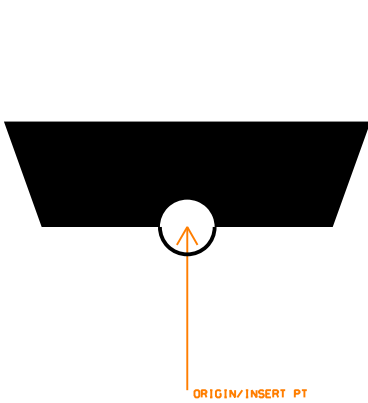
		
Survey/Mapping: HLLL HOVERLANE LIMIT LIGHT Element type: Symbol	Survey/Mapping: HORCPT HORIZONTAL CONTROL PT Element type: Symbol	Survey/Mapping: HOVCPT HORIZ VERT CONTROL PT Element type: Symbol
		
Survey/Mapping: HPIL HELIPAD INSET LIGHT Element type: Symbol	Survey/Mapping: HPLEL HELIPAD PER LIGHT ELEVATED Element type: Symbol	Survey/Mapping: HPPLSF HELIPAD PER LIGHT SEMIFLUSH Element type: Symbol
		
Survey/Mapping: HUREYE HURRICANE EYE Element type: Symbol	Survey/Mapping: HYDRNT FIRE HYDRANT Element type: Symbol	Survey/Mapping: INSHWY INTERSTATE HIGHWAY SYMBOL Element type: Symbol

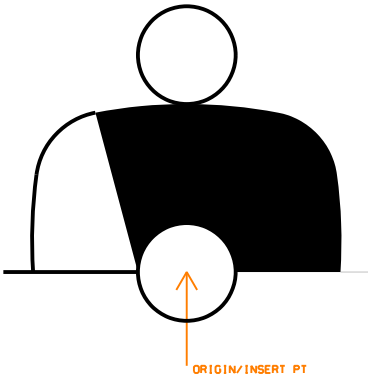
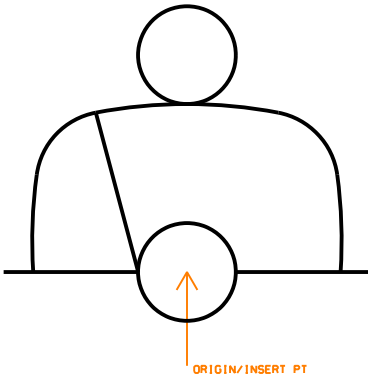
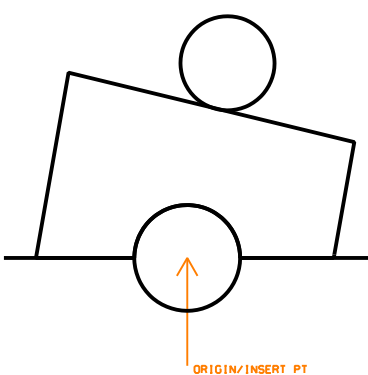
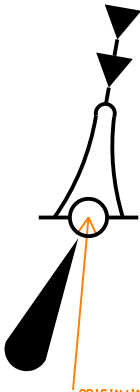
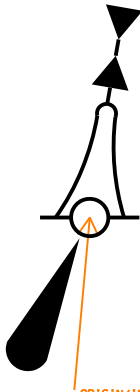
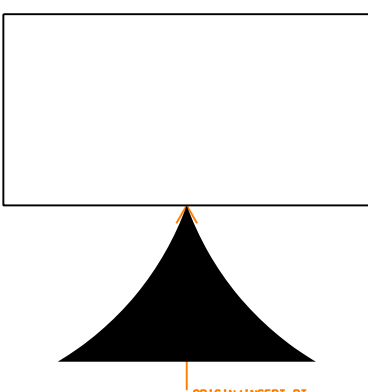
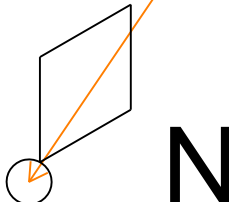
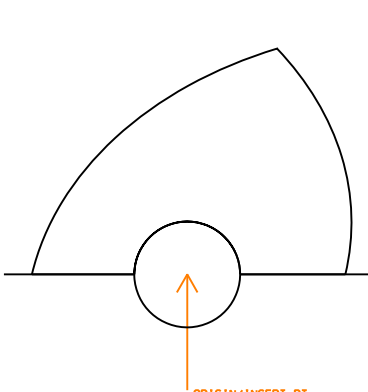
		
Survey/Mapping: INSTBY OIL GAS INSTALL BUOY Element type: Symbol	Survey/Mapping: IPC IRON PIN AND CAP Element type: Symbol	Survey/Mapping: IWMETR INDUSTRIAL WASTE WATER METER Element type: Symbol
		
Survey/Mapping: IWMHOL INDUSTRIAL WASTE WATER MANHOLE Element type: Symbol	Survey/Mapping: JETTY JETTY Element type: Symbol	Survey/Mapping: JNBX EXTERIOR UTIL JUNCTION BOX Element type: Symbol
		
Survey/Mapping: KELP KELP SEAWEED Element type: Symbol	Survey/Mapping: LANBY1 LANBY SUPERBUOY NAVAID Element type: Symbol	Survey/Mapping: LANBY2 LANBY SUPERBUOY NAVAID Element type: Symbol

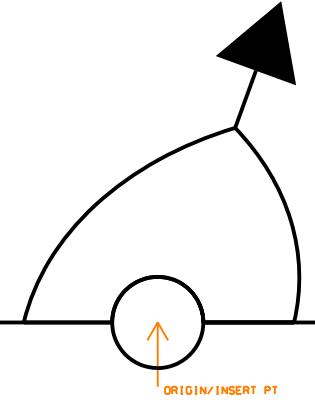
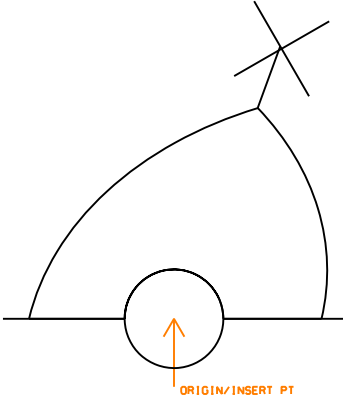
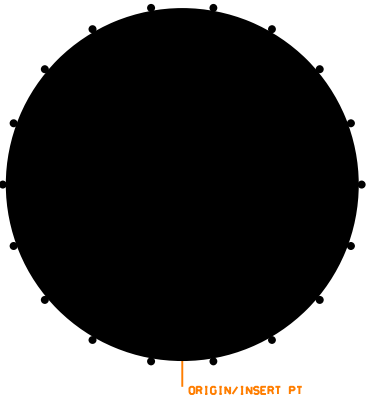
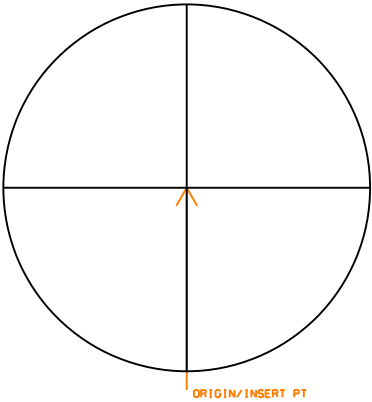
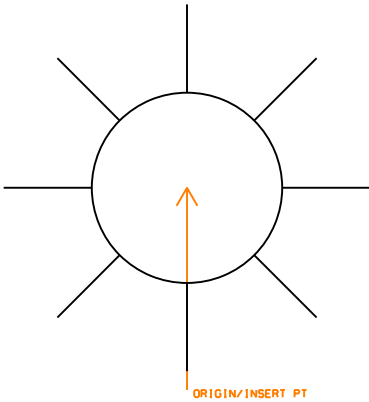
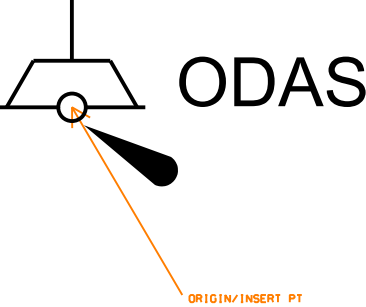
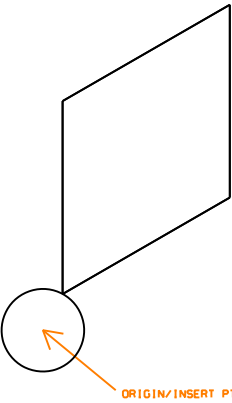
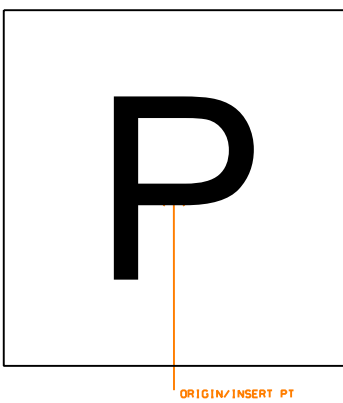
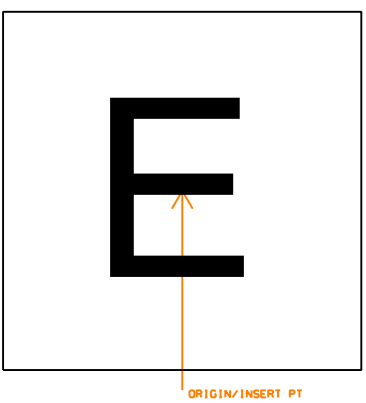
		
Survey/Mapping: LATBCN LATTICE BEACON Element type: Symbol	Survey/Mapping: LIFEFT LIFEBOAT STATION Element type: Symbol	Survey/Mapping: LIFEM1 LIFEBOAT AT MOORING Element type: Symbol
		
Survey/Mapping: LIFEM2 LIFEBOAT AT MOORING Element type: Symbol	Survey/Mapping: LIMIT LIMIT OF SAFETY ZONE Element type: Symbol	Survey/Mapping: LITSV1 FLOATING LIGHT Element type: Symbol
		
Survey/Mapping: LITSV2 FLOATING LIGHT Element type: Symbol	Survey/Mapping: LOOKTR LOOKOUT STATION WATCH Element type: Symbol	Survey/Mapping: LTART ARTICULATED LIGHT Element type: Symbol

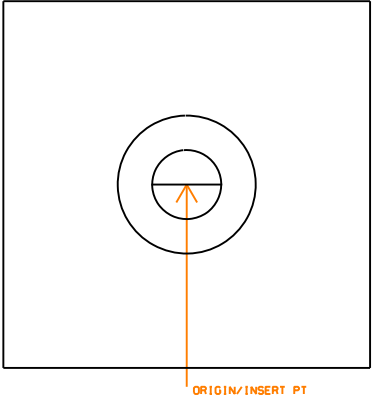
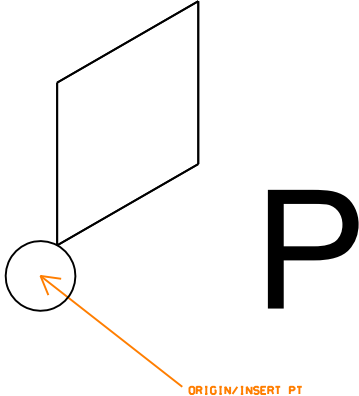
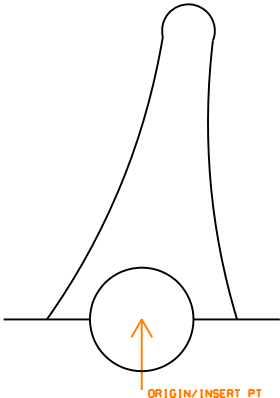
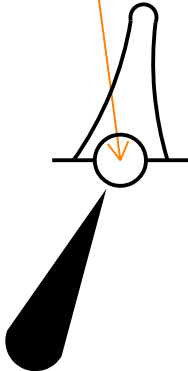
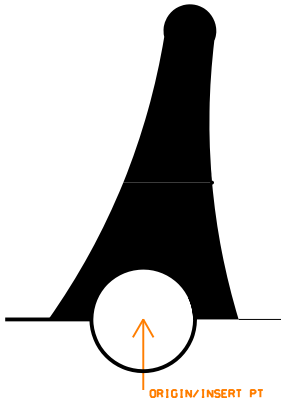
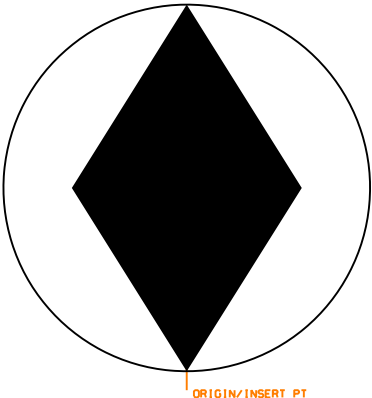
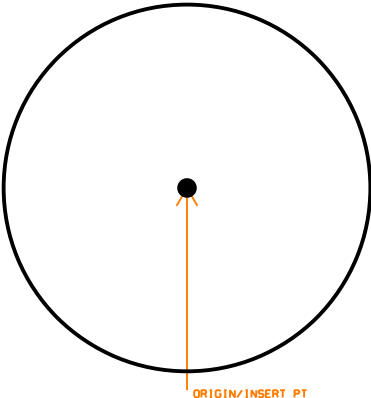
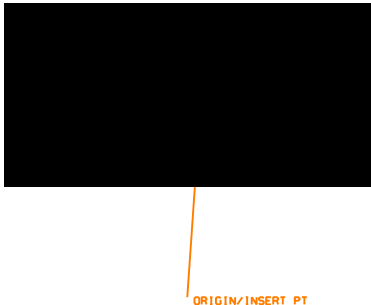
		
Survey/Mapping: LTBEAC LIGHTED BEACON Element type: Symbol	Survey/Mapping: LTBY LIGHTED BUOY Element type: Symbol	Survey/Mapping: LTBYBB LIGHTED BARREL BUOY BLACK Element type: Symbol
		
Survey/Mapping: LTFLD FLOODLIGHT Element type: Symbol	Survey/Mapping: LTFLT LIGHT FLOAT Element type: Symbol	Survey/Mapping: LTFLT1 LIGHT FLOAT IALA Element type: Symbol
		
Survey/Mapping: LTFLT2 LIGHT FLOAT IALA Element type: Symbol	Survey/Mapping: LTHOU1 LIGHTHOUSE Element type: Symbol	Survey/Mapping: LTHOU2 LIGHTHOUSE Element type: Symbol

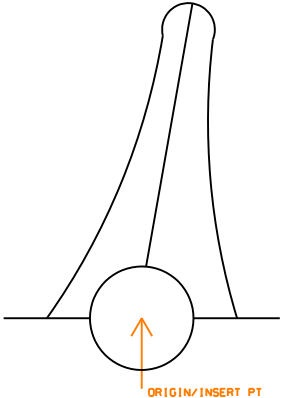
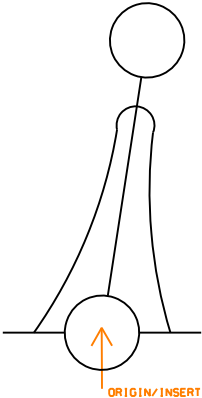
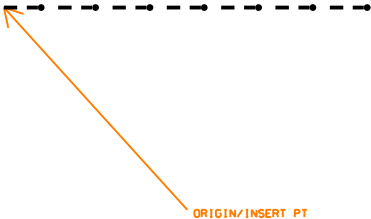
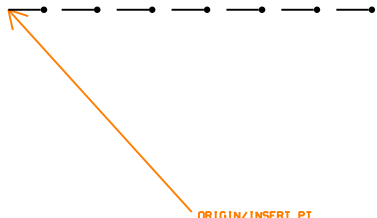
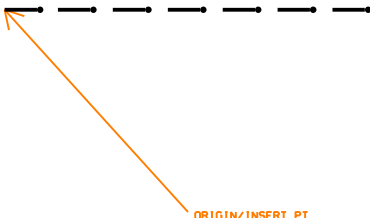
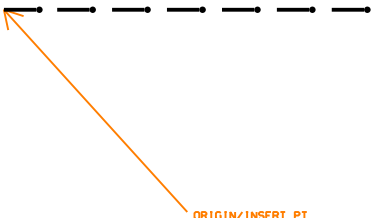
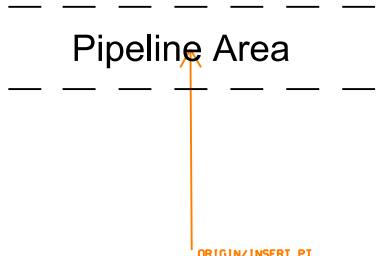
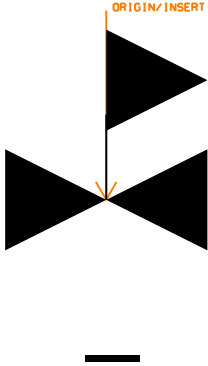
		
Survey/Mapping: LTMAJ1 MAJOR FLOATING LIGHT Element type: Symbol	Survey/Mapping: LTMAJ2 MAJOR FLOATING LIGHT Element type: Symbol	Survey/Mapping: LTMARK LIGHTED MARKER Element type: Symbol
		
Survey/Mapping: LTMIN2 MINOR FLOATING LIGHT Element type: Symbol	Survey/Mapping: LTPLT1 LIGHTED PLATFORM Element type: Symbol	Survey/Mapping: LTPLT2 LIGHTED PLATFORM Element type: Symbol
		
Survey/Mapping: LTPLX LIGHT POLE, EXISTING Element type: Symbol	Survey/Mapping: LTSHP1 LIGHTED VESSEL, LIGHTSHIP Element type: Symbol	Survey/Mapping: LTSHP2 LIGHTED VESSEL, LIGHTSHIP Element type: Symbol

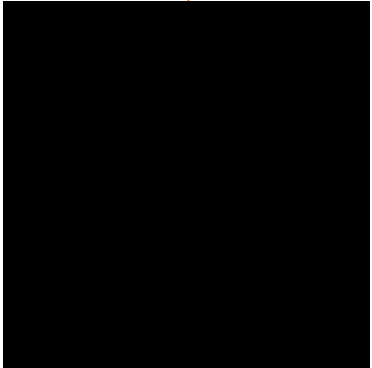
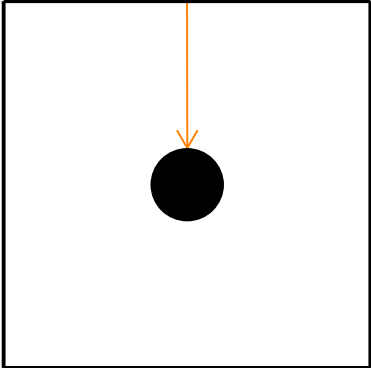
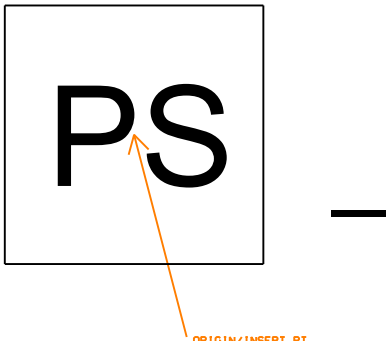
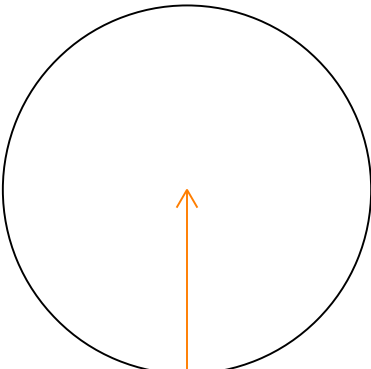
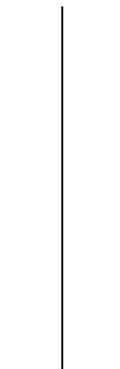
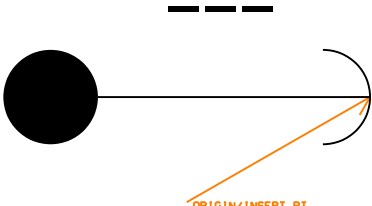
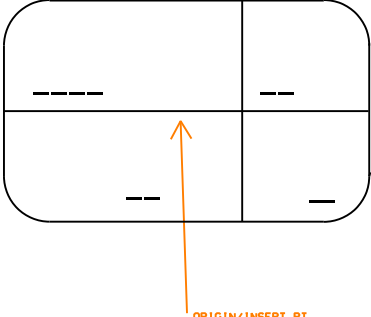
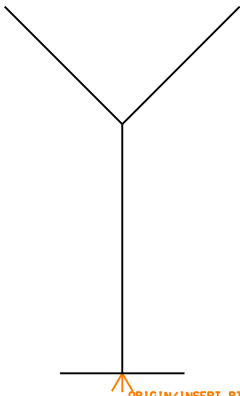
		
Survey/Mapping: LTSHP3 LIGHTED VESSEL LIGHTSHIP Element type: Symbol	Survey/Mapping: LTTOW2 LIGHTED BEACON TOWER Element type: Symbol	Survey/Mapping: LTVES2 UNMANNED LIGHT VESSEL Element type: Symbol
		
Survey/Mapping: MARINA BOAT HARBOR MARINA Element type: Symbol	Survey/Mapping: MARKGD GREEN DAY MARKER Element type: Symbol	Survey/Mapping: MARKRD RED DAY MARKER Element type: Symbol
		
Survey/Mapping: MEAST LIGHTED EAST MARKER BUOY Element type: Symbol	Survey/Mapping: MONWEL MONITORING WELL Element type: Symbol	Survey/Mapping: MORB MOORING BUOY Element type: Symbol

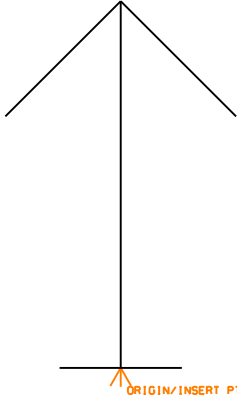
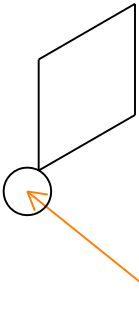
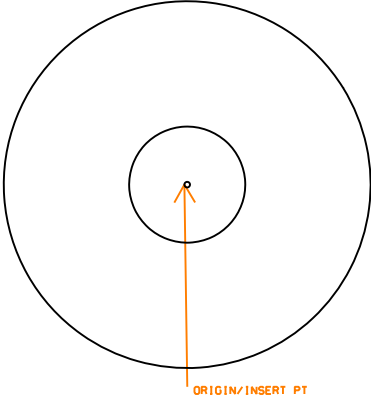
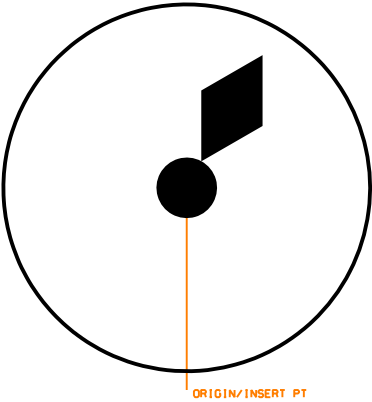
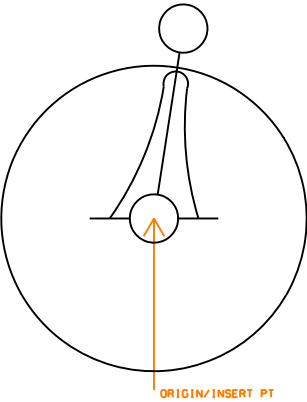
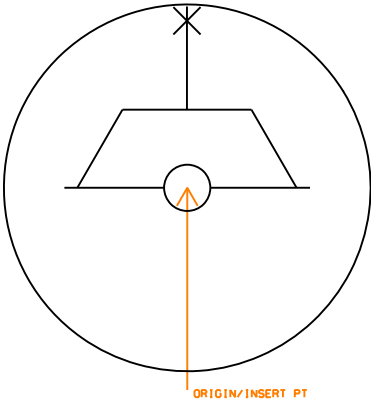
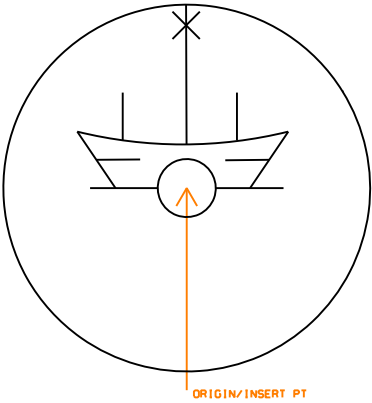
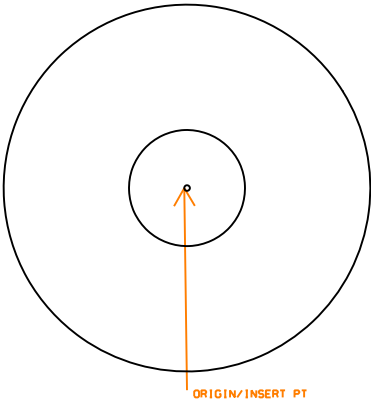
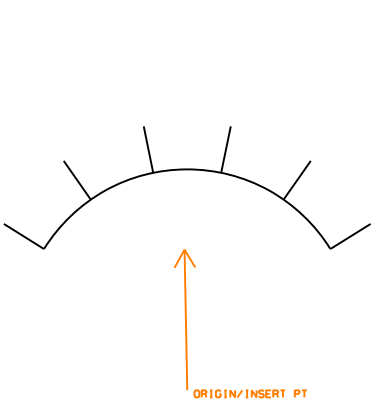
		
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Survey/Mapping: MORTWR MOORING TOWER Element type: Symbol	Survey/Mapping: MSOUTH LIGHTED SOUTH MARKER BUOY Element type: Symbol	Survey/Mapping: MWEST LIGHTED WEST MARKER BUOY Element type: Symbol
		
Survey/Mapping: NOTICE NOTICE BOARD Element type: Symbol	Survey/Mapping: NUN1 NUN BUOY Element type: Symbol	Survey/Mapping: NUN2 NUNBUOY Element type: Symbol

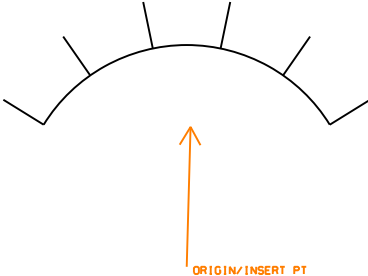
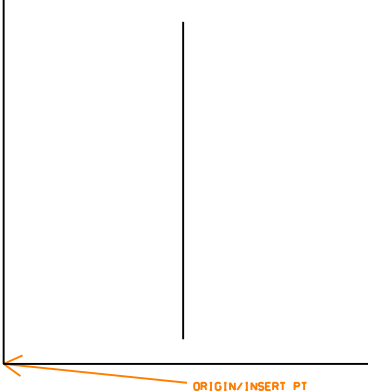
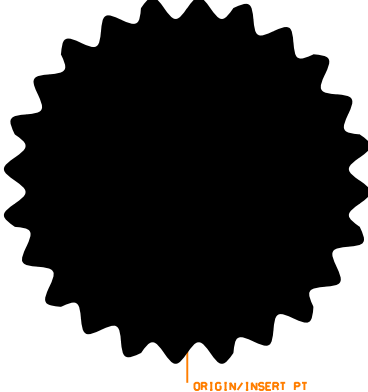
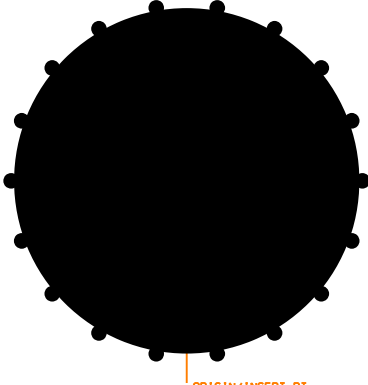
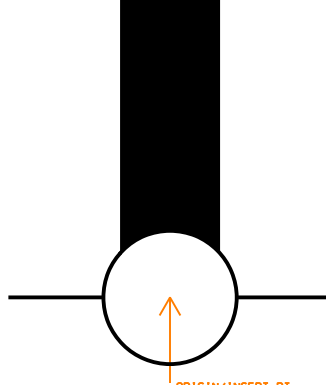
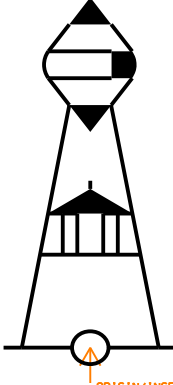
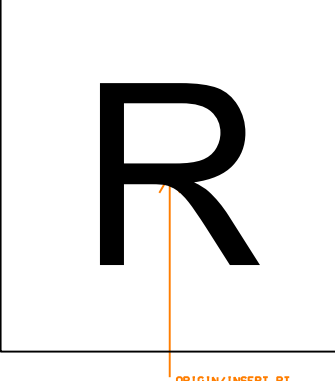
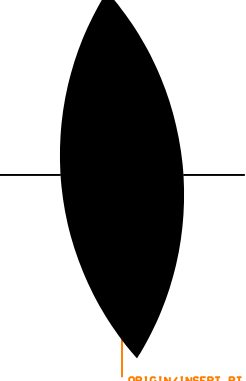
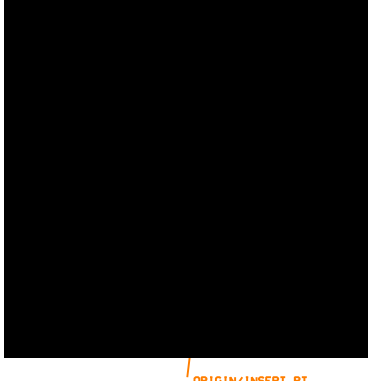
		
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Survey/Mapping: OBSSPT OBSERVATION SPOT Element type: Symbol	Survey/Mapping: OBSTRL OBSTRUCTION LIGHT Element type: Symbol	Survey/Mapping: ODAS ODAS BUOY DATA COLLECT Element type: Symbol
		
Survey/Mapping: OUTB BUOY MARKING OUTFALL Element type: Symbol	Survey/Mapping: PAPI PAPI LIGHT UNIT Element type: Symbol	Survey/Mapping: PHANDH PRIMARY ELECTRICAL HANDHOLE Element type: Symbol

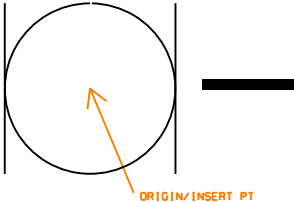
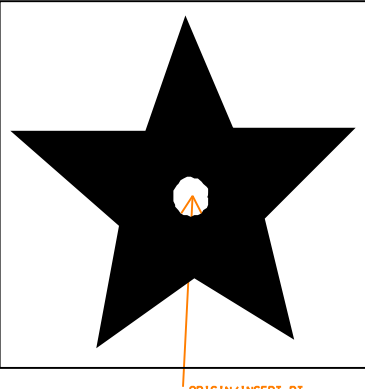
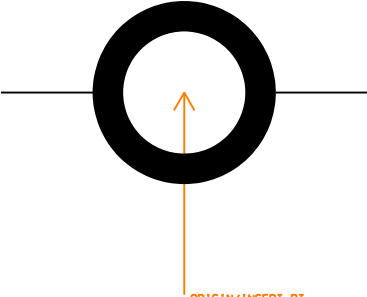
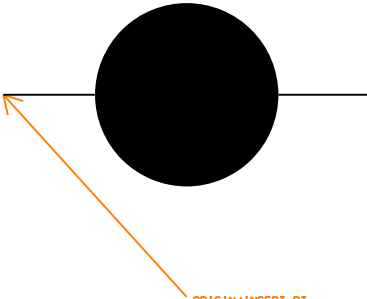
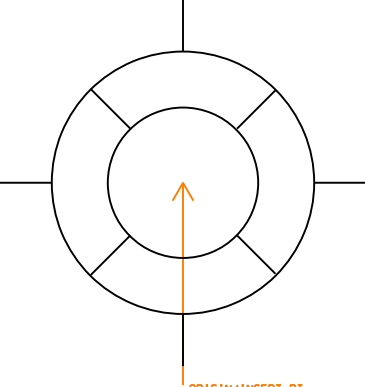
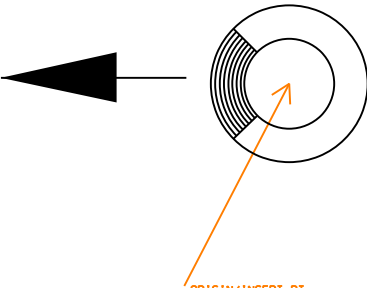
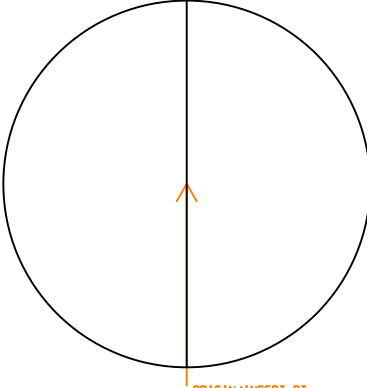
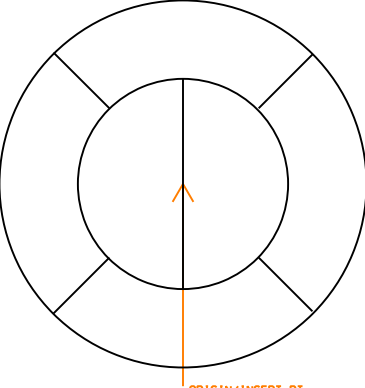
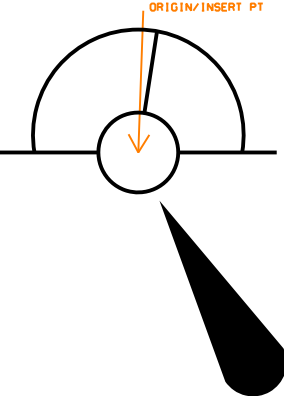
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Survey/Mapping: PHOCPT PHOTO CONTROL POINT Element type: Symbol	Survey/Mapping: PIINFO PI INFORMATION Element type: Symbol	Survey/Mapping: PIL1 PILLAR BUOY Element type: Symbol
		
Survey/Mapping: PIL2 PILLAR BUOY Element type: Symbol	Survey/Mapping: PILLT LIGHTED PILLAR BUOY Element type: Symbol	Survey/Mapping: PILM MULT COLOR PILLAR BUOY Element type: Symbol
		
Survey/Mapping: PILOT BOARDING PLACE Element type: Symbol	Survey/Mapping: PILOT1 PILOT OFFICE Element type: Symbol	Survey/Mapping: PILOT2 PILOT OFFICE Element type: Symbol

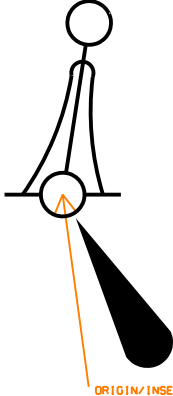
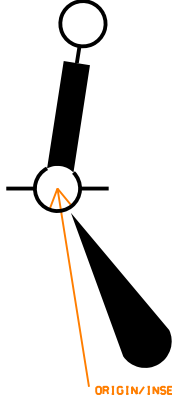
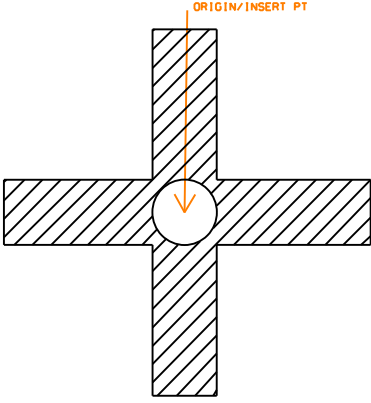
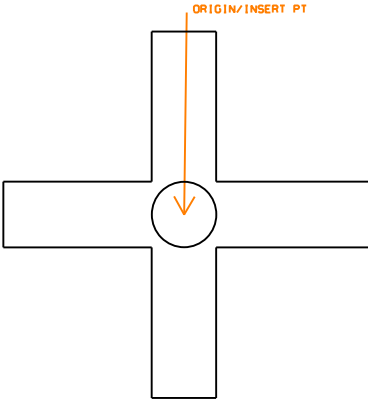
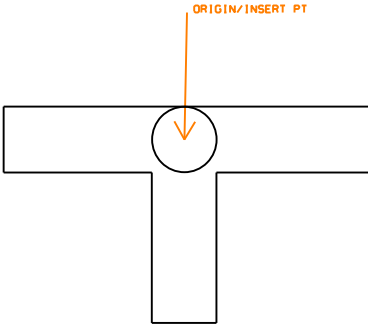
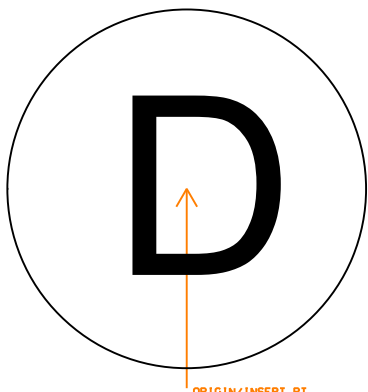
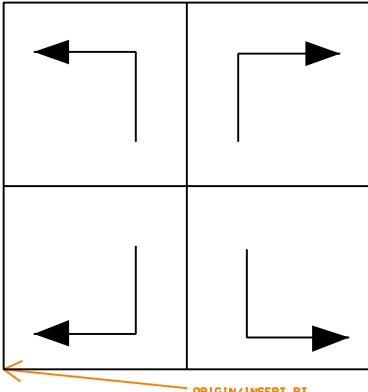
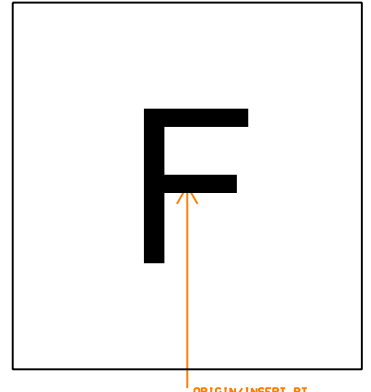
		
Survey/Mapping: PILV VERT STRIPE PILLAR BUOY Element type: Symbol	Survey/Mapping: PILVT V STRP PILLAR BUOY W TOPMK Element type: Symbol	Survey/Mapping: PIPDIS DISUSED PIPELINE PIPE Element type: Symbol
		
Survey/Mapping: PIPE WATER SEWER OUTFALL INTAKE Element type: Symbol	Survey/Mapping: PIPE1 OIL GAS PIPELINE Element type: Symbol	Survey/Mapping: PIPE2 OIL GAS PIPELINE Element type: Symbol
		
Survey/Mapping: PIPES1 OIL GAS PIPELINE AREA Element type: Symbol	Survey/Mapping: PIPES2 OIL GAS PIPELINE AREA Element type: Symbol	Survey/Mapping: PIVALV POST INDICATOR VALVE Element type: Symbol

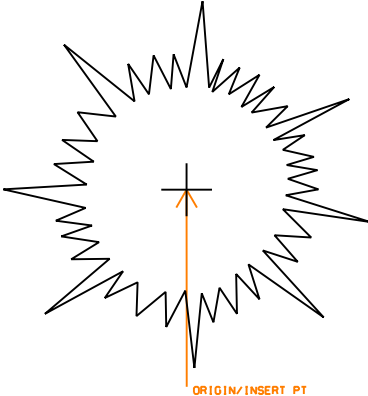
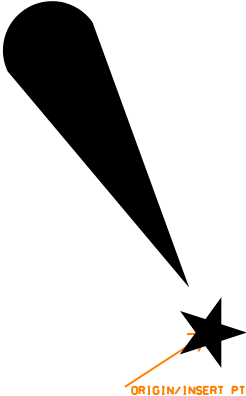
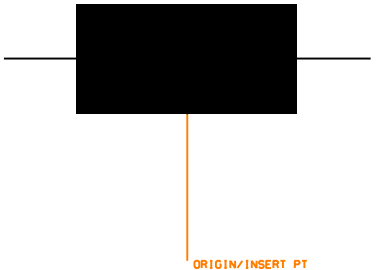
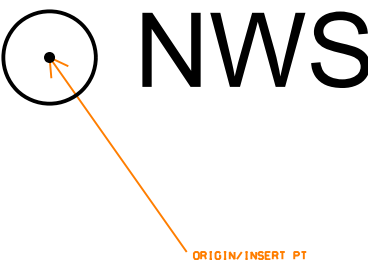
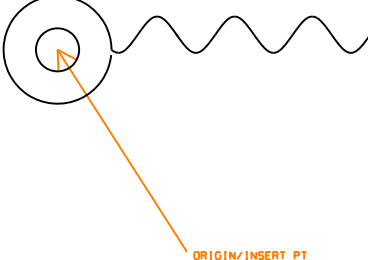
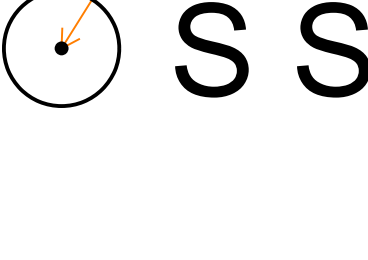
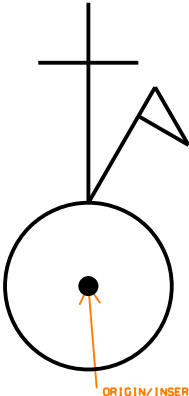
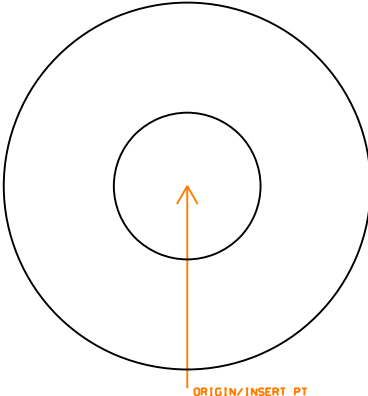
		
Survey/Mapping: PLAT1 PROD PLATFORM OIL DERRICK Element type: Symbol	Survey/Mapping: PLAT2 PROD PLATFORM OIL DERRICK Element type: Symbol	Survey/Mapping: PLAT3 PROD PLATFORM OIL DERRICK Element type: Symbol
		
Survey/Mapping: PMPSTA PUMP STATION Element type: Symbol	Survey/Mapping: POLE1 POLE STAKE PERCH Element type: Symbol	Survey/Mapping: POLE3 POLE STAKE PERCH Element type: Symbol
		
Survey/Mapping: POLEAR AERIAL POLE W GUYING Element type: Symbol	Survey/Mapping: POLEID POLE IDENT. SYMBOL Element type: Symbol	Survey/Mapping: POLEP PORT HAND STAKE POLE Element type: Symbol

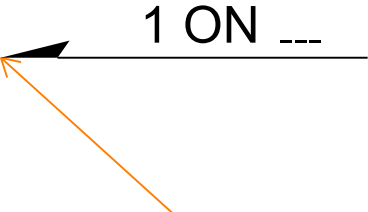
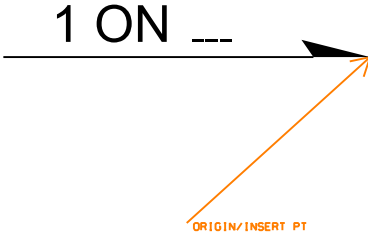
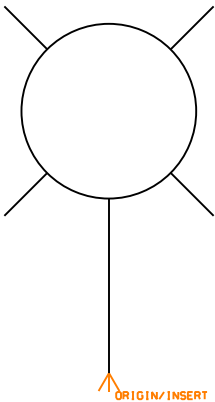
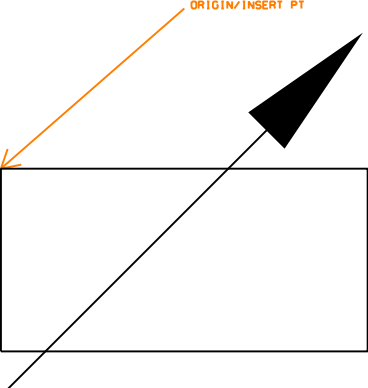
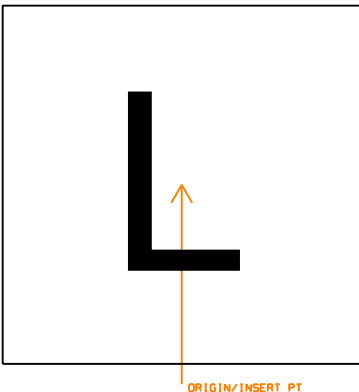
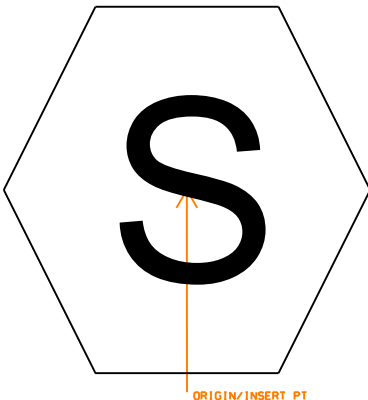
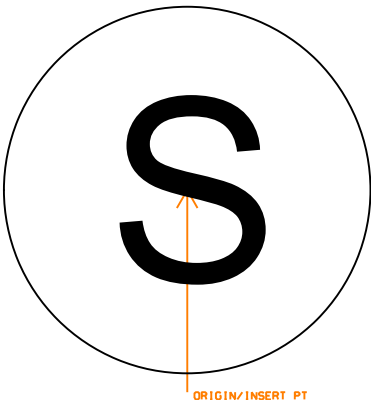
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Survey/Mapping: POLES STARBOARD HAND POLE STAKE Element type: Symbol	Survey/Mapping: PRIVB PRIVATE BARREL BUOY Element type: Symbol	Survey/Mapping: RADAR RADAR STATION OR BEACON Element type: Symbol
		
Survey/Mapping: RADAR1 FLOATING RADAR BEACON Element type: Symbol	Survey/Mapping: RADAR2 FLOATING RADAR BEACON Element type: Symbol	Survey/Mapping: RADAR3 FLOATING RADAR BEACON Element type: Symbol
		
Survey/Mapping: RADAR4 FLOATING RADAR BEACON Element type: Symbol	Survey/Mapping: RADIO RADIO BEACON GENERAL Element type: Symbol	Survey/Mapping: RADRF1 RADAR REFLECTOR OR FEATURE Element type: Symbol

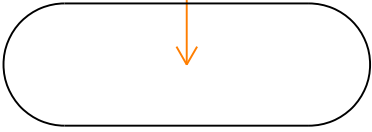
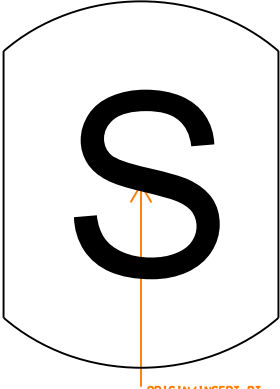
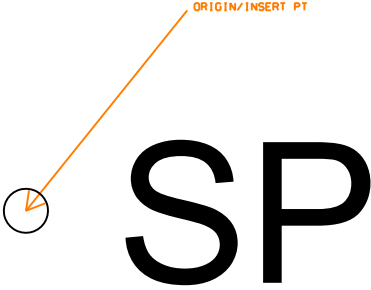
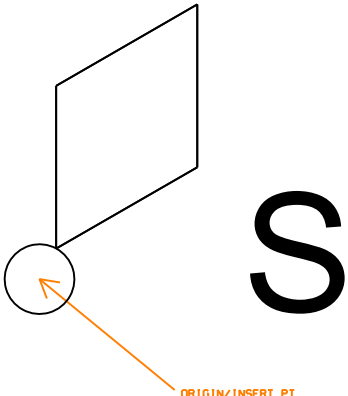
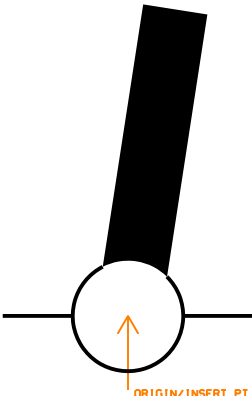
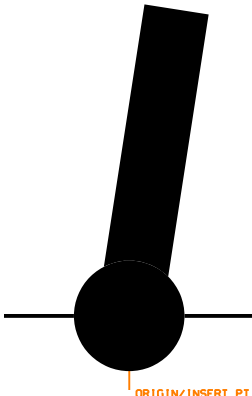
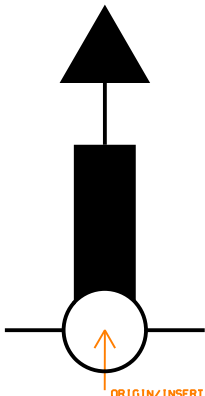
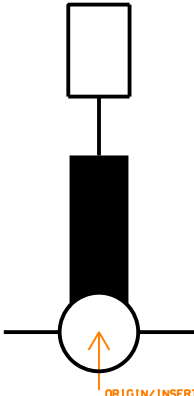
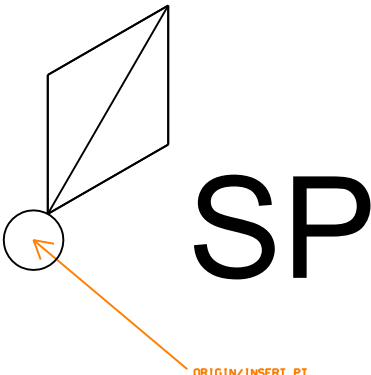
		
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Survey/Mapping: REEF1 CORAL REEF SMALL ICON Element type: Symbol	Survey/Mapping: REFUG1 REFUGE BEACON Element type: Symbol	Survey/Mapping: REFUG2 REFUGE BEACON Element type: Symbol
		
Survey/Mapping: REIL REIL LIGHT UNIT Element type: Symbol	Survey/Mapping: RESCUE RESCUE STATION Element type: Symbol	Survey/Mapping: RESPLT OBS RESEARCH PLATFORM Element type: Symbol

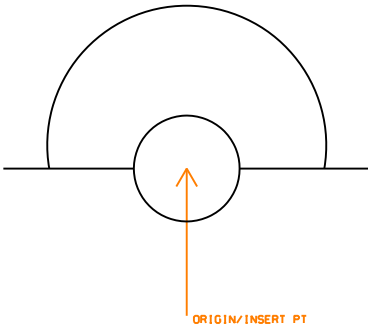
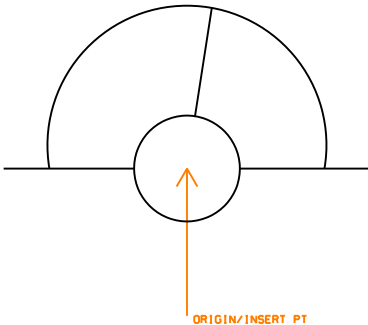
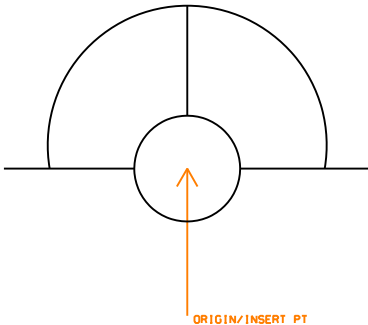
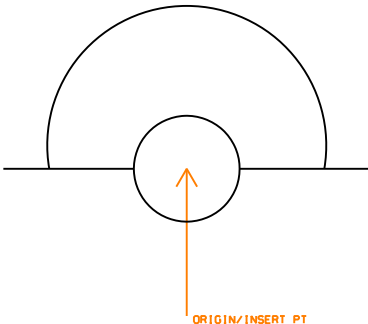
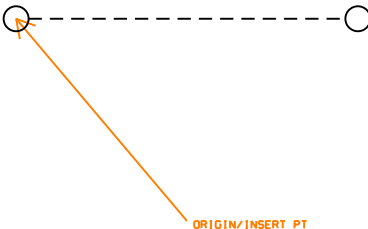
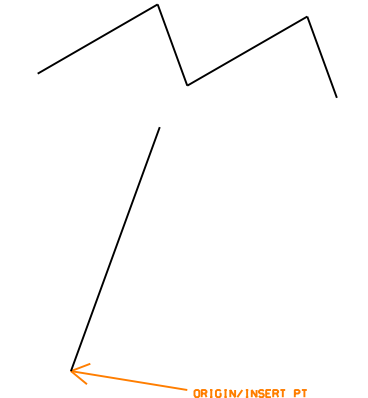
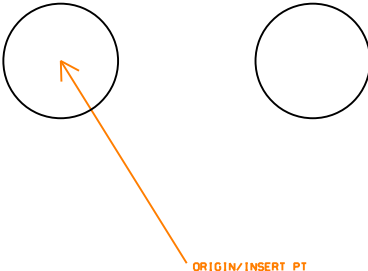
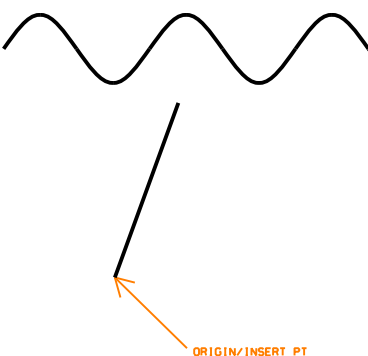
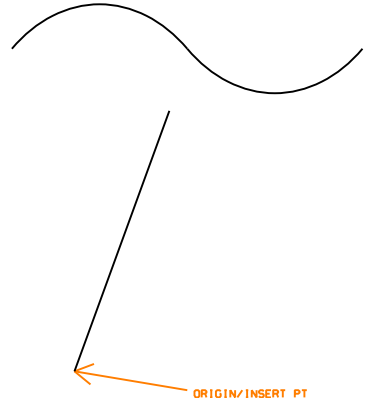
		
Survey/Mapping: RGVALV REGULATOR VALVE Element type: Symbol	Survey/Mapping: RSTAR RANGE STAR Element type: Symbol	Survey/Mapping: RVMMOP OPEN RIVER MILE MARKER Element type: Symbol
		
Survey/Mapping: RVMMSO SOLID RIVER MILE MARKER Element type: Symbol	Survey/Mapping: RWCLL RW CENTERLINE LIGHT Element type: Symbol	Survey/Mapping: RWEL RW END LIGHT Element type: Symbol
		
Survey/Mapping: RWLEL RW EDGE LIGHT_ELEVATED Element type: Symbol	Survey/Mapping: RWLSF RW EDGE LIGHT_SEMIFLUSH Element type: Symbol	Survey/Mapping: SAFE1 LIGHTED SAFE WATER MARK Element type: Symbol

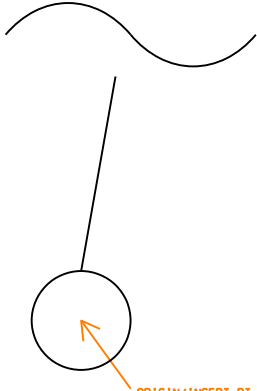
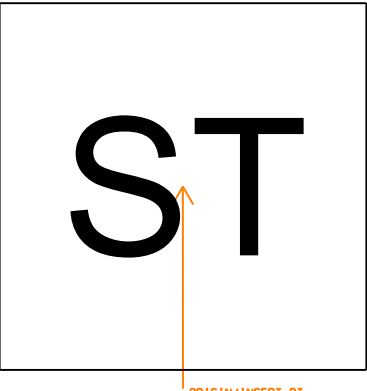
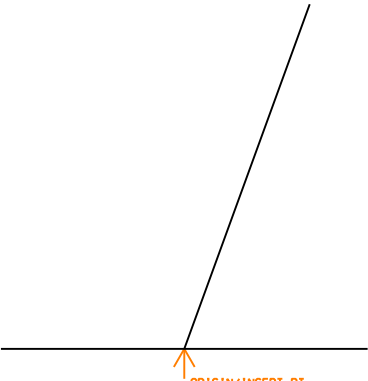
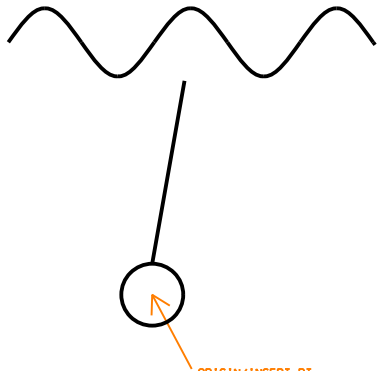
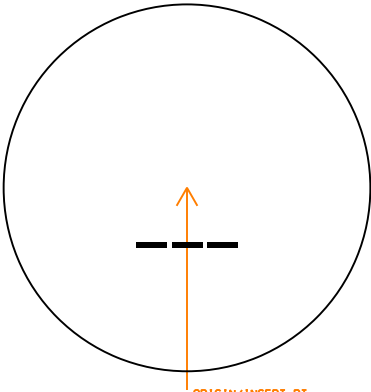
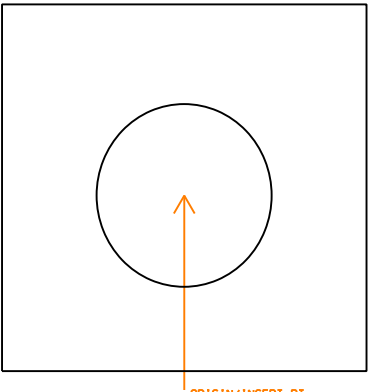
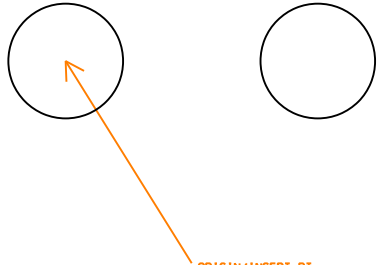
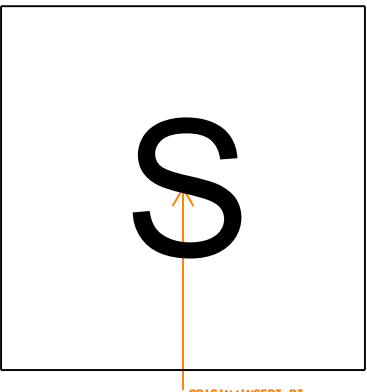
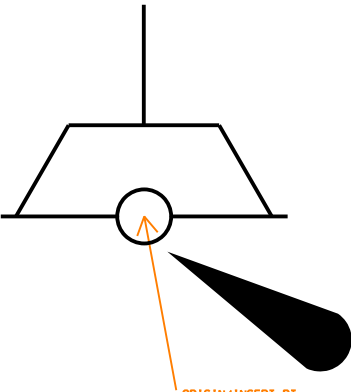
		
Survey/Mapping: SAFE2 LIGHTED SAFE WATER MARK Element type: Symbol	Survey/Mapping: SAFE3 LIGHTED SAFE WATER MARK Element type: Symbol	Survey/Mapping: SCNRH SECTION CORNER HATCHED Element type: Symbol
		
Survey/Mapping: SCNRO SECTION CORNER OPEN Element type: Symbol	Survey/Mapping: SCNRTO SECTION CORNER T OPEN Element type: Symbol	Survey/Mapping: SDM SURFACE DISPLACEMENT MONUMENT Element type: Symbol
		
Survey/Mapping: SDMHOL STORM DRAINAGE MANHOLE Element type: Symbol	Survey/Mapping: SECCUT TYPICAL SECTION CUT Element type: Symbol	Survey/Mapping: SFL SEQUENCED FLASHER LIGHT Element type: Symbol

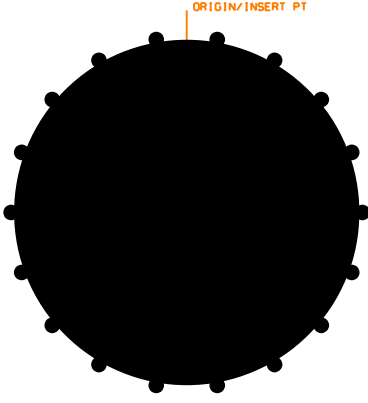
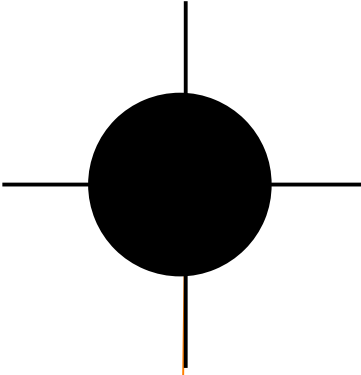
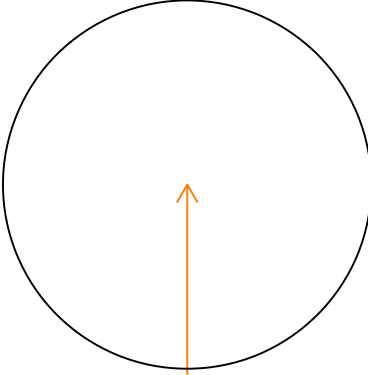
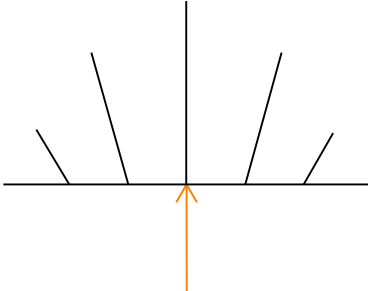
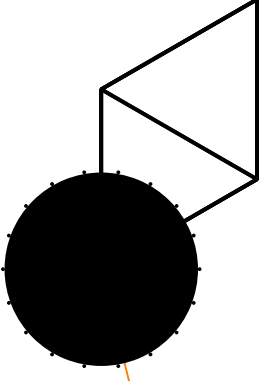
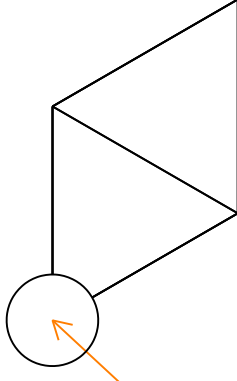
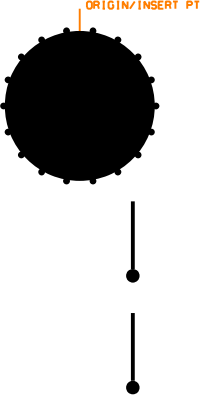
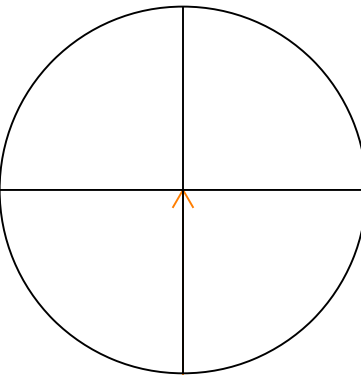
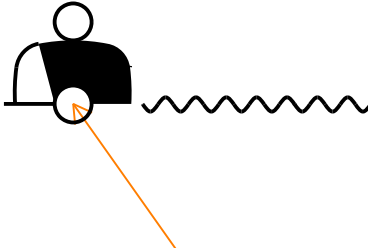
		
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Survey/Mapping: SIGNWS NAT WEATHER SVC STATION Element type: Symbol	Survey/Mapping: SIGSHO SUB SIGNAL CONNECT SHORE Element type: Symbol	Survey/Mapping: SIGST1 SIGNAL STATION GENERAL Element type: Symbol
		
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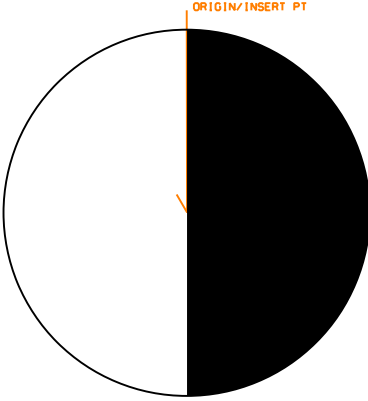
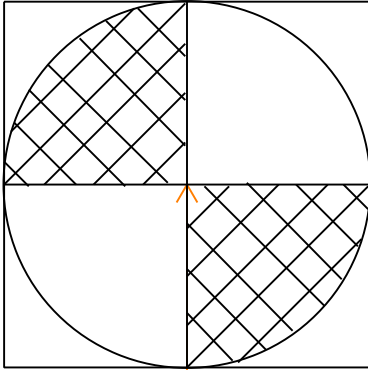
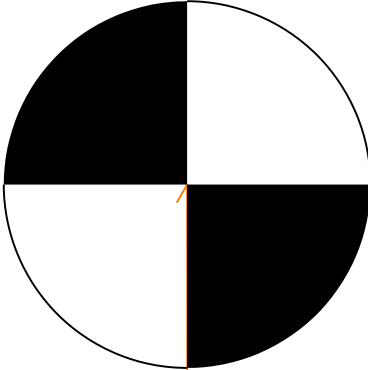
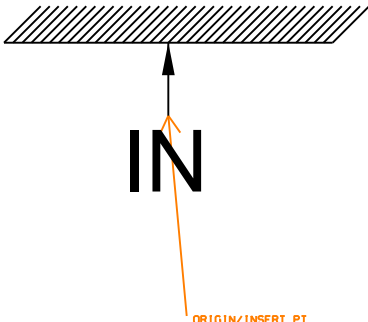
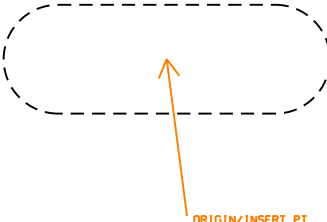
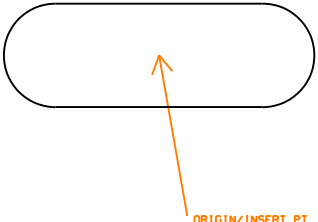
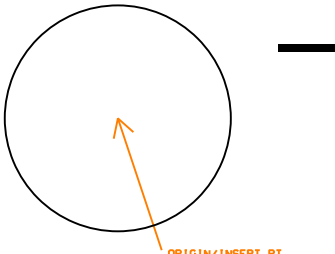
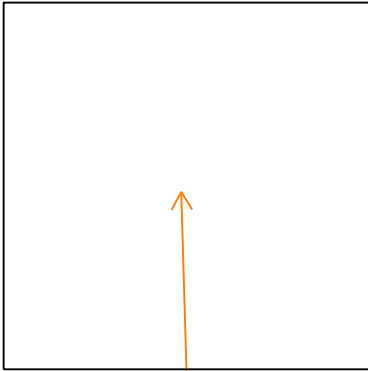
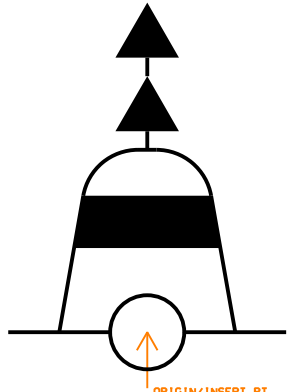
		
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Survey/Mapping: SLARRR SLOPE AR W ENTER DATA FIELD Element type: Symbol	Survey/Mapping: SLLX STREETLITE LUMINAIRE_EXIST Element type: Symbol	Survey/Mapping: SLREG CONSTNT CURRENT TRANSFORMER Element type: Symbol
		
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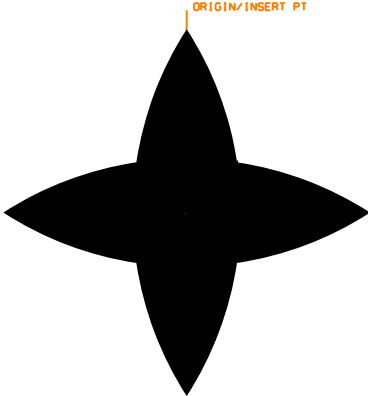
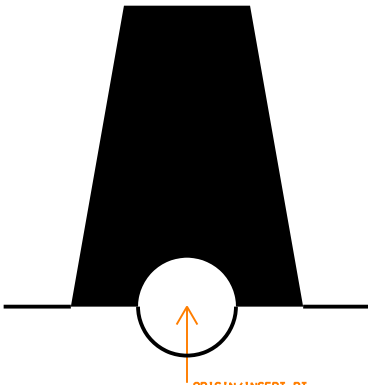
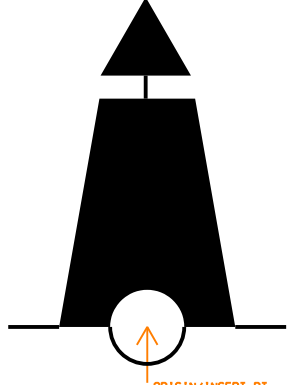
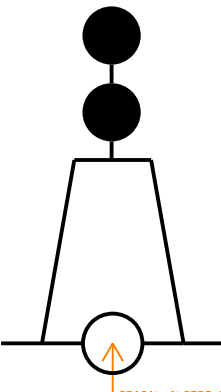
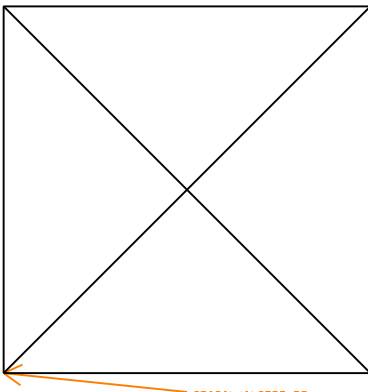
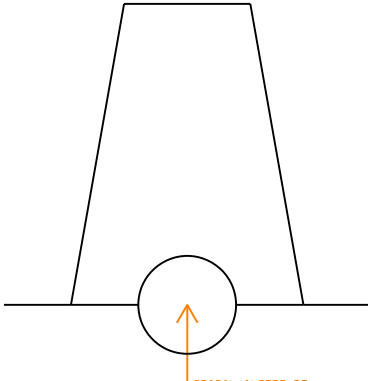
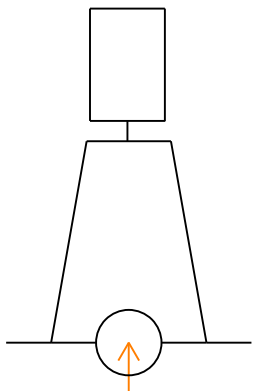
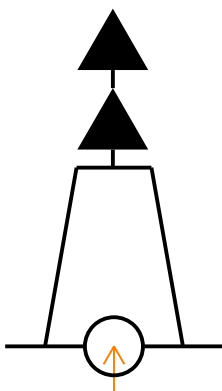
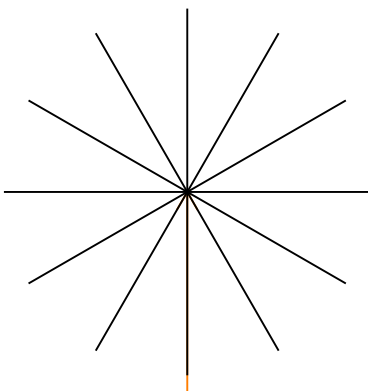
		
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Survey/Mapping: SPAR1 SPAR BUOY SPINDLE BUOY Element type: Symbol	Survey/Mapping: SPAR2 SPAR BUOY SPINDLE BUOY Element type: Symbol	Survey/Mapping: SPARB BLACK SPARBUOY Element type: Symbol
		
Survey/Mapping: SPARBT BLACK SPAR BUOY W TOPMARK Element type: Symbol	Survey/Mapping: SPARWT WHITE SPAR BUOY W TOP Element type: Symbol	Survey/Mapping: SPH1 SPHERICAL BUOY Element type: Symbol

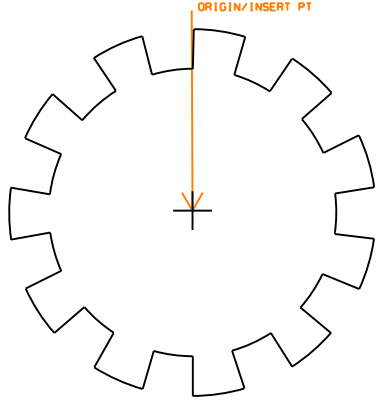
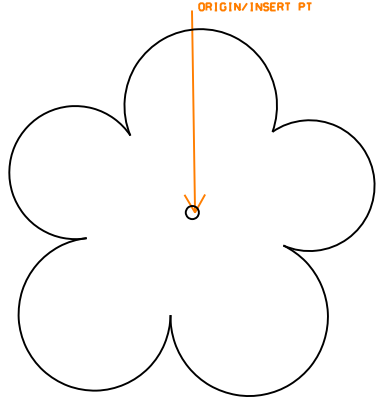
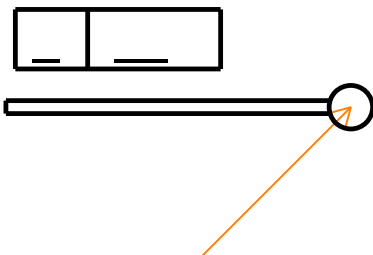
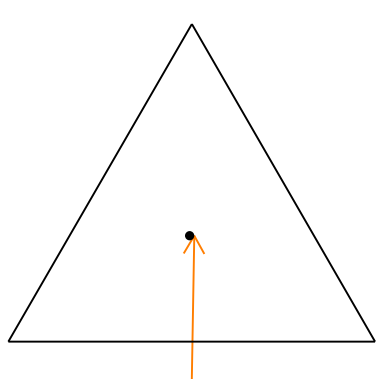
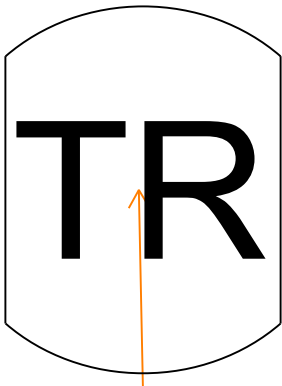
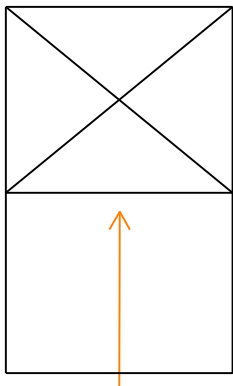
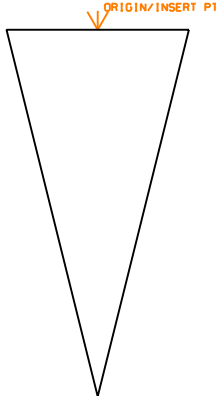
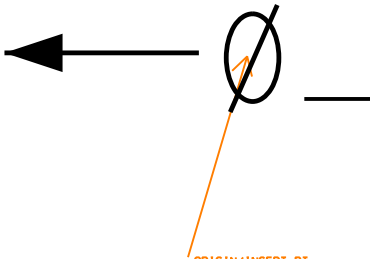
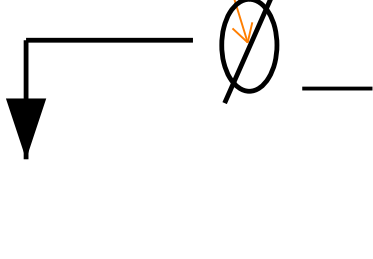
		
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Survey/Mapping: SPHW WHITE SHERICAL BUOY Element type: Symbol	Survey/Mapping: SPILE SUBMERGED PILING Element type: Symbol	Survey/Mapping: SPILE1 SUBMERGED PILES Element type: Symbol
		
Survey/Mapping: SPILES SUBMERGED PILES Element type: Symbol	Survey/Mapping: SPILEX SUBMERGED PILE W POSITION Element type: Symbol	Survey/Mapping: SPOST SUBMERGED POST Element type: Symbol

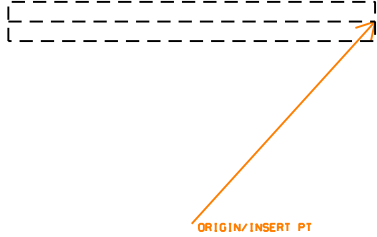
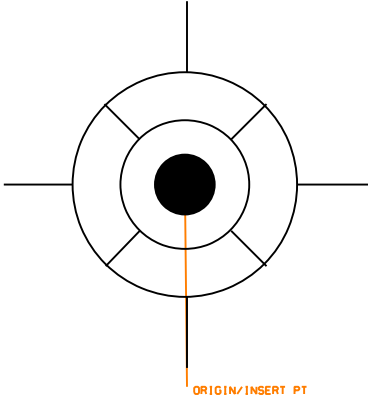
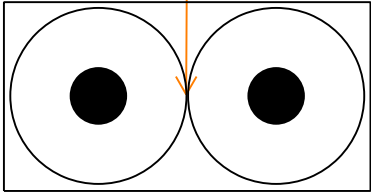
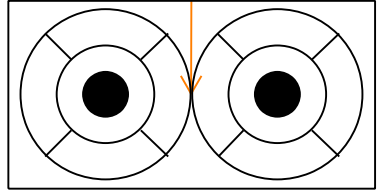
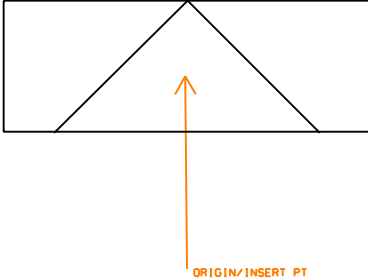
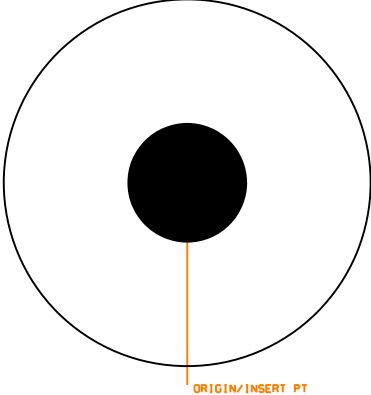
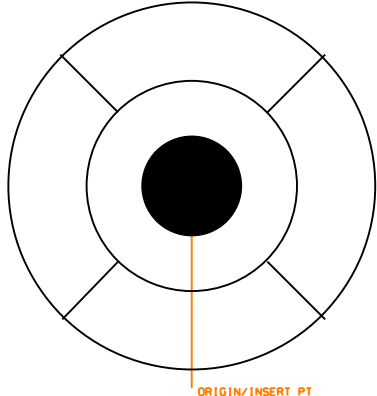
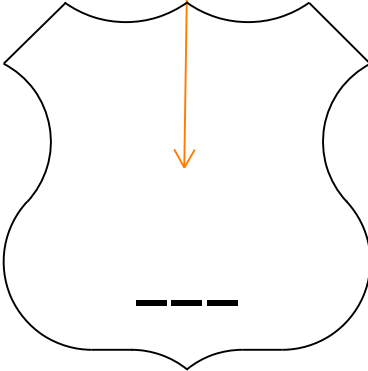
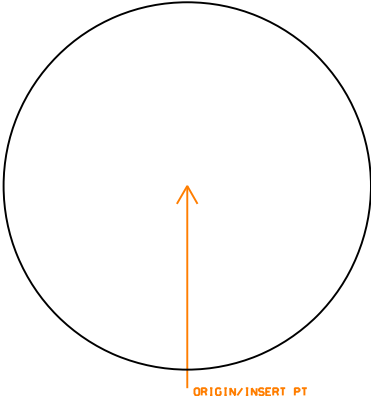
		
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Survey/Mapping: STAKEX STAKE WITH POSITION Element type: Symbol	Survey/Mapping: STHWY STATE HIGHWAY SYMBOL Element type: Symbol	Survey/Mapping: STMPIT STEAM PIT Element type: Symbol
		
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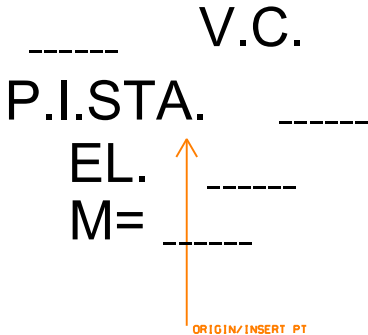
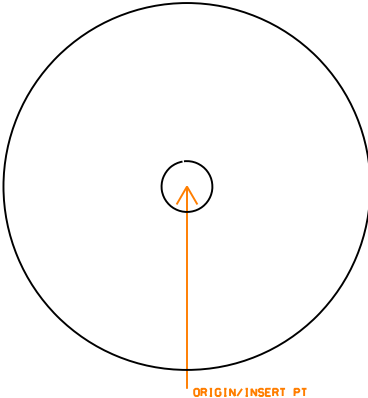
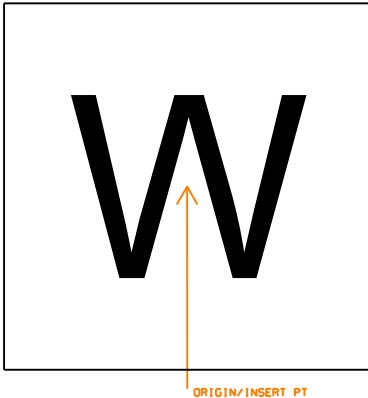
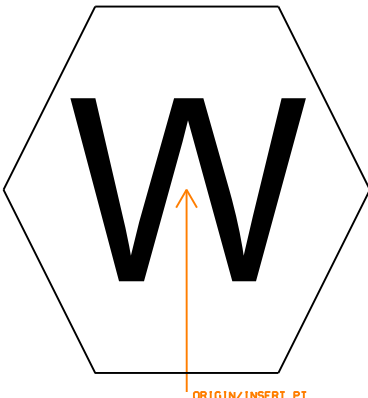
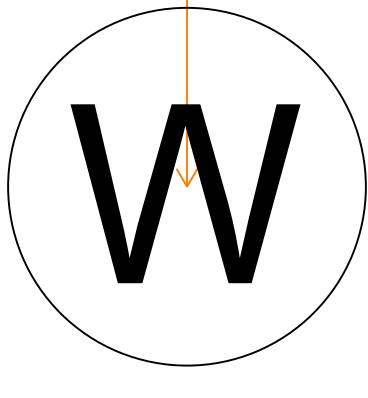
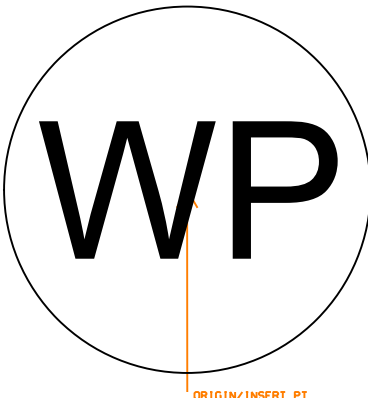
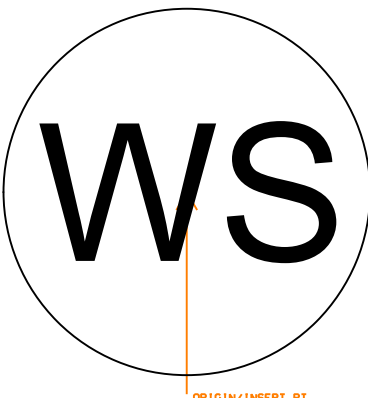
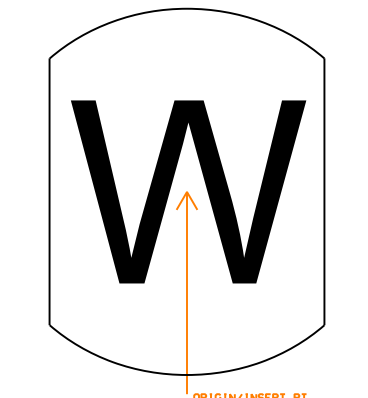
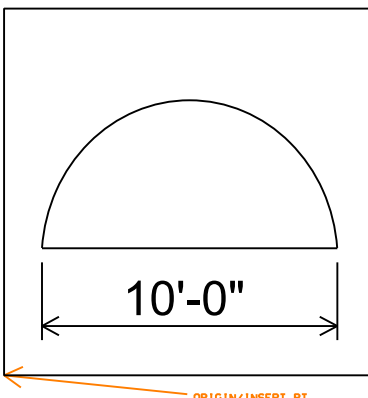
		
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Survey/Mapping: SWAMP SWAMP Element type: Symbol	Survey/Mapping: SWELB1 SUBMERGED WELL W BUOY Element type: Symbol	Survey/Mapping: SWELB2 SUBMERGED WELL W BUOY Element type: Symbol
		
Survey/Mapping: SWELL5 SUBMERGED PROD WELL Element type: Symbol	Survey/Mapping: TDZL TOUCHDOWN ZONE LIGHT Element type: Symbol	Survey/Mapping: TELBBB TELEGRAPHIC BARREL BUOY BLK Element type: Symbol

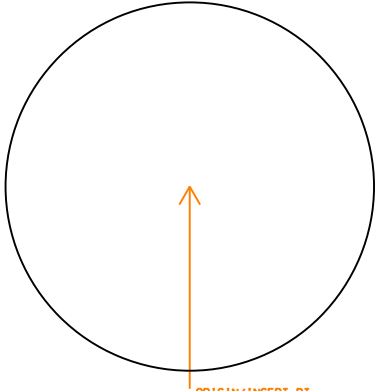
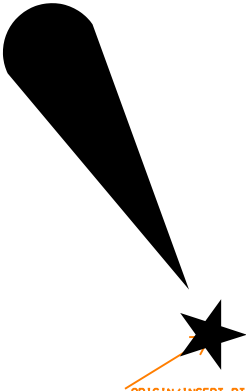
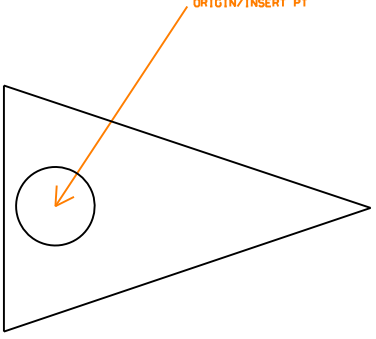
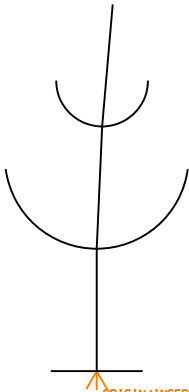
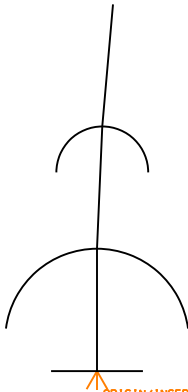
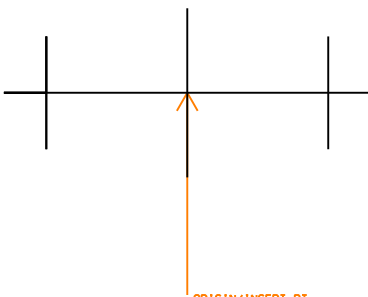
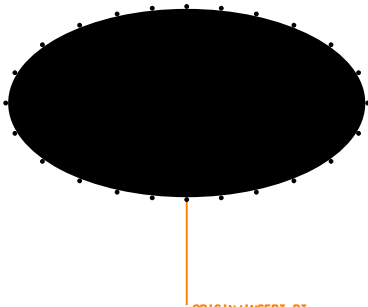
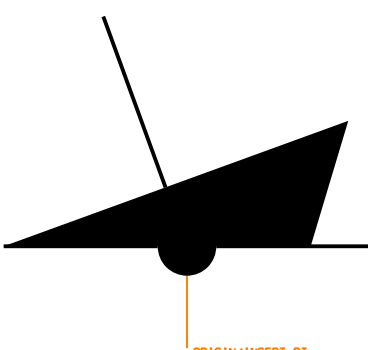
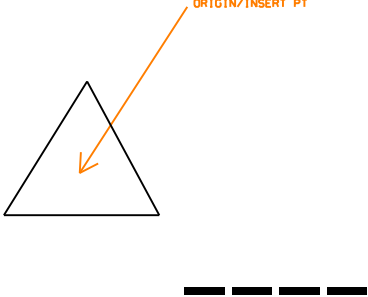
		
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Survey/Mapping: TIRETR TIRE TREDDLE Element type: Symbol	Survey/Mapping: TNKBG TANK BELOW GROUND Element type: Symbol	Survey/Mapping: TNKHAG TANK HORIZ ABOVE GROUND Element type: Symbol
		
Survey/Mapping: TNKVAG TANK VERTICAL ABOVE GROUND Element type: Symbol	Survey/Mapping: TOW1 BEACON TOWER Element type: Symbol	Survey/Mapping: TOW2 BEACON TOWER Element type: Symbol

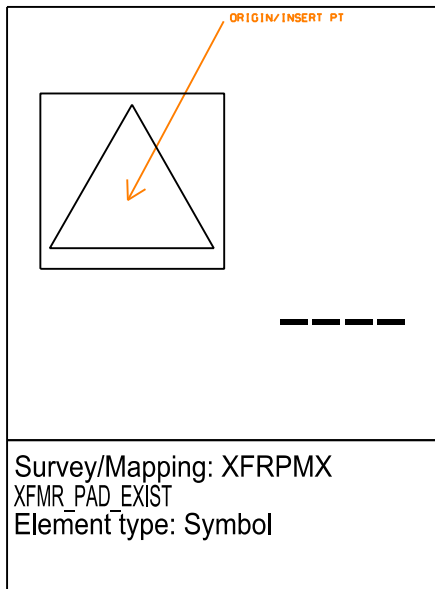
		
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Survey/Mapping: TOWBT2 BLACK BEACON TOWER W TOP Element type: Symbol	Survey/Mapping: TOWER TRANSMISSION TOWER Element type: Symbol	Survey/Mapping: TOWW WHITE BEACON TOWER Element type: Symbol
		
Survey/Mapping: TOWWT1 WHITE BEACON TOWER W TOP Element type: Symbol	Survey/Mapping: TOWWT2 WHITE BEACON TOWER W T Element type: Symbol	Survey/Mapping: TREEC CONIFEROUS TREE Element type: Symbol

		
Survey/Mapping: TREED DECIDUOUS TREE Element type: Symbol	Survey/Mapping: TREEG GENERIC TREE Element type: Symbol	Survey/Mapping: TRFSIG TRAFFIC SIGNAL MAST ARM Element type: Symbol
		
Survey/Mapping: TRIPNT TRIANGULATION POINT Element type: Symbol	Survey/Mapping: TRVALT TRANSFORMER VAULT Element type: Symbol	Survey/Mapping: TSCTRL TR SIGNAL CONTROLLER Element type: Symbol
		
Survey/Mapping: TSHEAD TRAFFIC SIGNAL HEAD Element type: Symbol	Survey/Mapping: TSPHS TR SIGNAL PH NO. THRU Element type: Symbol	Survey/Mapping: TSPHT TR SIGNAL PH NO. TURN Element type: Symbol

		
Survey/Mapping: TSVLDT TR SIGNAL VEH LOOP DETECTOR Element type: Symbol	Survey/Mapping: TWCLL TW CENTERLINE LIGHT Element type: Symbol	Survey/Mapping: TWELEL TW END LIGHT_ELEVATED Element type: Symbol
		
Survey/Mapping: TWELSF TW END LIGHT_SEMIFLUSH Element type: Symbol	Survey/Mapping: TWGSGN TW GUIDANCE SIGN Element type: Symbol	Survey/Mapping: TWLEL TW EDGE LIGHT_ELEVATED Element type: Symbol
		
Survey/Mapping: TWLSF TW EDGE LIGHT_SEMIFLUSH Element type: Symbol	Survey/Mapping: USHWY US HIGHWAY SYMBOL Element type: Symbol	Survey/Mapping: UTPLX POLE_EXISTING Element type: Symbol

		
Survey/Mapping: VCDATA VERTICAL CURVE DATA Element type: Symbol	Survey/Mapping: VERCPT VERTICAL CONTROL POINT Element type: Symbol	Survey/Mapping: WAHHOL WATER HANDHOLE Element type: Symbol
		
Survey/Mapping: WAMETR WATER METER Element type: Symbol	Survey/Mapping: WAMHOL WATER MANHOLE Element type: Symbol	Survey/Mapping: WAPLNT WATER PLANT Element type: Symbol
		
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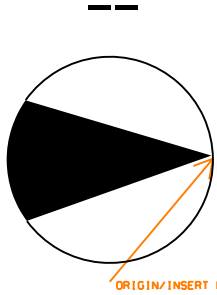
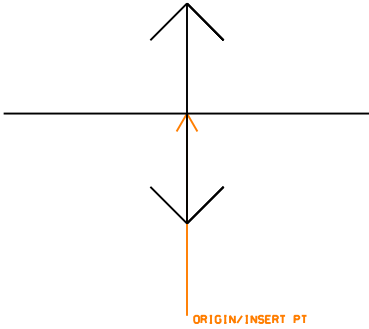
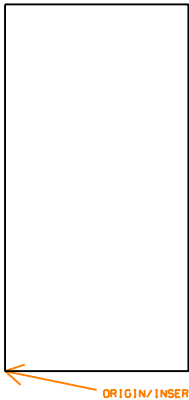
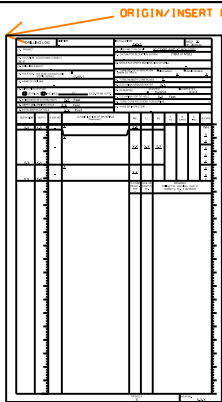
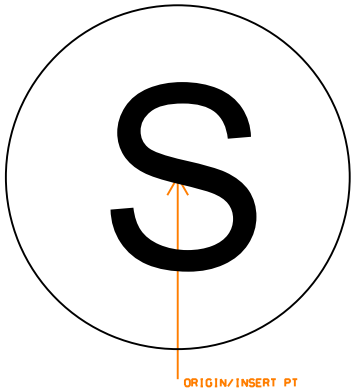
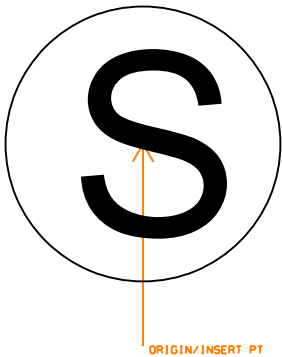
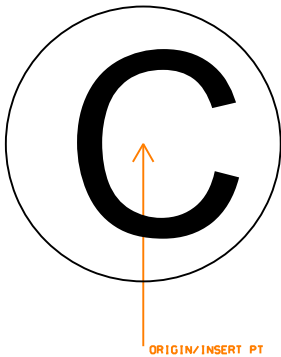
		
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Survey/Mapping: WITHYP PORT HAND WITHY Element type: Symbol	Survey/Mapping: WITHYS STARBOARD HAND WITHY Element type: Symbol	Survey/Mapping: WRECK WRECK NOT DANGEROUS Element type: Symbol
		
Survey/Mapping: WRKDNG DANGER WRECK DEPTH UNKNOWN Element type: Symbol	Survey/Mapping: WRKEXP WRECK PARTLY EXPOSED Element type: Symbol	Survey/Mapping: XFRPLX XFRM_POLE_EXIST Element type: Symbol

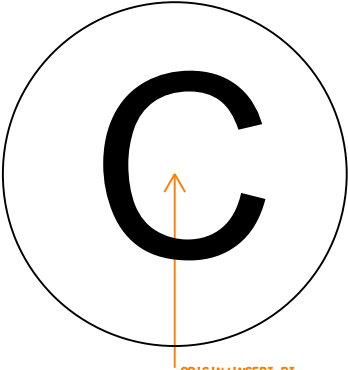
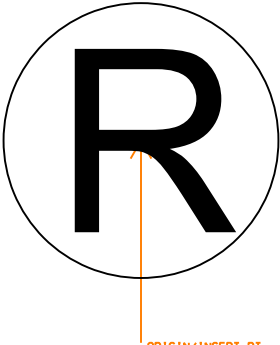
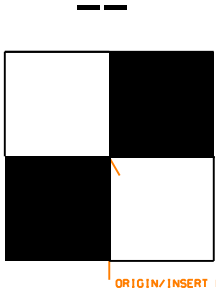
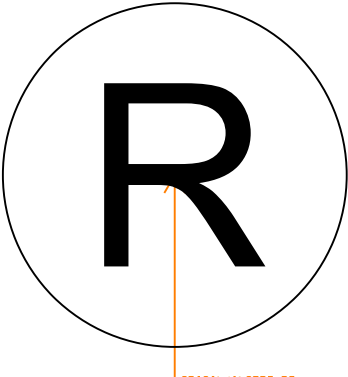
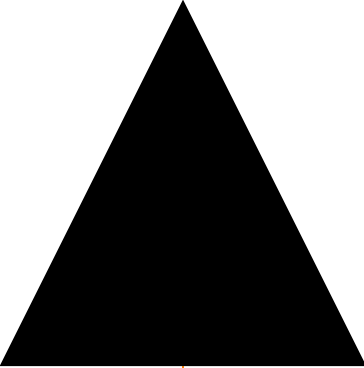
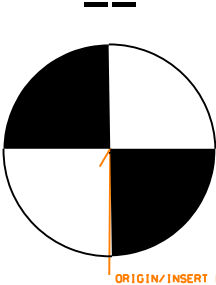
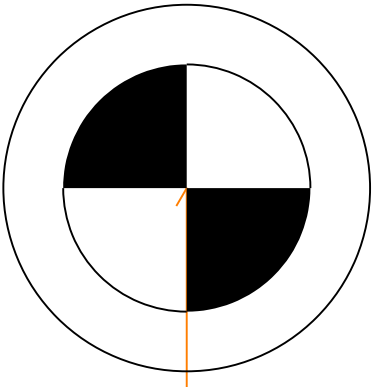
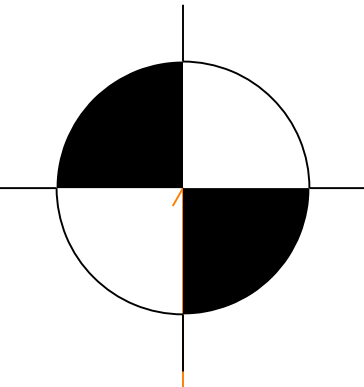
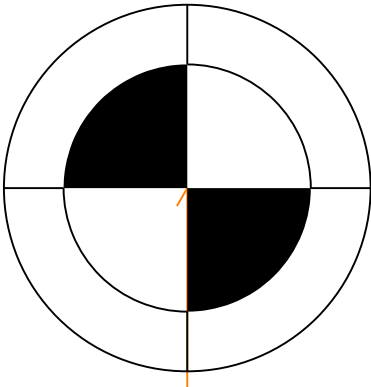


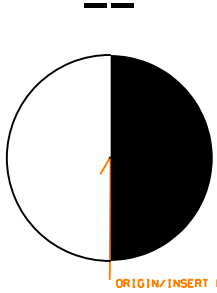
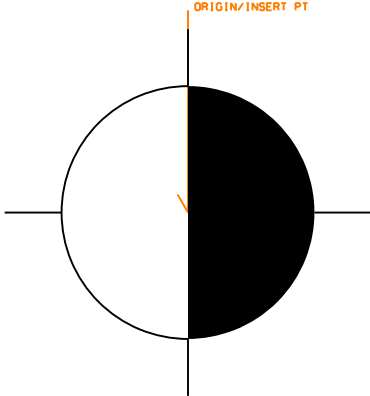
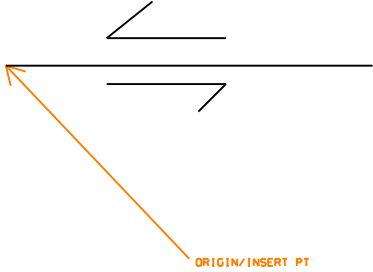
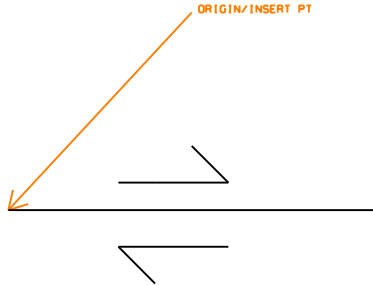
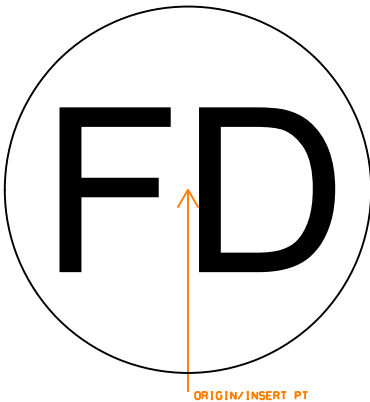
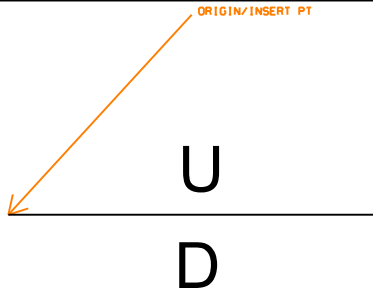
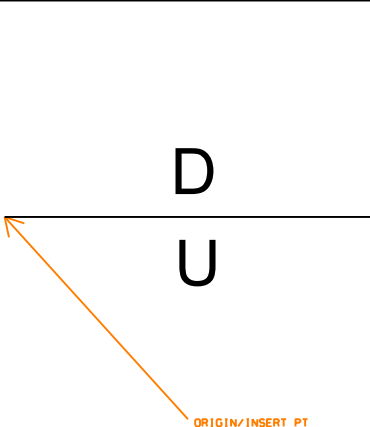
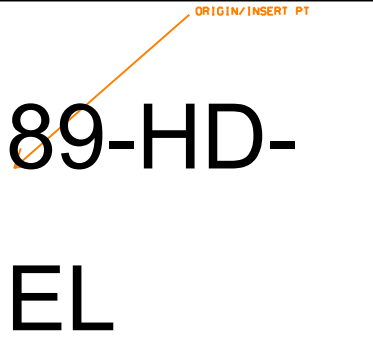
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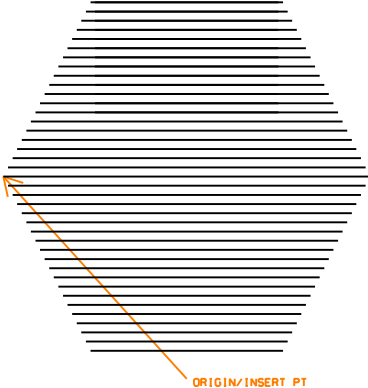
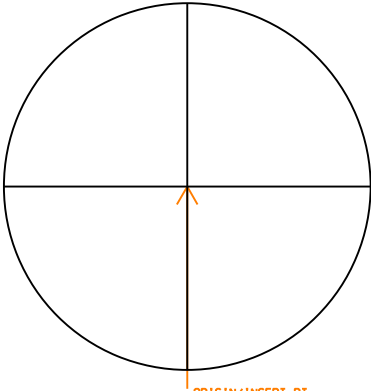
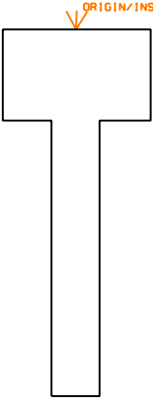
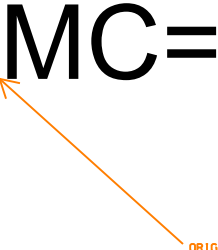
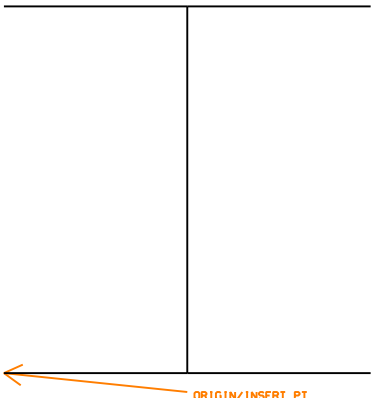
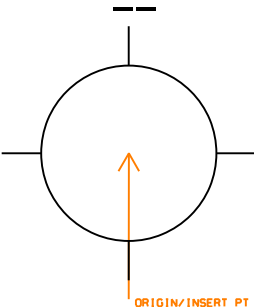
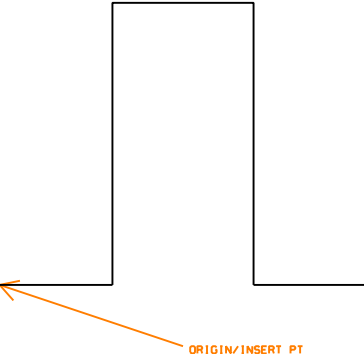
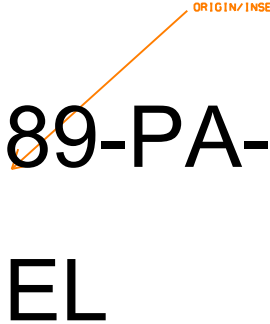
6 Geotechnical Symbols Library

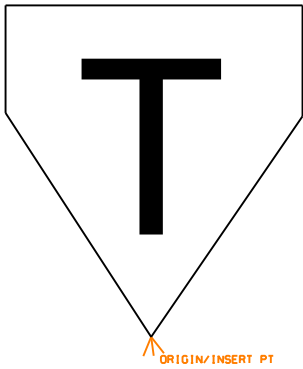
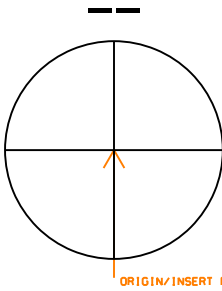
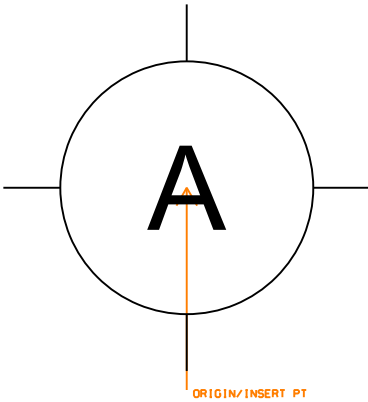
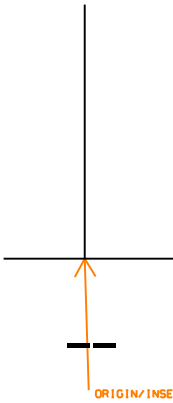
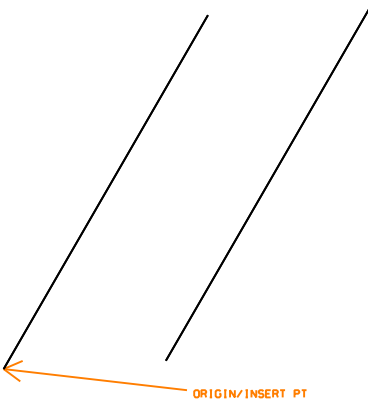
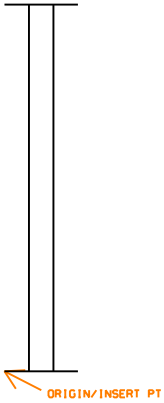
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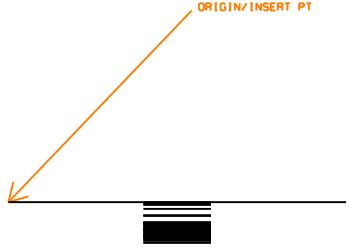
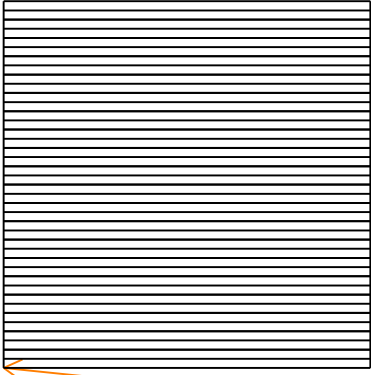
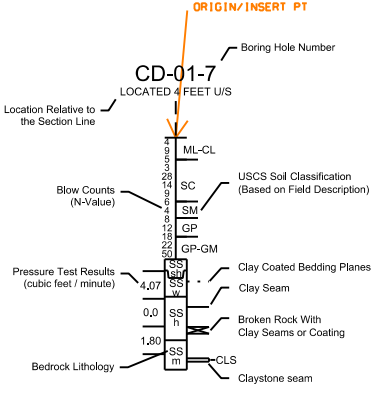
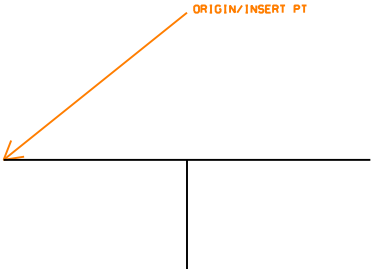
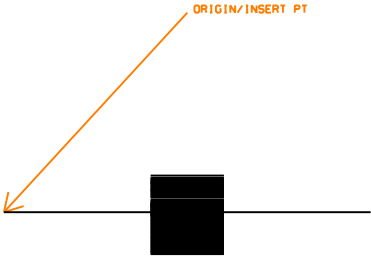
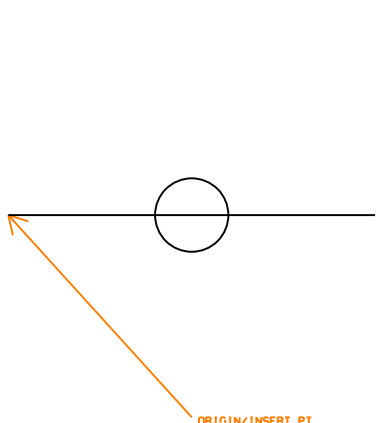
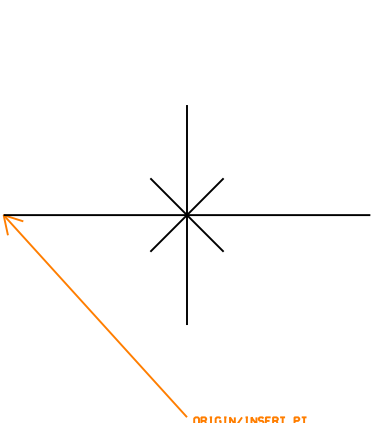
		89-BH- EL
Geotechnical: ANCHOL ANG CORED HOLE AR EQ D Element type: Symbol	Geotechnical: ANTICL ANTICLINE Element type: Symbol	Geotechnical: BHHNUM BACKHOE HOLE NUMBER Element type: Symbol
		89-CC-PA- EL
Geotechnical: BOLOGR BORING LOG REFUSAL Element type: Symbol	Geotechnical: BORLOG BORING LOG SHEET SCALE1TO1 Element type: Symbol	Geotechnical: CCHNUM CONCRETE CORE HOLE NO. Element type: Symbol
		
Geotechnical: CDRDSH CONSOL DRAINED DIR SHEAR Element type: Symbol	Geotechnical: CONDRA CONSOLIDATED DRAINED Element type: Symbol	Geotechnical: CONSOL CONSOLIDATION Element type: Symbol

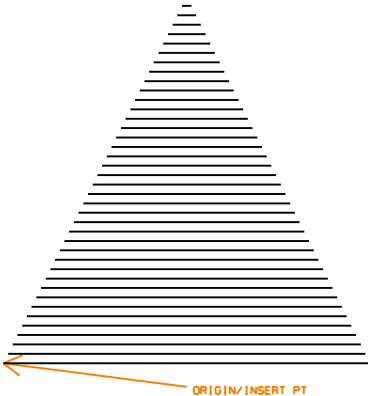
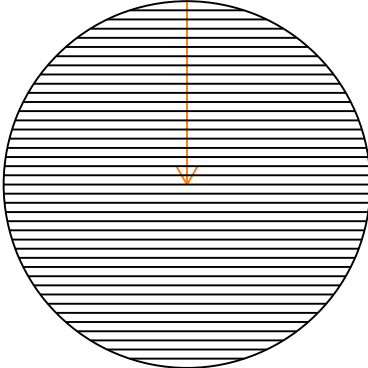
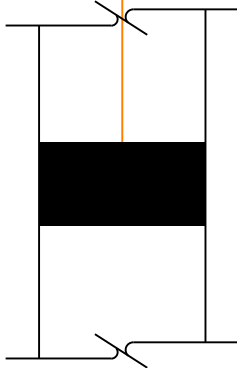
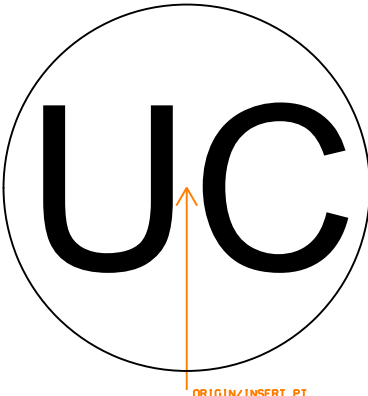
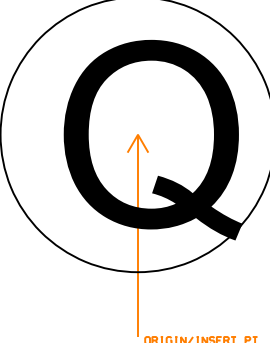
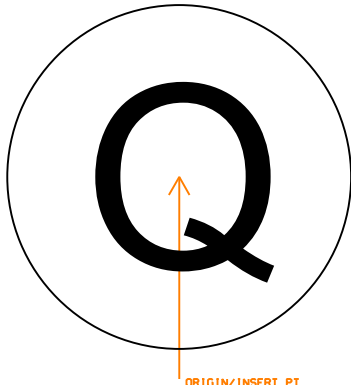
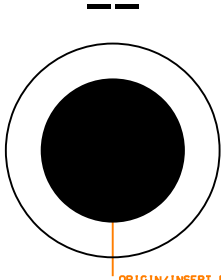
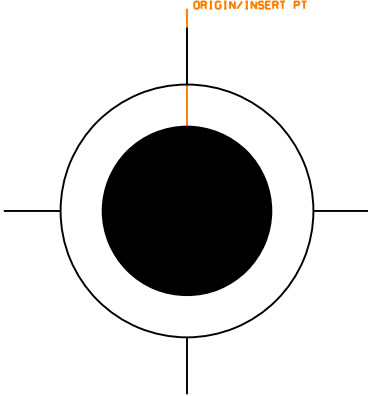
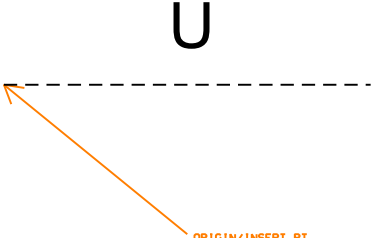
		
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Geotechnical: CUDRTT CONSOL UNDRND TRIAXIAL TEST Element type: Symbol	Geotechnical: DSCHIC BORING WITH INCLINOMETER Element type: Symbol	Geotechnical: DSCHOL DRIVE SAMPLED SPT AND COR Element type: Symbol
		
Geotechnical: DSCHPT DR SAMP SPT AND COR HYDR PRESS TESTED Element type: Symbol	Geotechnical: DSCHPZ DR SAMP SPT AND COR WITH PIEZOMETER Element type: Symbol	Geotechnical: DSCPZT DR SAMP SPT COR HYDR PRESS TST PZMTR Element type: Symbol

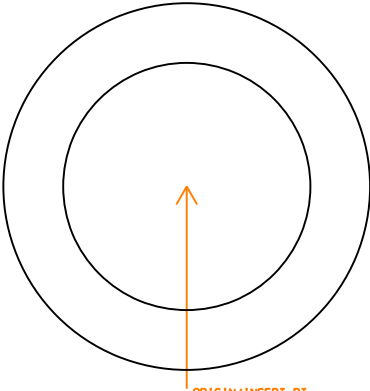
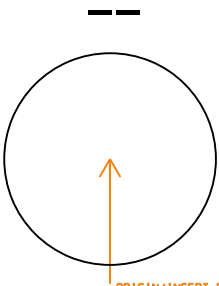
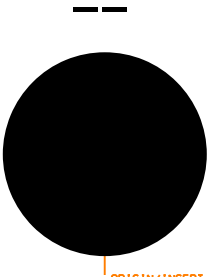
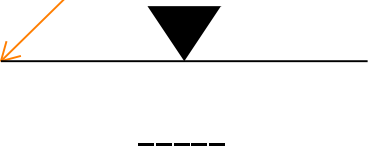
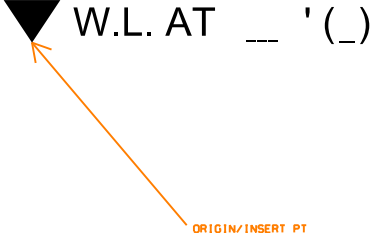
		
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Geotechnical: FBLCK2 FAULT BLOCK MOVEMENT 2 Element type: Symbol	Geotechnical: FDRAIN FOUNDATION DRAIN Element type: Symbol	Geotechnical: HAHNUM HAND AUGER HOLE NUMBER Element type: Symbol
		
Geotechnical: HANGF1 HIGH ANGLE FAULT 1 Element type: Symbol	Geotechnical: HANGF2 HIGH ANGLE FAULT 2 Element type: Symbol	Geotechnical: HDHNUM HAND DUG HOLE NUMBER Element type: Symbol

		
Geotechnical: HEXAGN HEXAGON SYMBOL Element type: Symbol	Geotechnical: HOLNUM HOLE NUMBER ELEVATION Element type: Symbol	Geotechnical: HRZBED HORIZONTAL BEDS Element type: Symbol
		
Geotechnical: ICCSNG INCLINOMETER CASING Element type: Symbol	Geotechnical: MOISTC MOISTURE CONTENT Element type: Symbol	Geotechnical: NSAHOL NONSAMPLED AREA OF HOL Element type: Symbol
		
Geotechnical: OBSHOL PIEZOMETER OR OBSERVAT HOLE Element type: Symbol	Geotechnical: OPBLOG OPEN BORING LOG Element type: Symbol	Geotechnical: PAHNUM POWER AUGER HOLE NUMBER Element type: Symbol

		 
Geotechnical: PIEZOM PIEZOMETER Element type: Symbol	Geotechnical: PROPEX PROPOSED EXPLORATION Element type: Symbol	Geotechnical: PTHNUM PERC TEST HOLE NUMBER Element type: Symbol
		 
Geotechnical: PZABD PIEZOMETER ABANDONED Element type: Symbol	Geotechnical: PZUNIT PIEZOMETER SENSING UNIT Element type: Symbol	Geotechnical: RDHNUM ROTARY DRILL HOLE NUMBER Element type: Symbol
		
Geotechnical: RFWELL RELIEF WELL Element type: Symbol	Geotechnical: RSLASH REFUSAL SLASHES Element type: Symbol	Geotechnical: SAMPLE SAMPLE Element type: Symbol

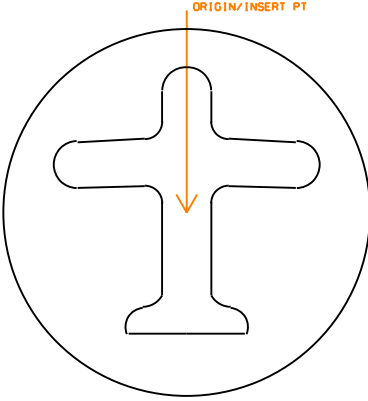
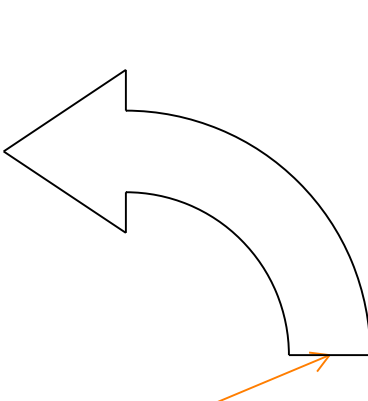
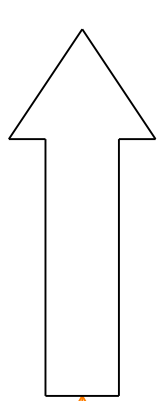
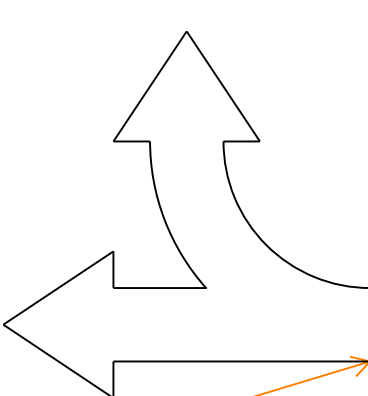
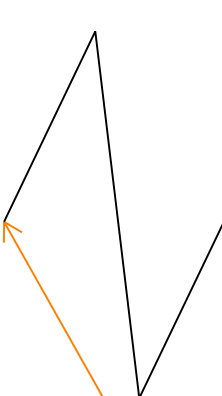
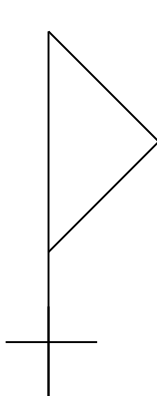
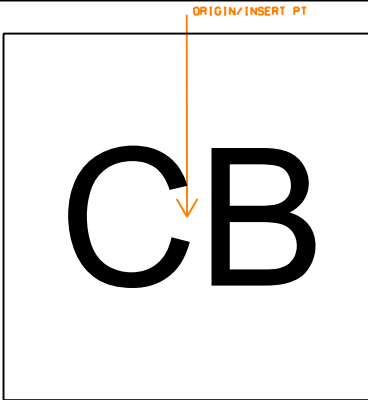
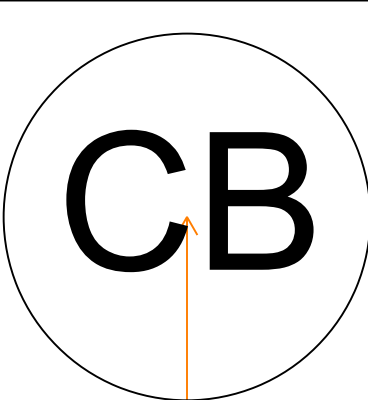
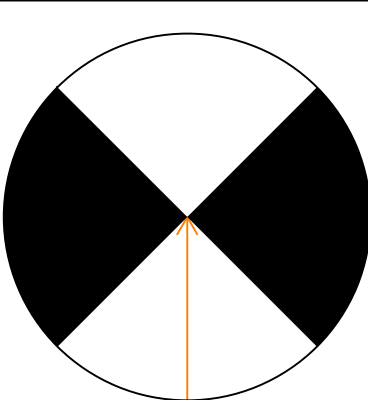
		
Geotechnical: SDIJNT STRIKE DIP OF INCLINED Element type: Symbol	Geotechnical: SQUARE SQUARE SYMBOL Element type: Symbol	Geotechnical: STKLNG STICKLOG LEGEND DETAIL Element type: Symbol
		
Geotechnical: STKLOG STICKLOG Element type: Symbol	Geotechnical: STRKDP STRIKE DIP Element type: Symbol	Geotechnical: STRKVJ STRIKE OF VERTICAL JOI Element type: Symbol
		
Geotechnical: STRKVP STRIKE W VERTICAL DIP Element type: Symbol	Geotechnical: SYNCLN SYNCLINE Element type: Symbol	Geotechnical: TPIOB TEST PIT IN OVERBURDEN Element type: Symbol

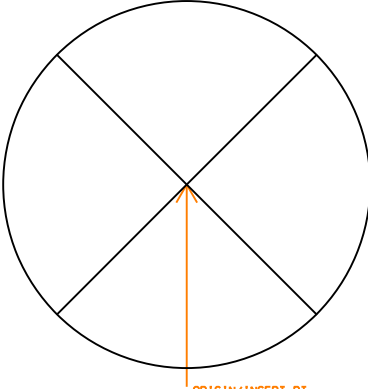
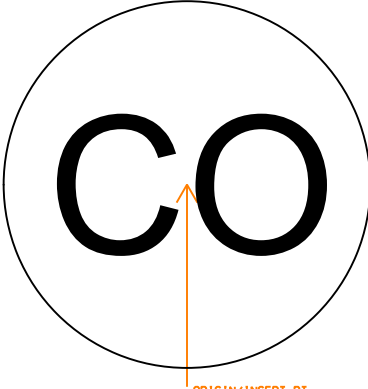
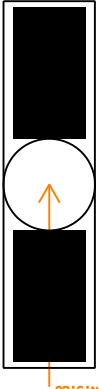
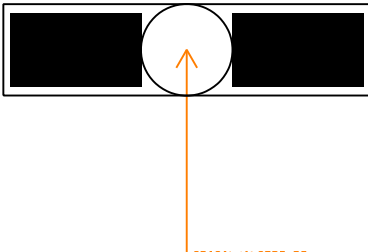
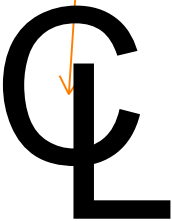
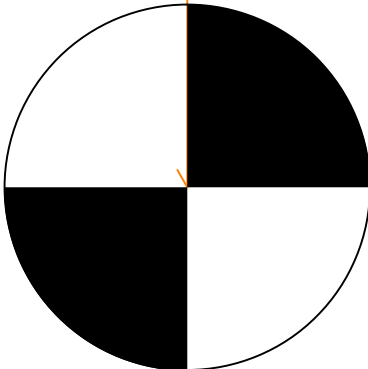
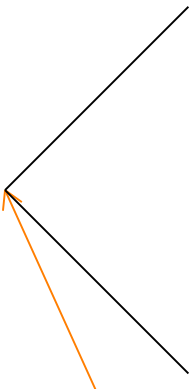
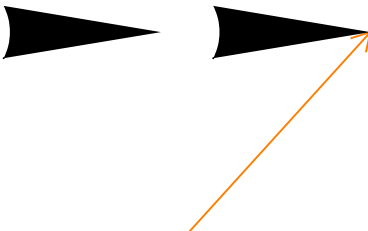
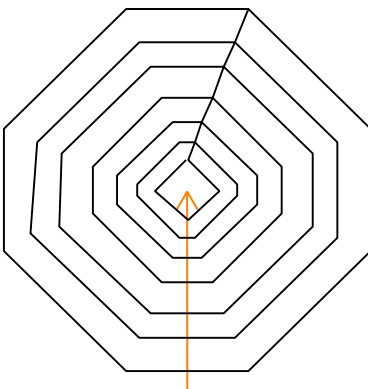
		
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Geotechnical: UCELL UPLIFT CELL Element type: Symbol	Geotechnical: UCONUD UNCONSOLIDATED UNDRAINED Element type: Symbol	Geotechnical: UCONUT UNCONSOL UNDRND TAXIAL TEST Element type: Symbol
		
Geotechnical: UDENIS UNDISTURBED DENISON OR PUSH Element type: Symbol	Geotechnical: UDUNPZ UNDISTURBED SAMP BORING PIEZOMETER Element type: Symbol	Geotechnical: ULIMIT UNSATISFACTORY LIMIT Element type: Symbol

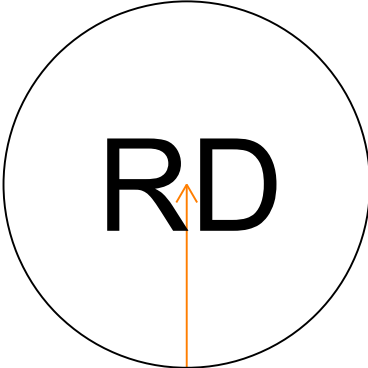
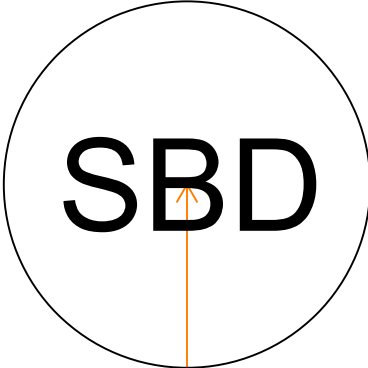
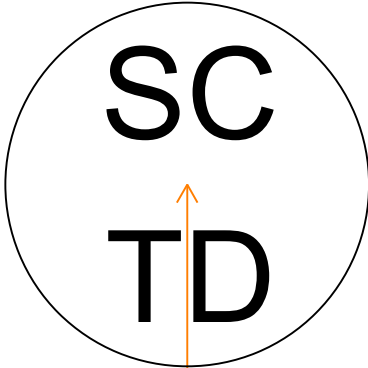
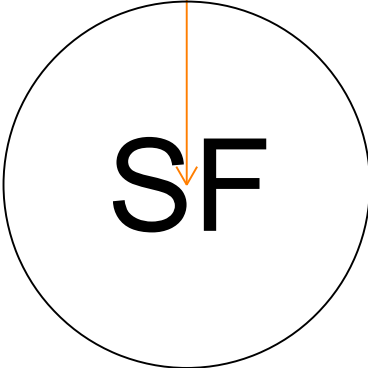
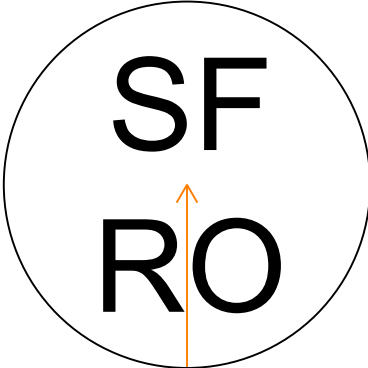
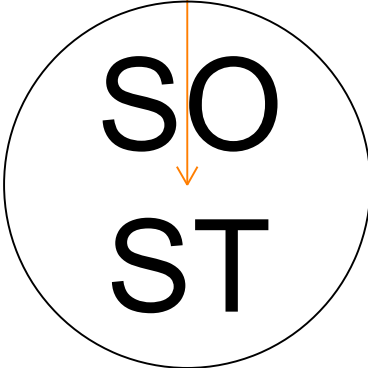
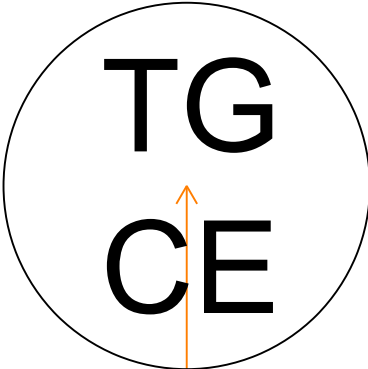
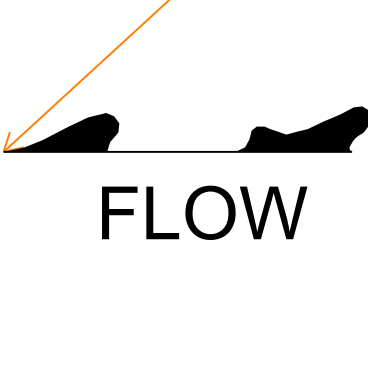
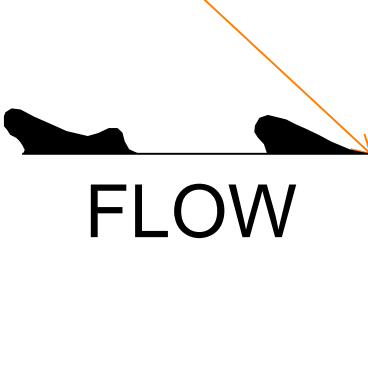
		 
Geotechnical: VCHHPT VERTICAL CORE HOLE HYDR PRESS TESTED Element type: Symbol	Geotechnical: VCHOL VERTICAL CORE HOLE Element type: Symbol	Geotechnical: VHNUM VIBRACORE HOLE NUMBER Element type: Symbol
	 	
Geotechnical: WASHBR WASHBORED Element type: Symbol	Geotechnical: WBHNUM WASH BORING HOLE NUMBER Element type: Symbol	Geotechnical: WLEVDL WATER LEVEL DATA LEFT Element type: Symbol
 Geotechnical: WTRLEV WATER LEVEL Element type: Symbol		

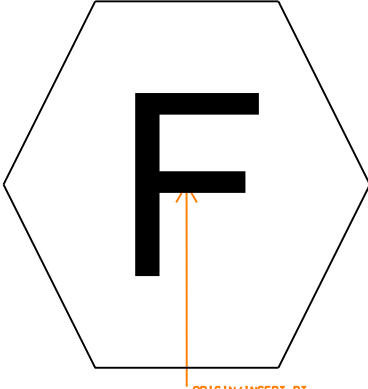
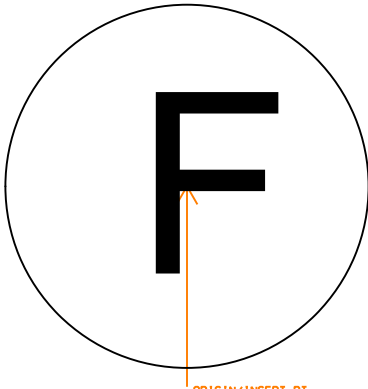
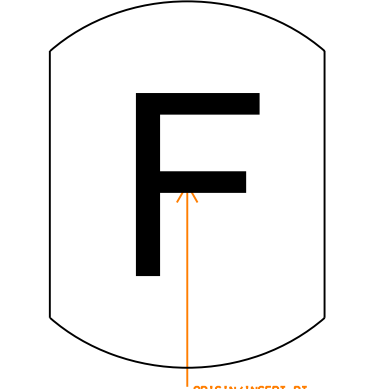
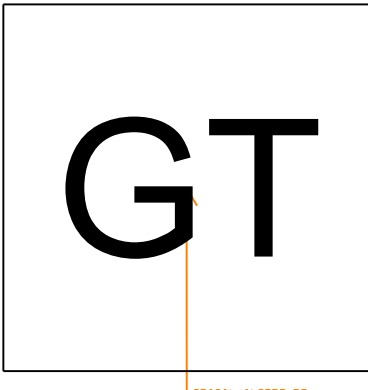
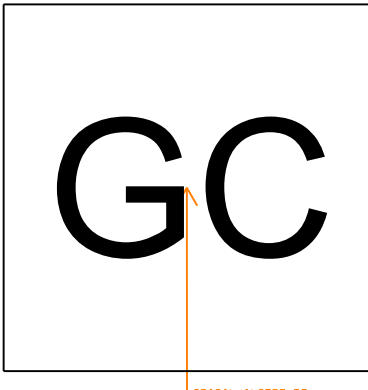
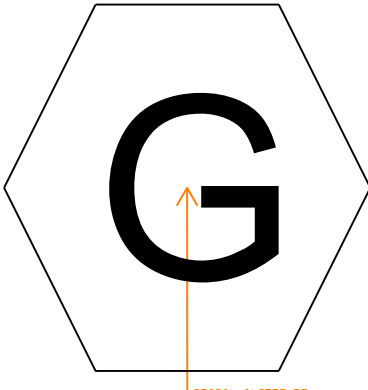
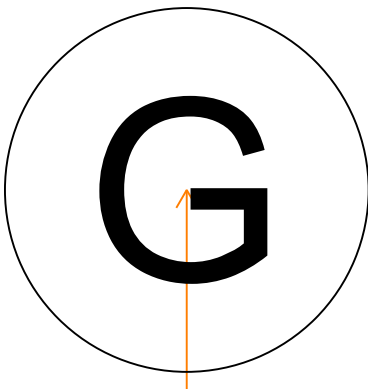
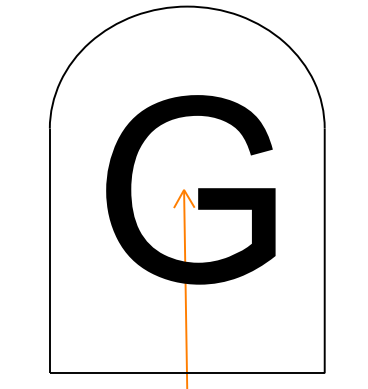
7 Civil Symbols Library

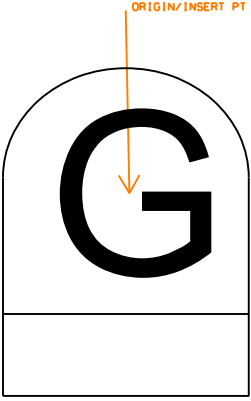
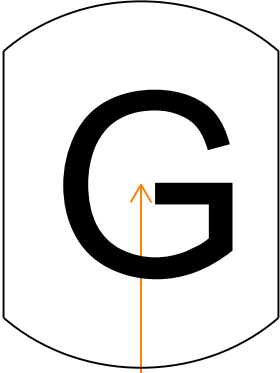
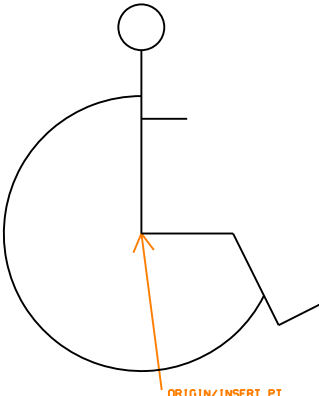
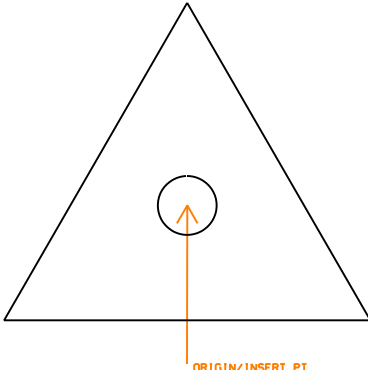
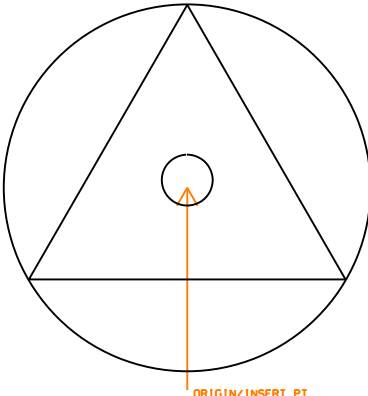
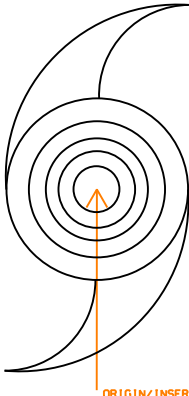
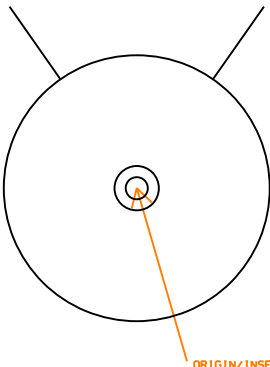
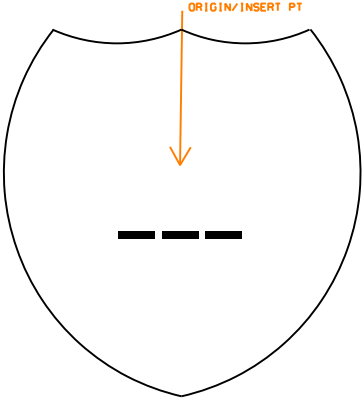
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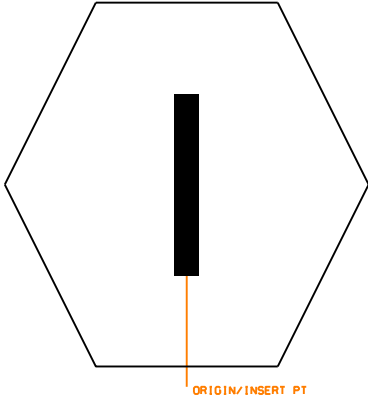
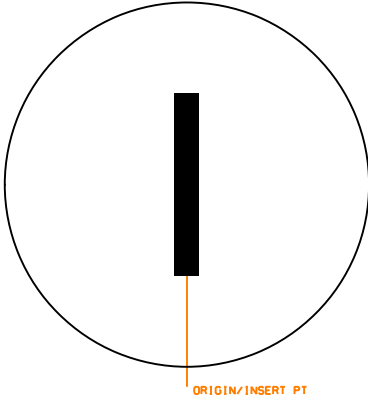
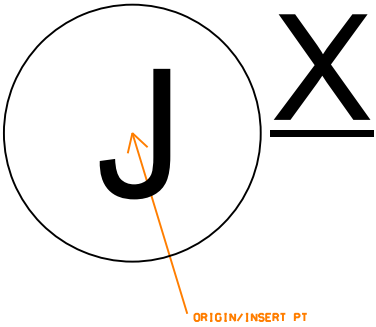
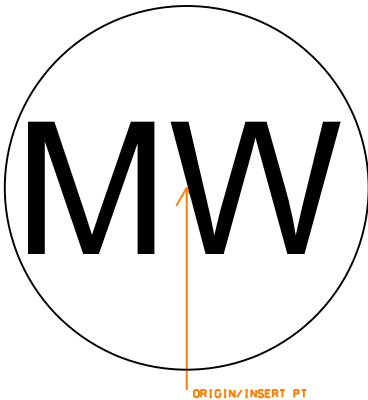
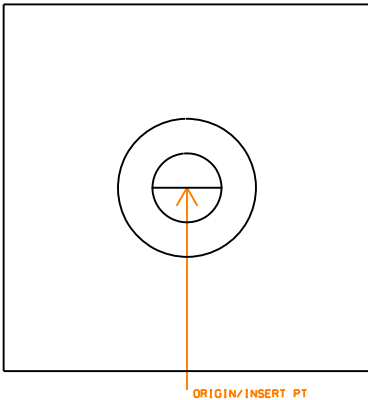
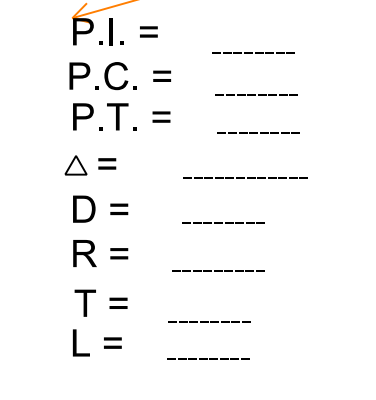
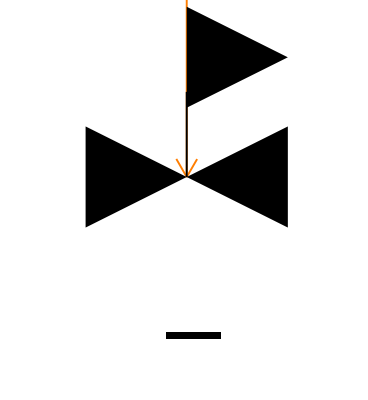
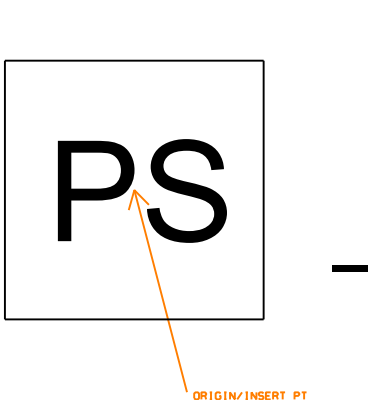
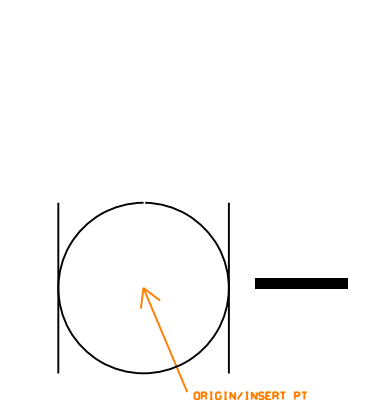
		
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Civil: ARRST STRAIGHT AND TURN ARROW Element type: Symbol	Civil: BREAK BREAK LINE SYMBOL Element type: Symbol	Civil: BUOY BUOY Element type: Symbol
		
Civil: CATBSN CATCH BASIN Element type: Symbol	Civil: CATBSR ROUND CATCH BASIN Element type: Symbol	Civil: CDHDR CORE DRILL HOLE DRILLED Element type: Symbol

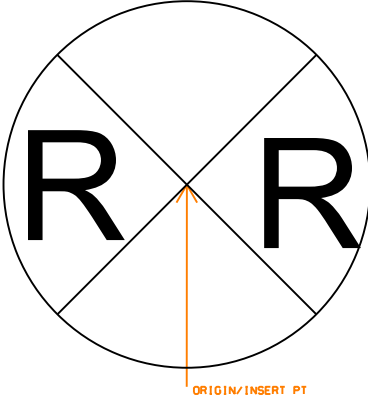
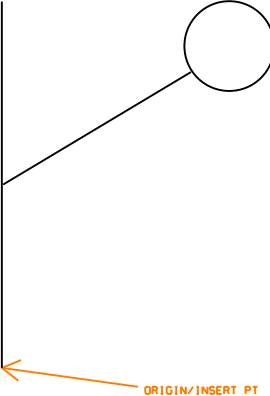
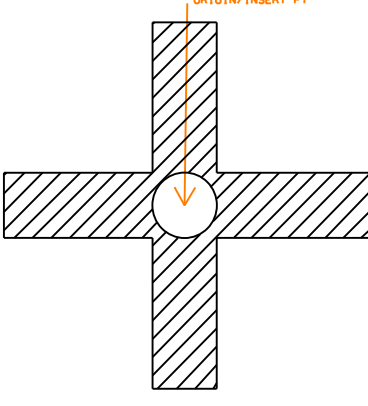
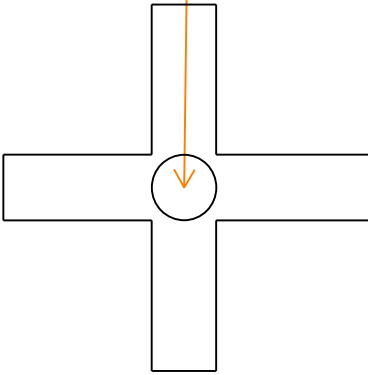
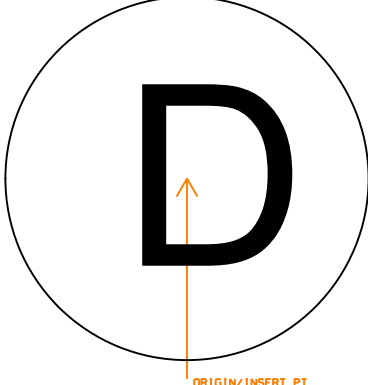
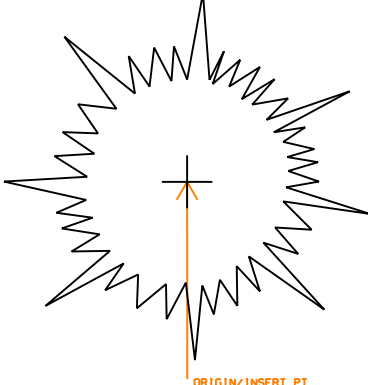
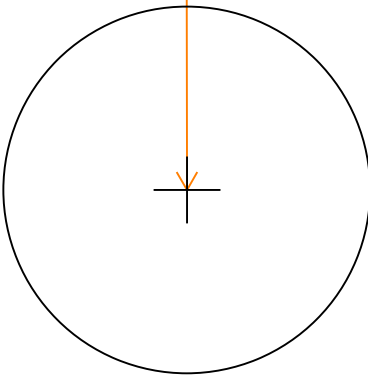
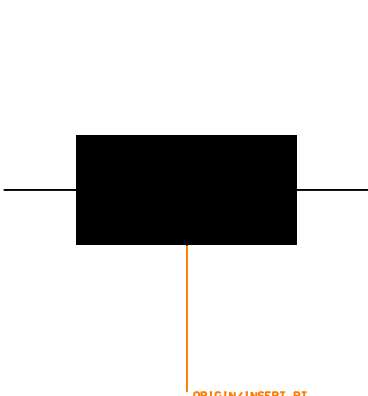
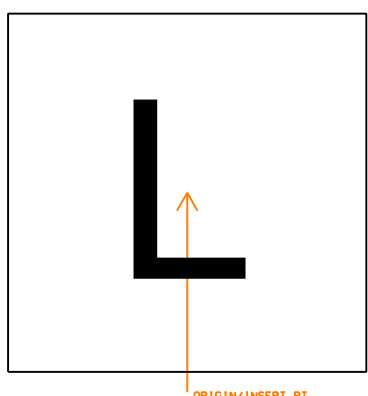
		
Civil: CDHUR CORE DRILL HOLE UNDRILLED Element type: Symbol	Civil: CLNOUT CLEANOUT Element type: Symbol	Civil: CNR90 CORNER SOLID 90 Element type: Symbol
		
Civil: CNRSF CORNER SOLID FLAT Element type: Symbol	Civil: CNTLIN CENTERLINE SYMBOL Element type: Symbol	Civil: COGRAV CENTER OF GRAVITY SYMBOL Element type: Symbol
		
Civil: CULVEE CULVERT END SYMBOL Element type: Symbol	Civil: DBLARR DOUBLE ARROW TERMINATOR Element type: Symbol	Civil: DRLHOL DRILL HOLE Element type: Symbol

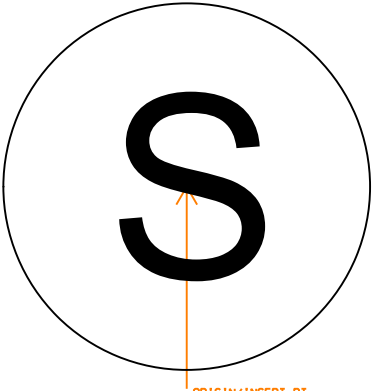
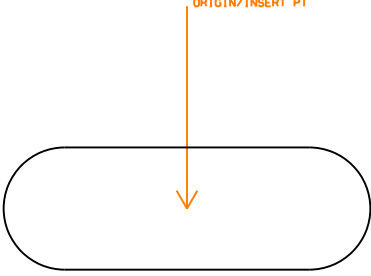
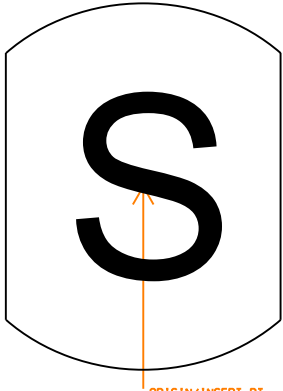
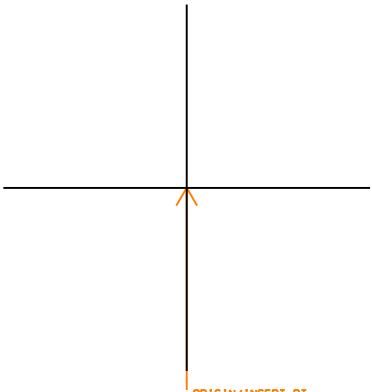
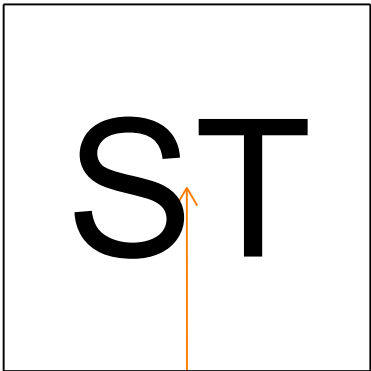
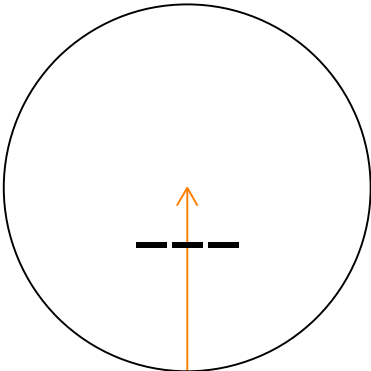
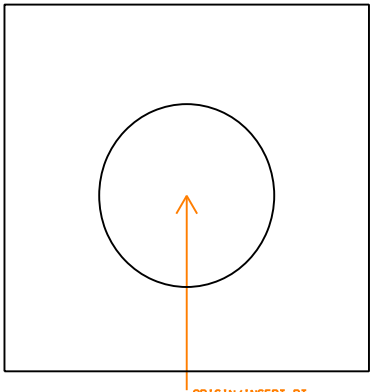
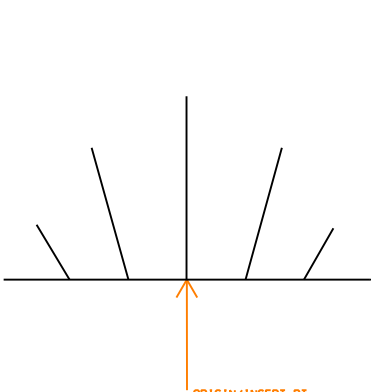
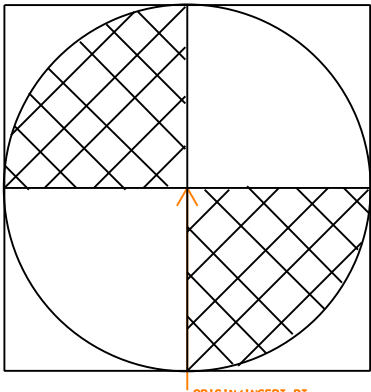
		
Civil: ECRD ROCK DAM SEDIMENT TRAP Element type: Symbol	Civil: ERSBD STRAW BALE DAM Element type: Symbol	Civil: ERSCTD SEDIMENT CTRL TMPRY DIVRSION Element type: Symbol
		
Civil: ERSF SILT FENCE Element type: Symbol	Civil: ERSFRO SILT FENCE ROCK OVERFLOW Element type: Symbol	Civil: ERSOST STONE OUTLET SEDIMENT TRAP Element type: Symbol
		
Civil: ERTGCE CONSTRUCTION ENTRANCE EXIT Element type: Symbol	Civil: FLARRL FLOW ARROW LEFT IN 0 POINT Element type: Symbol	Civil: FLARRR FLOW ARROW RIGHT IN 0 POINT Element type: Symbol

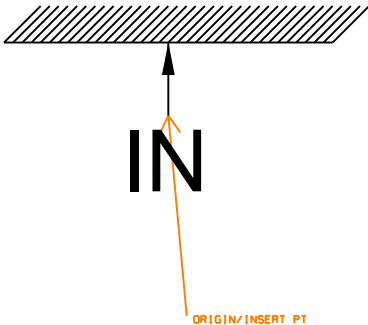
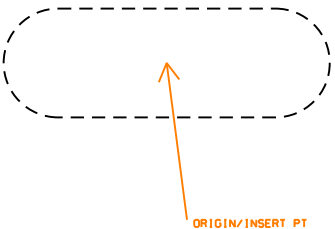
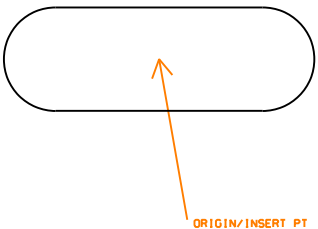
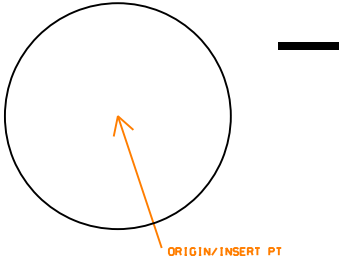
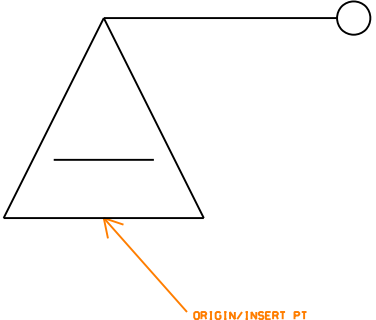
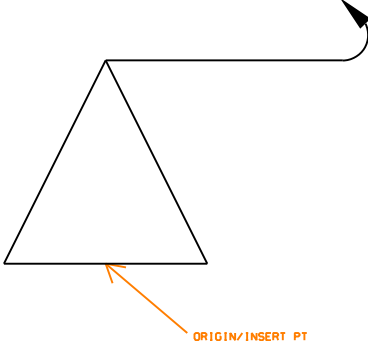
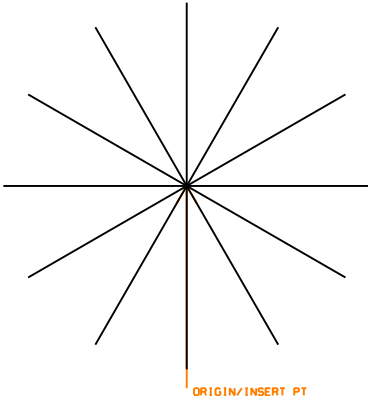
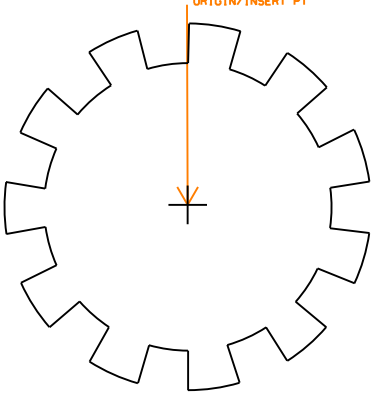
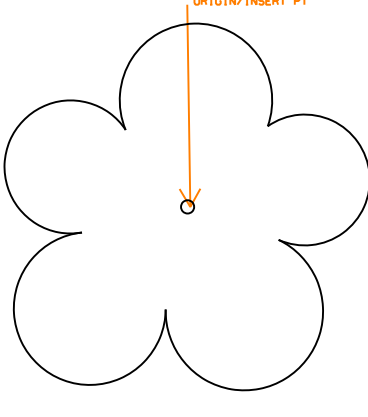
		
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Civil: GREASE GREASE TRAP Element type: Symbol	Civil: GRITCH GRIT CHAMBER Element type: Symbol	Civil: GSMETR NATURAL GAS METER Element type: Symbol
		
Civil: GSMHOL NATURAL GAS MANHOLE Element type: Symbol	Civil: GSPLNT GAS PLANT Element type: Symbol	Civil: GSRECR NATURAL GAS RECEIVER Element type: Symbol

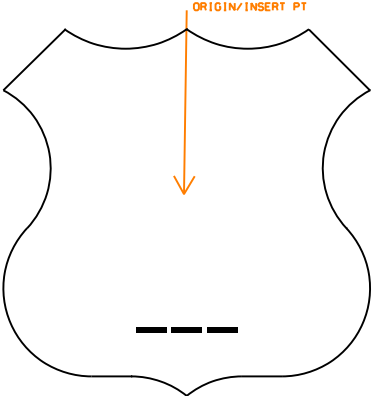
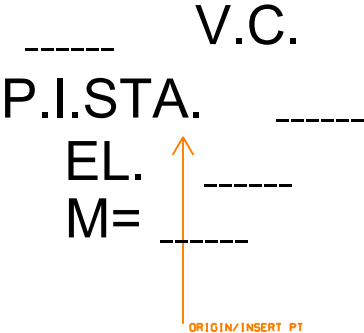
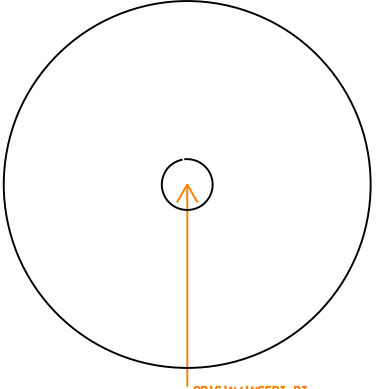
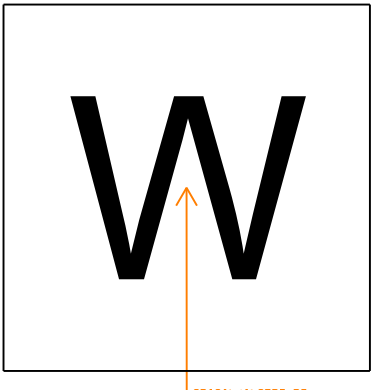
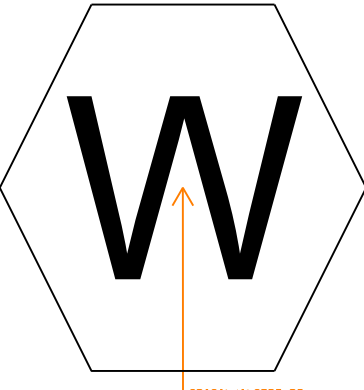
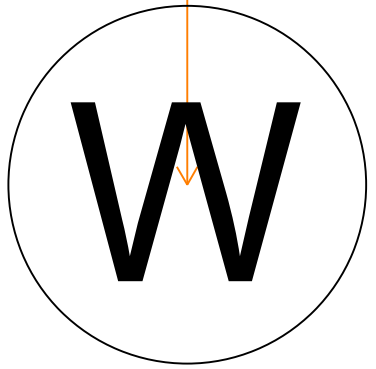
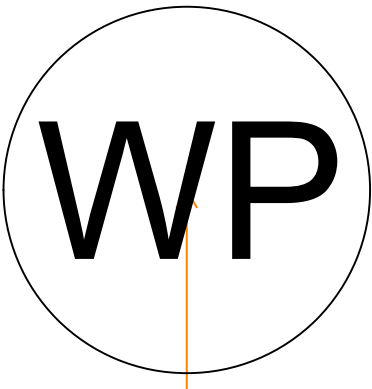
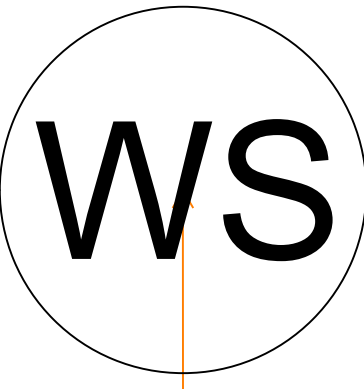
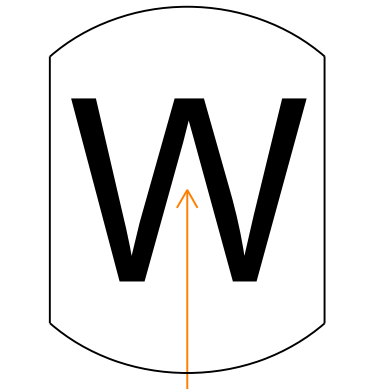
		
Civil: GSTRAP NATURAL GAS TRAP Element type: Symbol	Civil: GSVALT GAS VALVE VAULT Element type: Symbol	Civil: HEADWL HEADWALL Element type: Symbol
		
Civil: HNDCAP HANDICAP CHAIR SYMBOL Element type: Symbol	Civil: HORCPT HORIZONTAL CONTROL PT Element type: Symbol	Civil: HOVCPT HORIZ VERT CONTROL PT Element type: Symbol
		
Civil: HUREYE HURRICANE EYE Element type: Symbol	Civil: HYDRNT FIRE HYDRANT Element type: Symbol	Civil: INSHWY INTERSTATE HIGHWAY SYMBOL Element type: Symbol

		
Civil: IWMETR INDUSTRIAL WASTE WATER METER Element type: Symbol	Civil: IWMHOL INDUSTRIAL WASTE WATER MANHOLE Element type: Symbol	Civil: JNBX EXTERIOR UTIL JUNCTION BOX Element type: Symbol
		 P.I. = _____ P.C. = _____ P.T. = _____ Δ = _____ D = _____ R = _____ T = _____ L = _____
Civil: MONWEL MONITORING WELL Element type: Symbol	Civil: PHOCPT PHOTO CONTROL POINT Element type: Symbol	Civil: PIINFO PI INFORMATION Element type: Symbol
		
Civil: PIVALV POST INDICATOR VALVE Element type: Symbol	Civil: PMPSTA PUMP STATION Element type: Symbol	Civil: RGVALV REGULATOR VALVE Element type: Symbol

		
Civil: RRSIGN RAIL SIGNAL Element type: Symbol	Civil: RRSWTC RAIL SWITCH Element type: Symbol	Civil: SCNRH SECTION CORNER HATCHED Element type: Symbol
		
Civil: SCNRO SECTION CORNER OPEN Element type: Symbol	Civil: SDMHOL STORM DRAINAGE MANHOLE Element type: Symbol	Civil: SHRUBC CONIFEROUS SHRUB Element type: Symbol
		
Civil: SHRUBD DECIDUOUS SHRUB Element type: Symbol	Civil: SIGN SIGN Element type: Symbol	Civil: SNLIFT SANITARY SEWER LIFT STATION Element type: Symbol

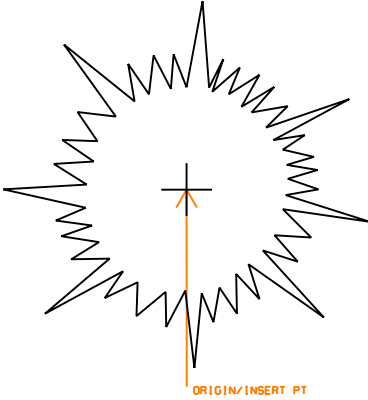
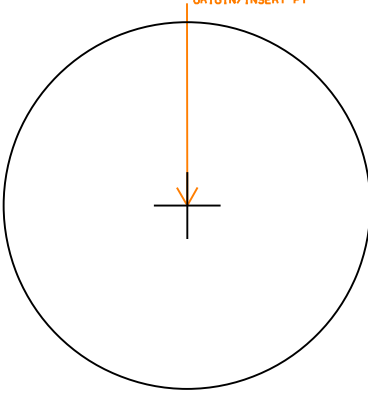
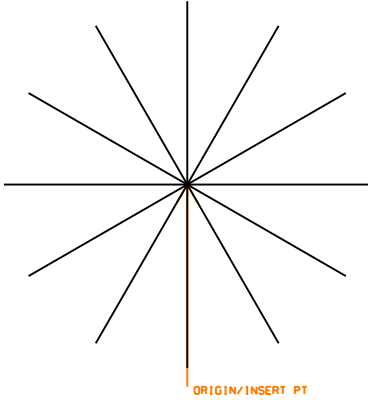
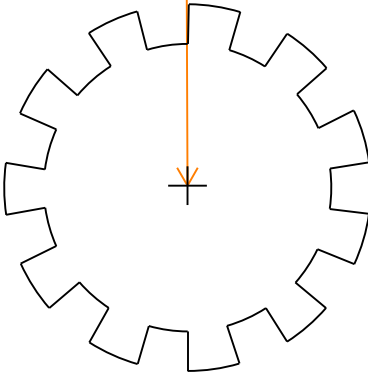
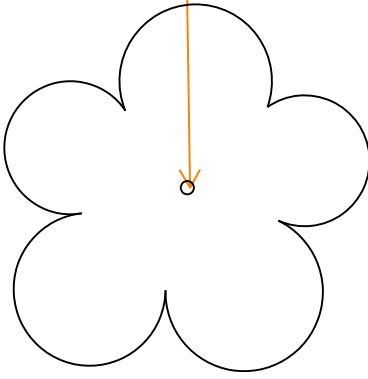
		
Civil: SNMHOL SANITARY MANHOLE Element type: Symbol	Civil: SNPVSL SANITARY PRESSURE VESSEL Element type: Symbol	Civil: SNVALT SANITARY VALVE VAULT Element type: Symbol
		
Civil: SPOTEL GROUND SPOT ELEVATION Element type: Symbol	Civil: SPTANK SEPTIC TANK Element type: Symbol	Civil: STHWY STATE HIGHWAY SYMBOL Element type: Symbol
		
Civil: STMPIT STEAM PIT Element type: Symbol	Civil: SWAMP SWAMP Element type: Symbol	Civil: TIDEG TIDE GAGE Element type: Symbol

		
Civil: TIRETR TIRE TREDDLE Element type: Symbol	Civil: TNKBG TANK BELOW GROUND Element type: Symbol	Civil: TNKHAG TANK HORIZ ABOVE GROUND Element type: Symbol
		
Civil: TNKVAG TANK VERTICAL ABOVE GROUND Element type: Symbol	Civil: TRACR TRAFFIC ARM WTH CARD READER Element type: Symbol	Civil: TRAMS TRAFFIC ARM MECHANCL SWING Element type: Symbol
		
Civil: TREEC CONIFEROUS TREE Element type: Symbol	Civil: TREED DECIDUOUS TREE Element type: Symbol	Civil: TREEG GENERIC TREE Element type: Symbol

		
Civil: USHWY US HIGHWAY SYMBOL Element type: Symbol	Civil: VCDATA VERTICAL CURVE DATA Element type: Symbol	Civil: VERCPT VERTICAL CONTROL POINT Element type: Symbol
		
Civil: WAHHOL WATER HANDHOLE Element type: Symbol	Civil: WAMETR WATER METER Element type: Symbol	Civil: WAMHOL WATER MANHOLE Element type: Symbol
		
Civil: WAPLNT WATER PLANT Element type: Symbol	Civil: WASOFT WATER SOFTENER Element type: Symbol	Civil: WAVALT WATER VALVE VAULT Element type: Symbol

8 Landscape Symbols Library

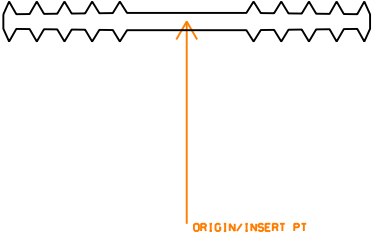
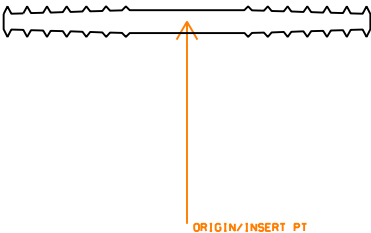
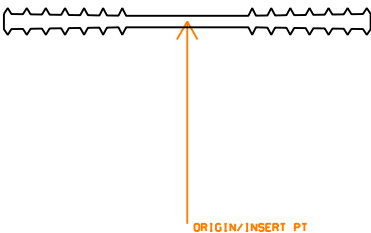
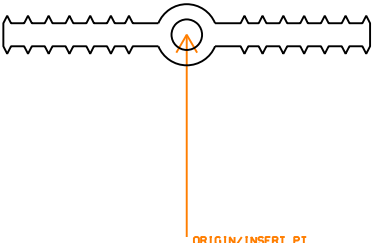
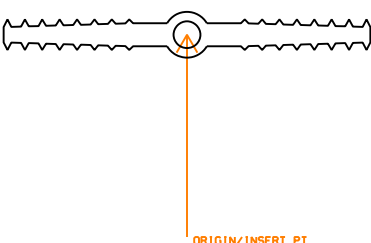
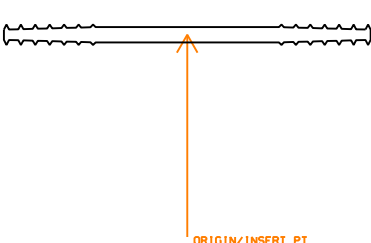
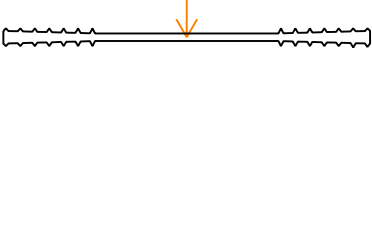
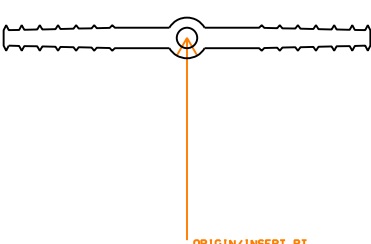
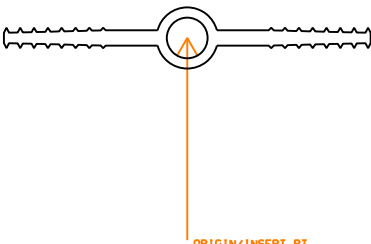
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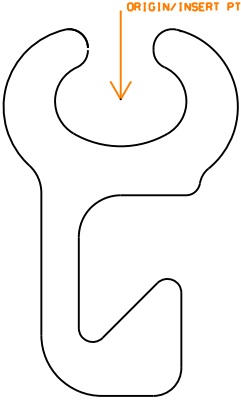
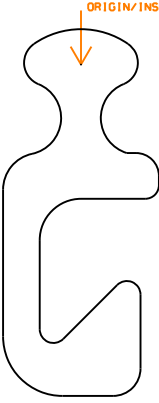
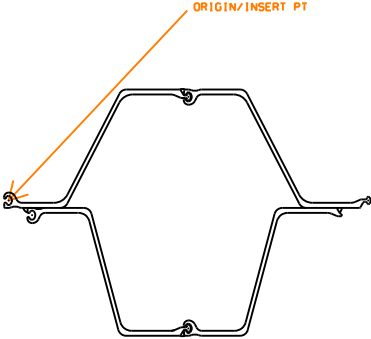
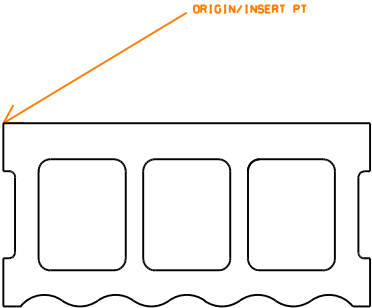
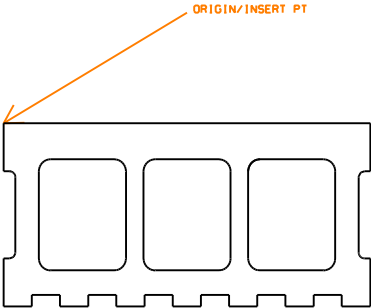
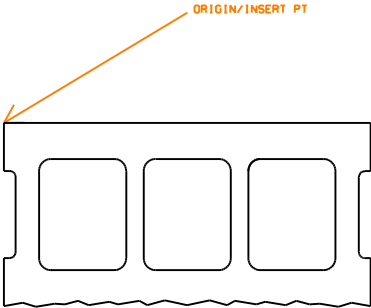
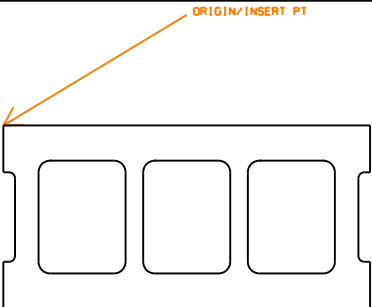
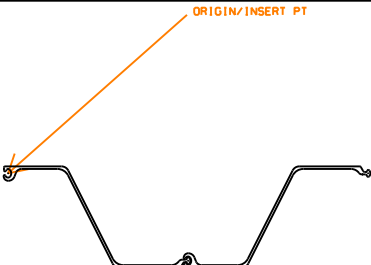
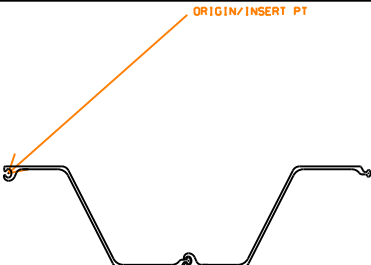
		
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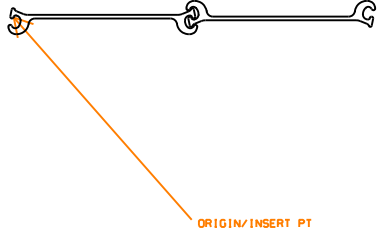
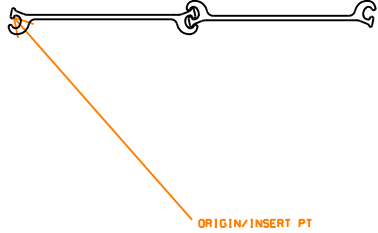
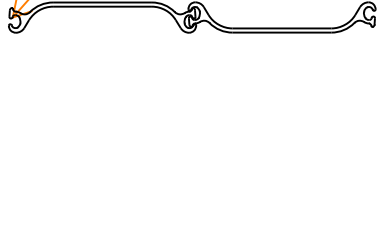
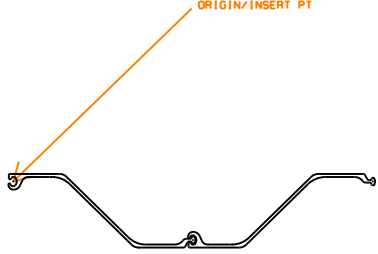
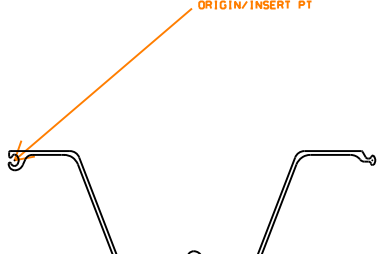
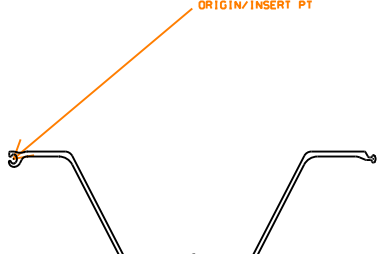
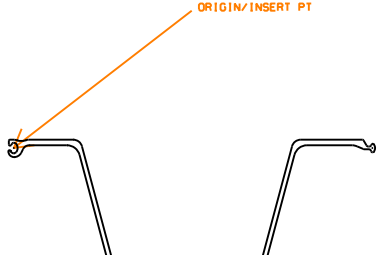
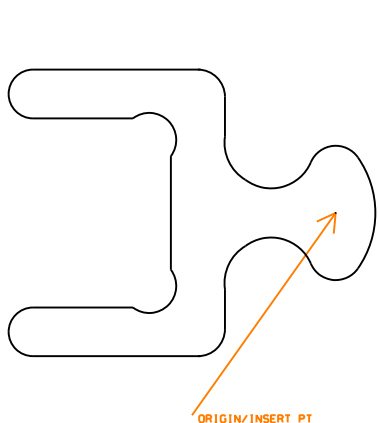
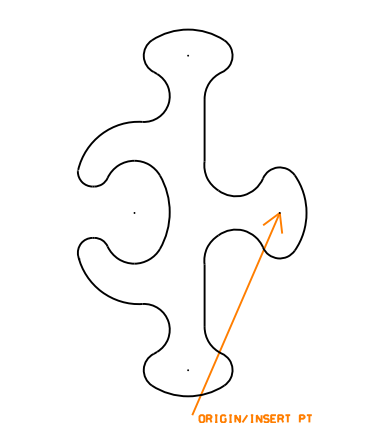
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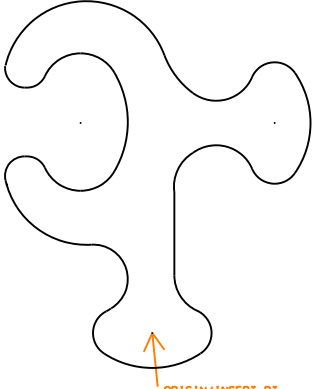
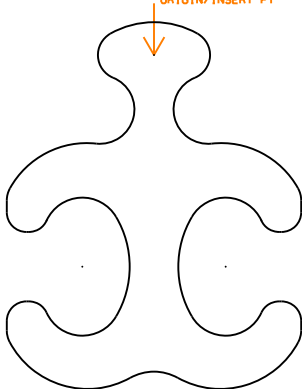
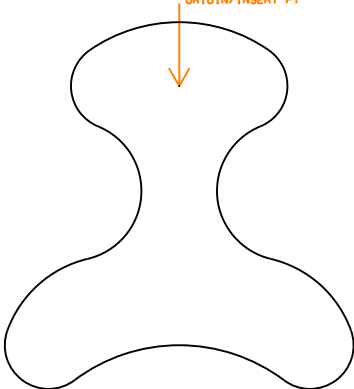
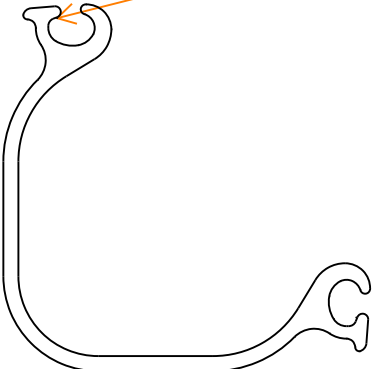
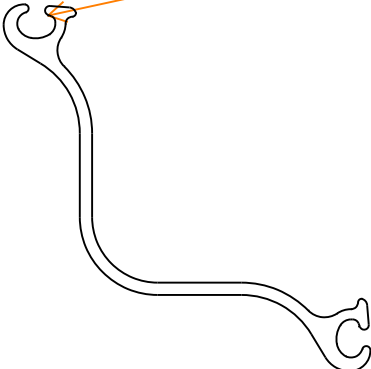
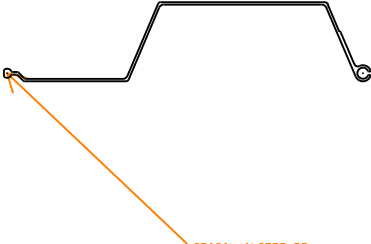
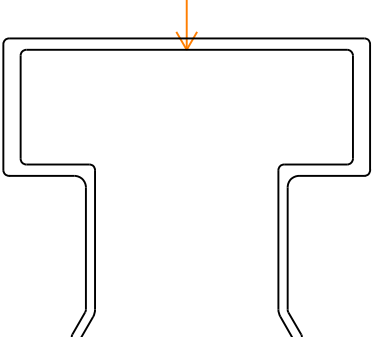
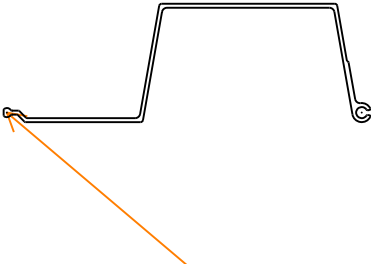
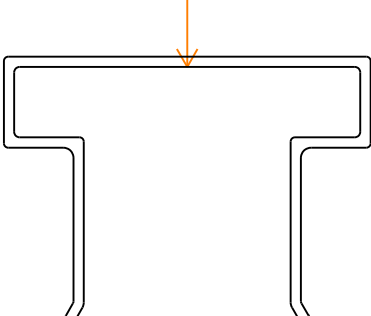
9 Structural Objects Library

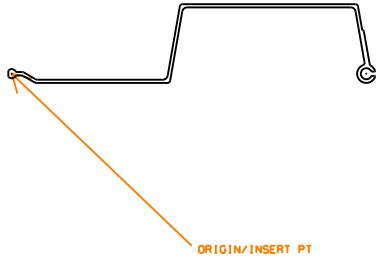
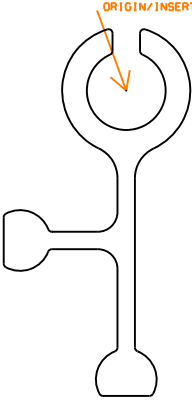
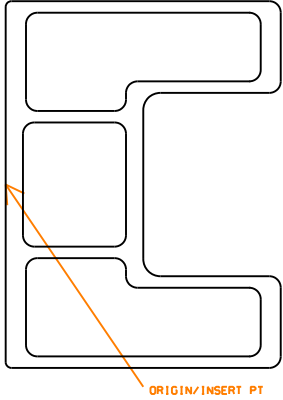
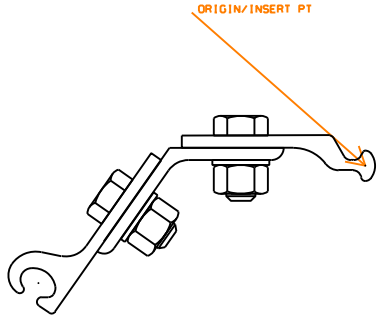
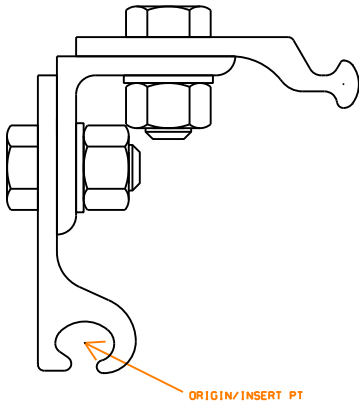
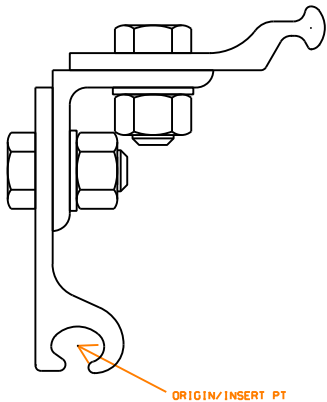
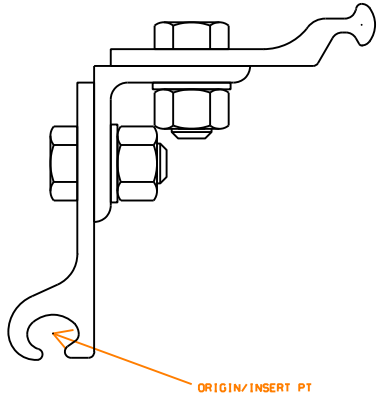
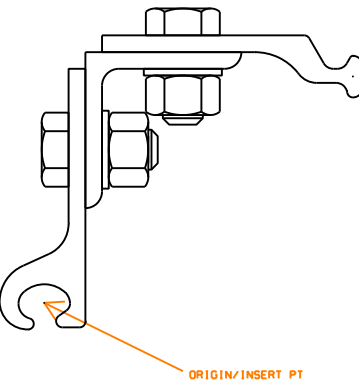
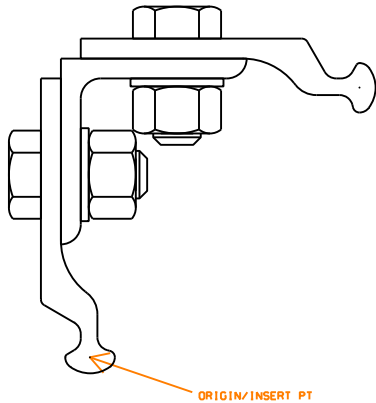
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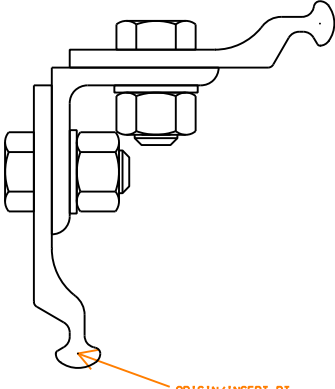
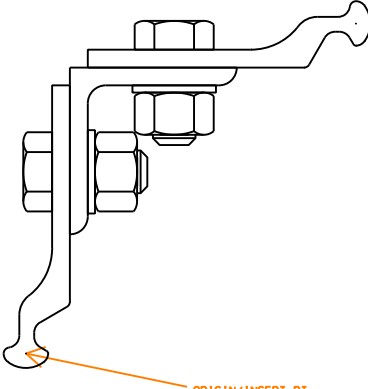
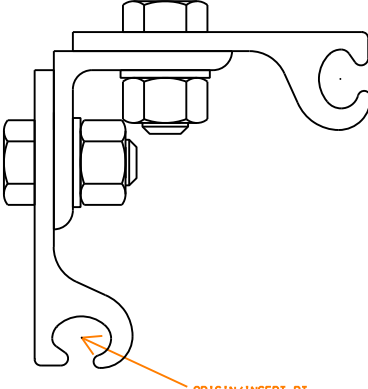
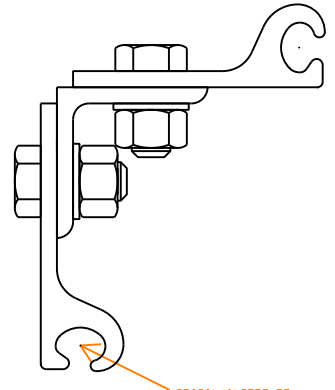
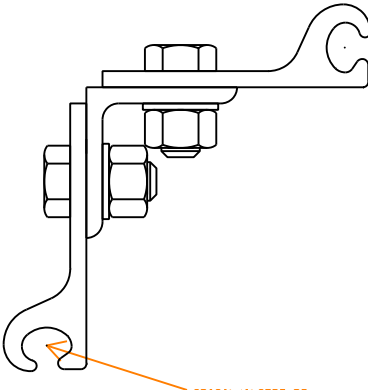
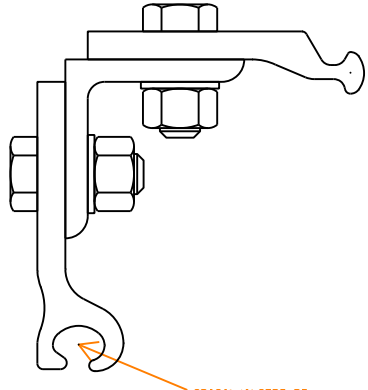
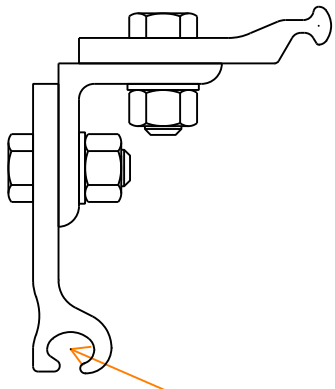
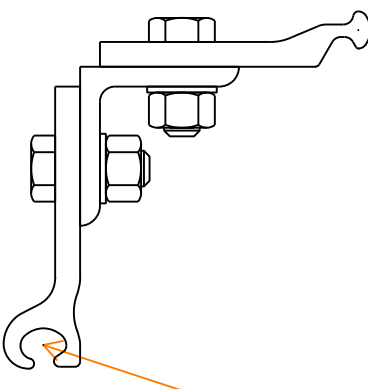
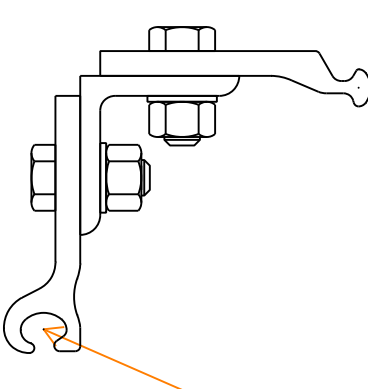
		
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Structural: 6RCBHD 6 IN RIB W CTR BULB HVY DTY Element type: Object	Structural: 6RCBLW 6 IN RIB W CTR BULB LT WT Element type: Object	Structural: 9FLBHD 9 IN FLAT RIBBED HVY DTY Element type: Object
		
Structural: 9FRBLW 9 IN FLAT RIBBED LT WT Element type: Object	Structural: 9RCBHD 9 IN RIB W CTR BULB HVY DTY Element type: Object	Structural: 9RCBLW 9 IN RIB W CTR BULB LT WT Element type: Object

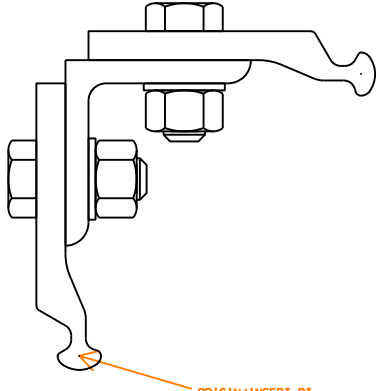
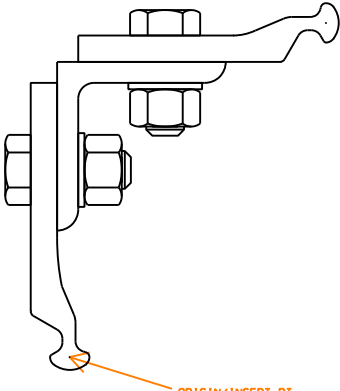
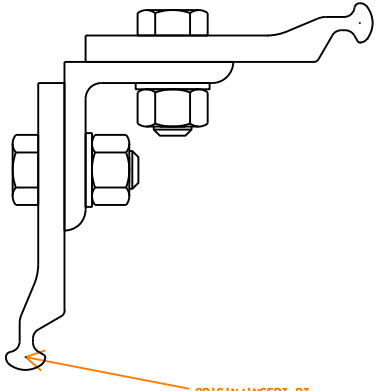
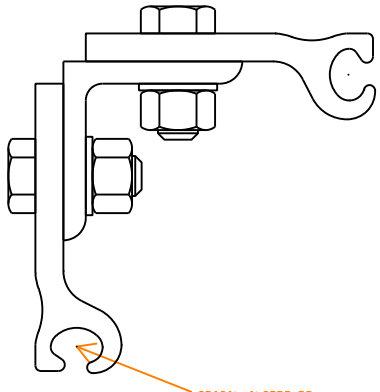
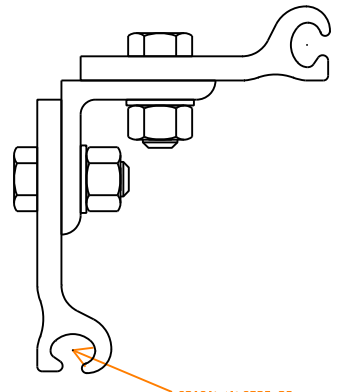
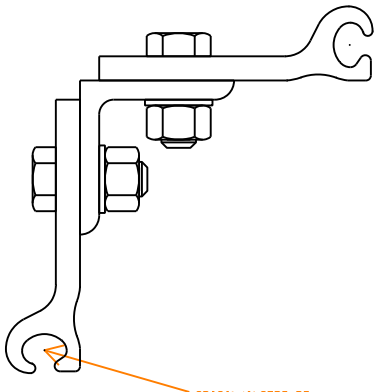
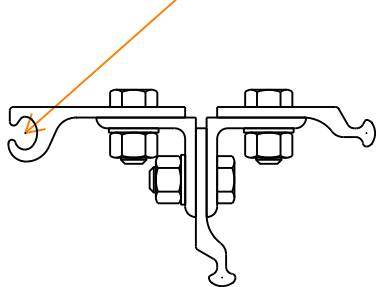
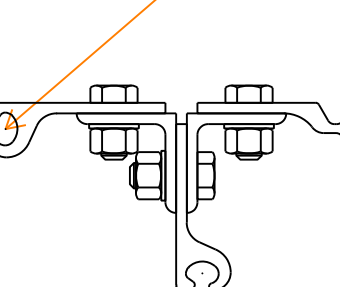
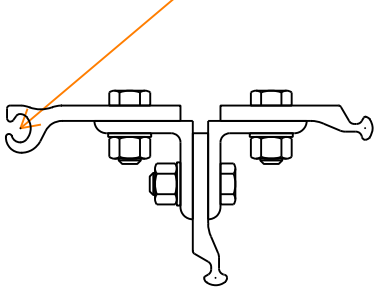
		
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Structural: CMUFL FLUTED CONC BLK 8X8X16 Element type: Object	Structural: CMURIB RIBBED CONC BLK 8X8X16 Element type: Object	Structural: CMUSF SPLIT FACE CONC BLK 8X8X16 Element type: Object
		
Structural: CMUSTR CONC BLOCK 8X8X16 STR. Element type: Object	Structural: PLZ23 PLZ23 SHEET PILING Element type: Object	Structural: PLZ25 PLZ25 SHEET PILING Element type: Object

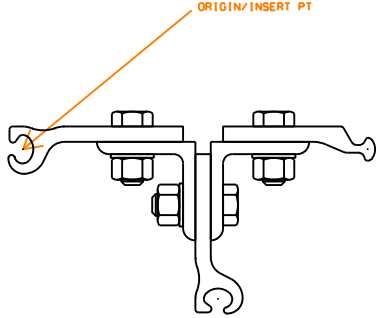
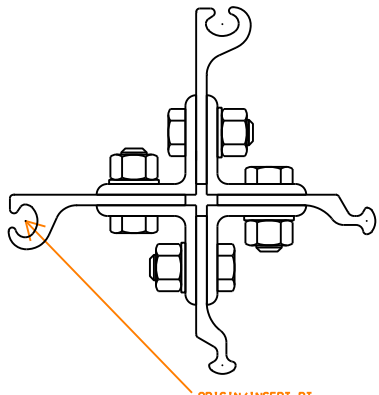
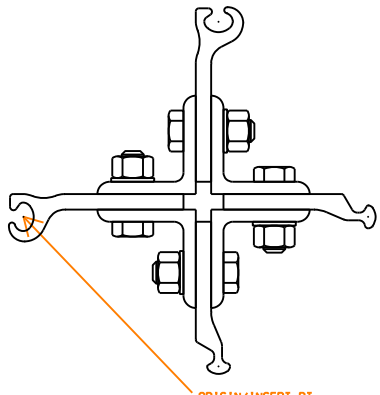
 Diagram showing the cross-section of a PS27.5 Sheet Pile. An orange arrow points to the top-left corner, labeled "ORIGIN/INSERT PT".	 Diagram showing the cross-section of a PS31 Sheet Pile. An orange arrow points to the top-left corner, labeled "ORIGIN/INSERT PT".	 Diagram showing the cross-section of a PSA23 Sheet Pile. An orange arrow points to the top-left corner, labeled "ORIGIN/INSERT PT".
Structural: PS27.5 PS27.5 SHEET PILE Element type: Object	Structural: PS31 PS31 SHEET PILE Element type: Object	Structural: PSA23 PSA23 SHEET PILE Element type: Object
 Diagram showing the cross-section of a PZ22 Sheet Pile. An orange arrow points to the top-left corner, labeled "ORIGIN/INSERT PT".	 Diagram showing the cross-section of a PZ27 Sheet Pile. An orange arrow points to the top-left corner, labeled "ORIGIN/INSERT PT".	 Diagram showing the cross-section of a PZ35 Sheet Pile. An orange arrow points to the top-left corner, labeled "ORIGIN/INSERT PT".
Structural: PZ22 PZ22 SHEET PILE Element type: Object	Structural: PZ27 PZ27 SHEET PILE Element type: Object	Structural: PZ35 PZ35 SHEET PILE Element type: Object
 Diagram showing the cross-section of a PZ40 Sheet Pile. An orange arrow points to the top-left corner, labeled "ORIGIN/INSERT PT".	 Diagram showing the cross-section of a PZBBSM Foster Conn H-Pile. An orange arrow points to the bottom-right corner, labeled "ORIGIN/INSERT PT".	 Diagram showing the cross-section of a PZBULL Foster Conn Bullhead. An orange arrow points to the bottom-right corner, labeled "ORIGIN/INSERT PT".
Structural: PZ40 PZ40 SHEET PILE Element type: Object	Structural: PZBBSM FOSTER CONN H-PILE Element type: Object	Structural: PZBULL FOSTER CONN BULLHEAD Element type: Object

		
Structural: PZCBM FOSTER CONN CBM Element type: Object	Structural: PZJOKR FOSTER CONN JOKER Element type: Object	Structural: PZWOM FOSTER CONN PZ WOM Element type: Object
		
Structural: RC230 RC230 SHEET PILE CONNECTION Element type: Object	Structural: RC231 RC231 SHEET PILE CONNECTION Element type: Object	Structural: SS803 FOSTER SUPERLOC 1540 Element type: Object
		
Structural: SS805 FOSTER CAP 1550 1540 Element type: Object	Structural: SS806 FOSTER SUPERLOC 1560 Element type: Object	Structural: SS807 FOSTER 1560 CAP Element type: Object

		
Structural: SS808 FOSTER SUPERLOC 1550 Element type: Object	Structural: SS809 FOSTER 180 90 CONNECTOR Element type: Object	Structural: SS810 FOSTER SUPERWALE Element type: Object
		
Structural: ZB 27 FOSTER ANGLE FAB CORNER Element type: Object	Structural: ZC270 PZ22 PZ27 L CONNECTION Element type: Object	Structural: ZC271 PZ22 PZ27 L CONNECTION Element type: Object
		
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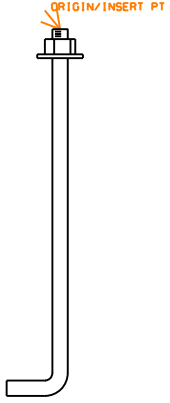
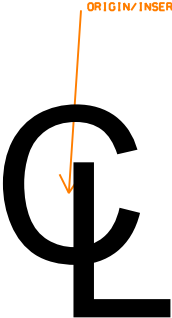
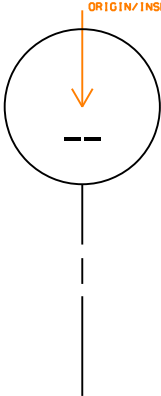
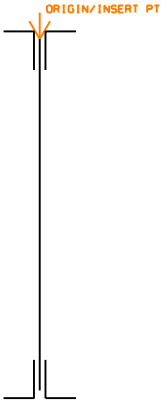
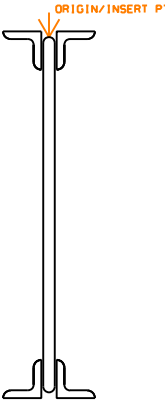
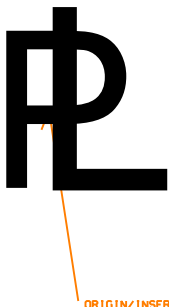
		
Structural: ZC275 PZ22 PZ27 L CONNECTION Element type: Object	Structural: ZC276 PZ22 PZ27 L CONNECTION Element type: Object	Structural: ZC277 PZ22 PZ27 L CONNECTION Element type: Object
		
Structural: ZC278 PZ22 PZ27 L CONNECTION Element type: Object	Structural: ZC279 PZ22 PZ27 L CONNECTION Element type: Object	Structural: ZC350 PZ35 PZ40 L CONNECTION Element type: Object
		
Structural: ZC351 PZ35 PZ40 L CONNECTION Element type: Object	Structural: ZC352 PZ35 PZ40 L CONNECTION Element type: Object	Structural: ZC353 PZ35 PZ40 L CONNECTION Element type: Object

		
Structural: ZC354 PZ35 PZ40 L CONNECTION Element type: Object	Structural: ZC355 PZ35 PZ40 L CONNECTION Element type: Object	Structural: ZC356 PZ35 PZ40 L CONNECTION Element type: Object
		
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Structural: ZT270 PZ22 PZ27 T CONNECTION Element type: Object	Structural: ZT271 PZ22 PZ27 T CONNECTION Element type: Object	Structural: ZT350 PZ35 PZ40 T CONNECTION Element type: Object

		
Structural: ZT351 PZ35 PZ40 T CONNECTION Element type: Object	Structural: ZX270 PZ22 PZ27 CROSS CONNECTION Element type: Object	Structural: ZX350 PZ35 PZ40 CROSS CONNECTION Element type: Object

9 Structural Symbols Library

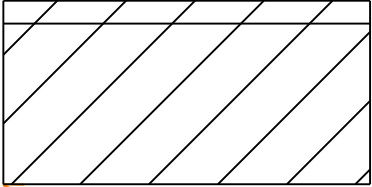
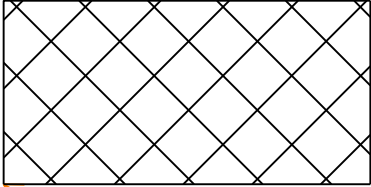
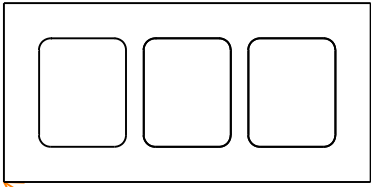
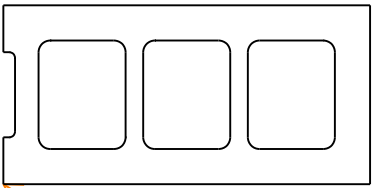
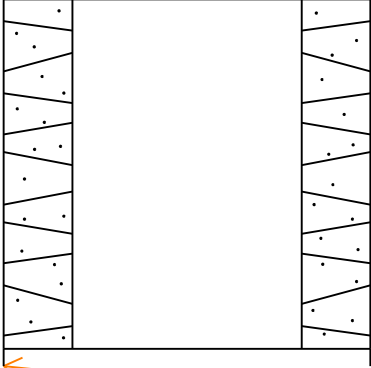
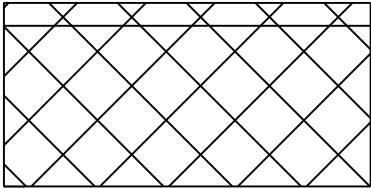
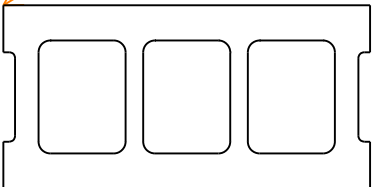
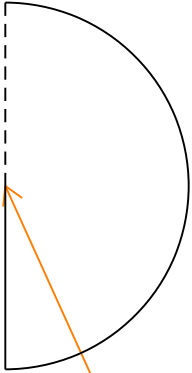
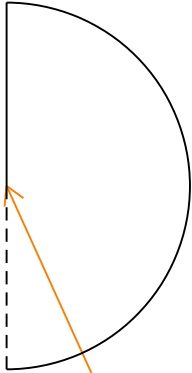
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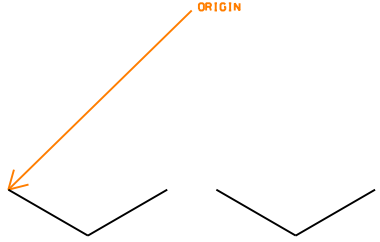
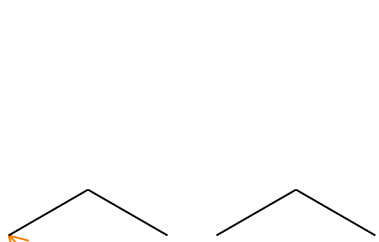
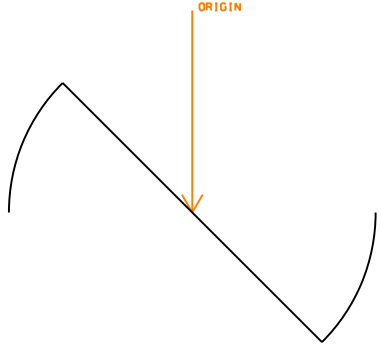
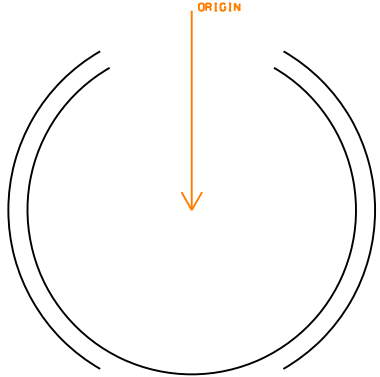
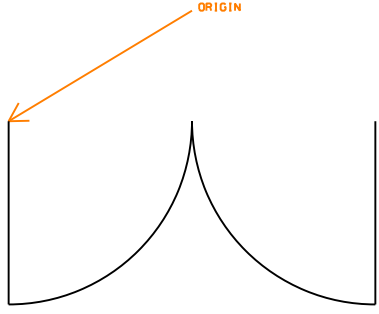
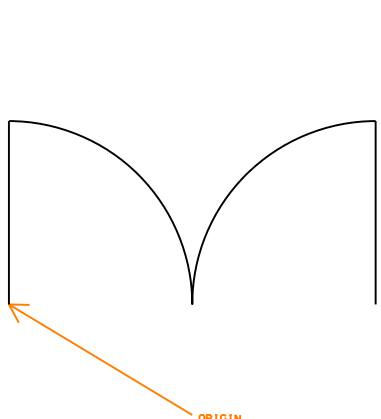
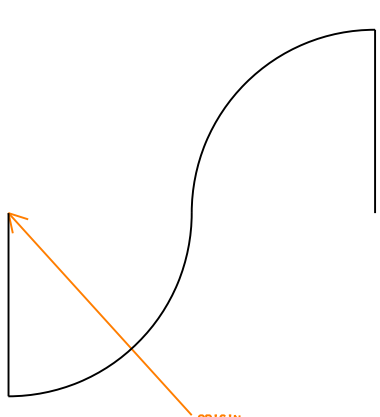
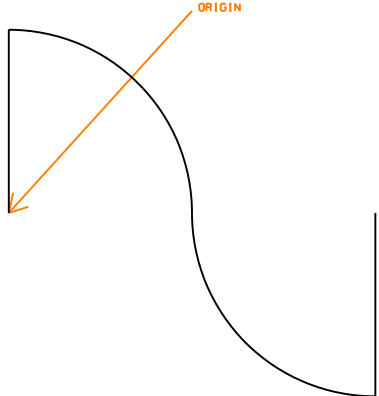
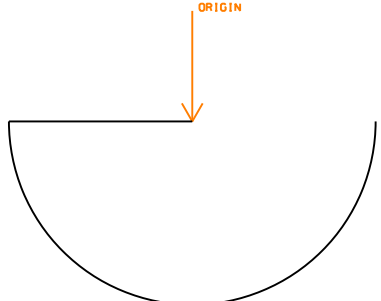
		
Structural: ANBOLT ANCHOR BOLT Element type: Symbol	Structural: CNTLIN CENTERLINE SYMBOL Element type: Symbol	Structural: COLLIN COLUMN LINE GRID INDICATOR Element type: Symbol
		
Structural: JSTBR1 JOIST BAR SINGLE LINE Element type: Symbol	Structural: JSTBR2 JOIST BAR DOUBLE LINE Element type: Symbol	Structural: PLATE PLATE SYMBOL Element type: Symbol

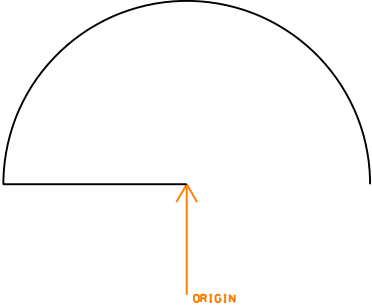
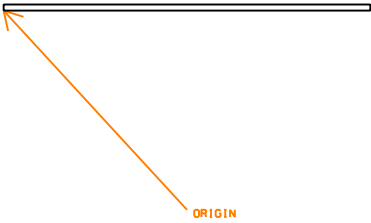
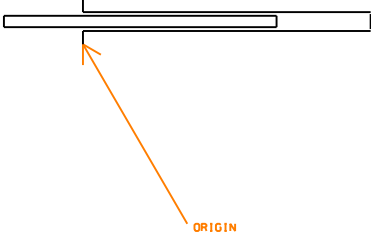
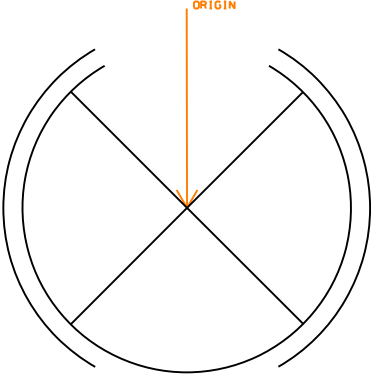
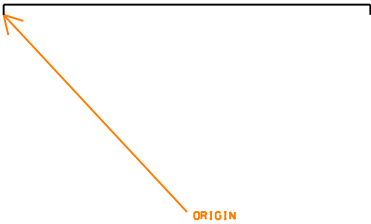
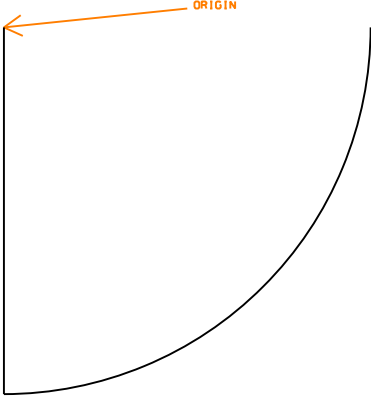
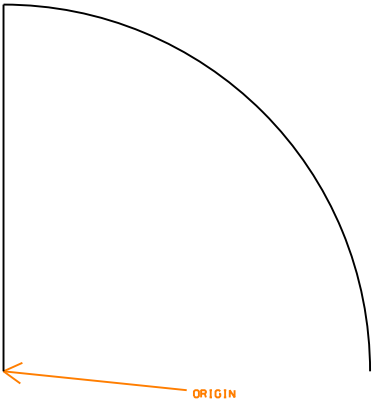
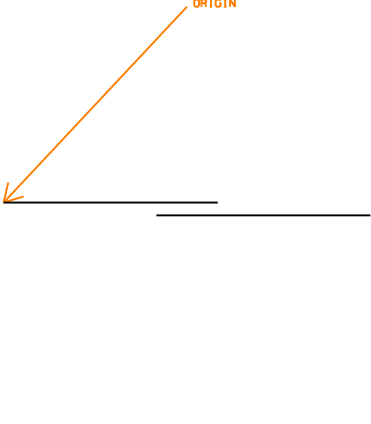
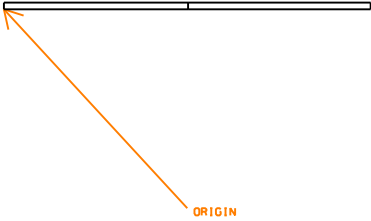
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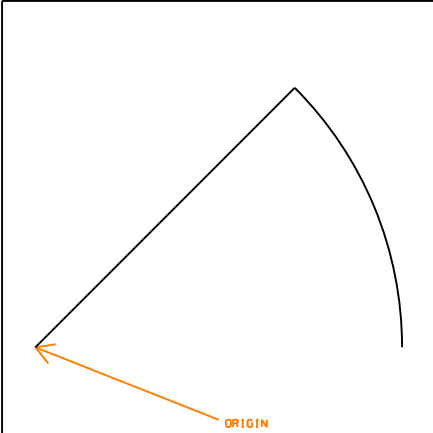
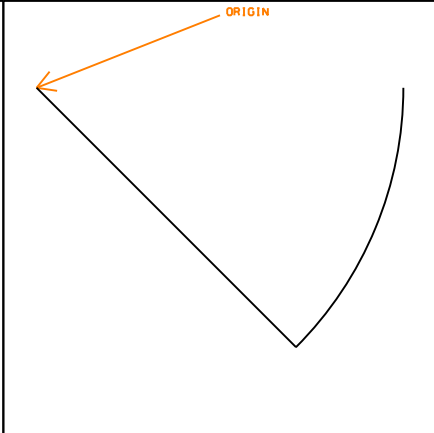
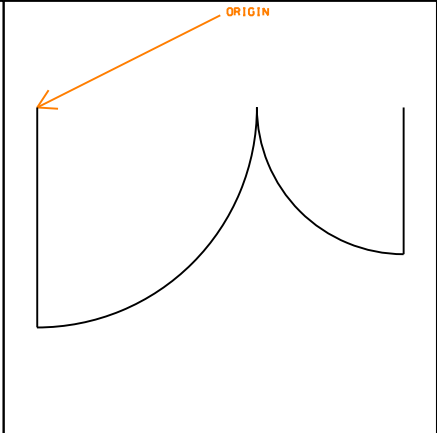
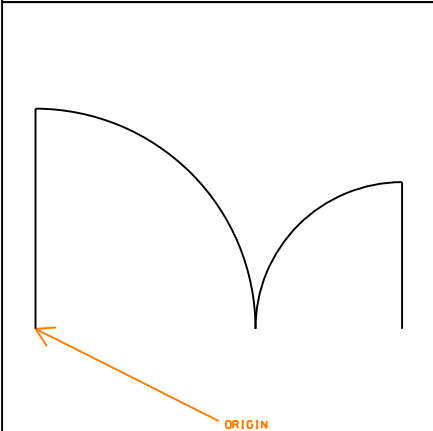
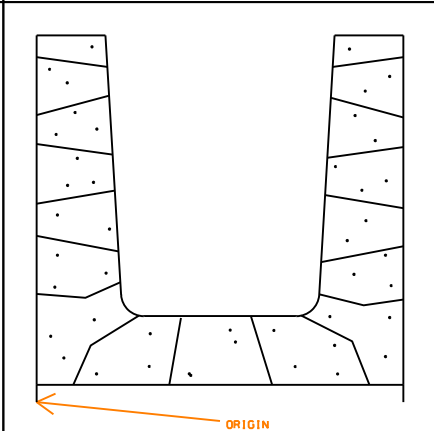
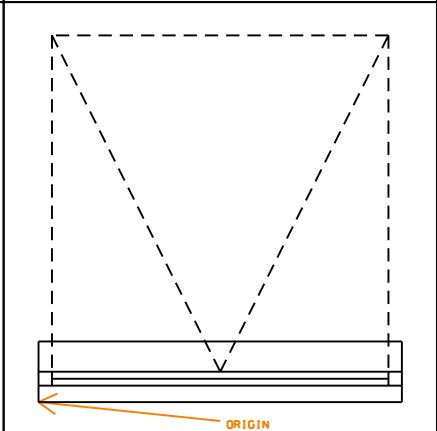
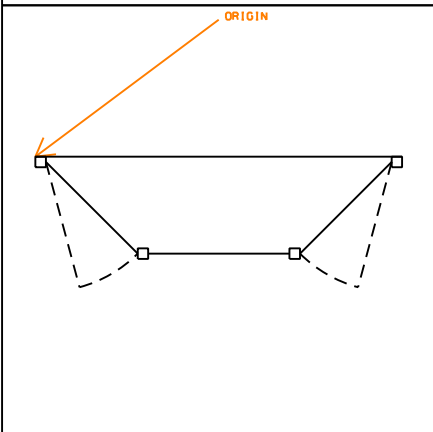
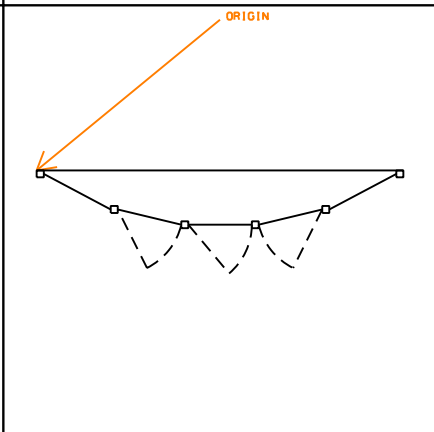
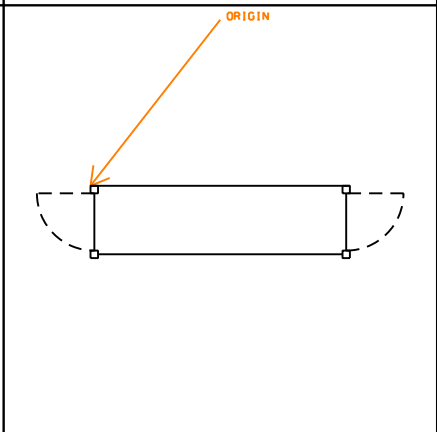
10 Architectural Objects Library

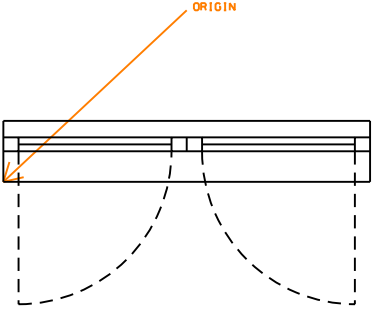
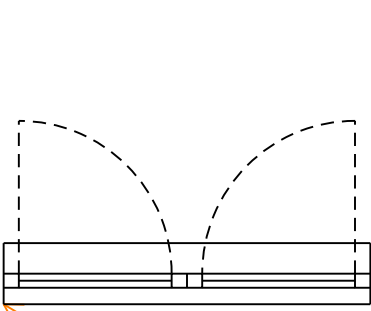
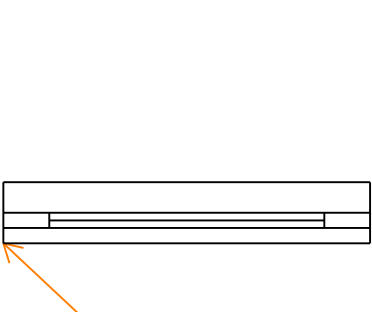
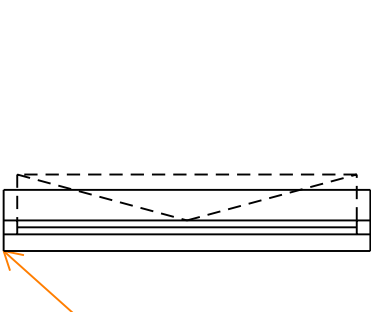
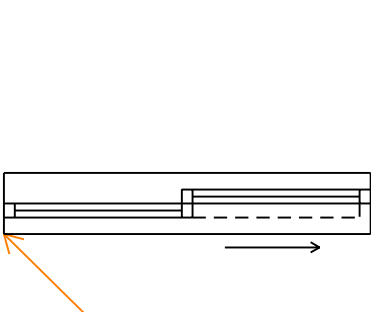
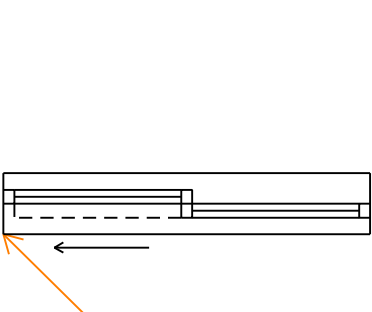
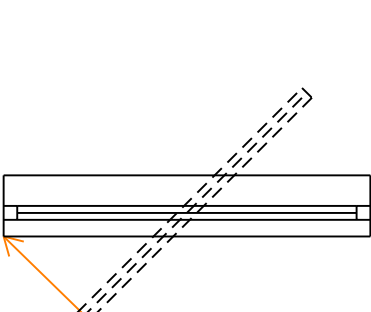
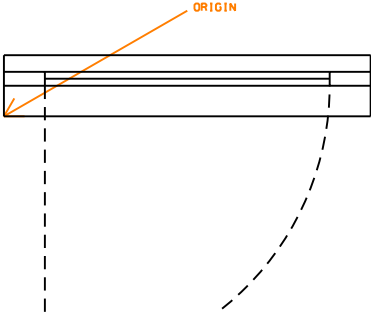
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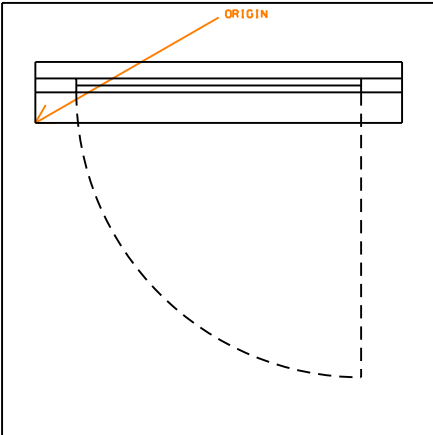
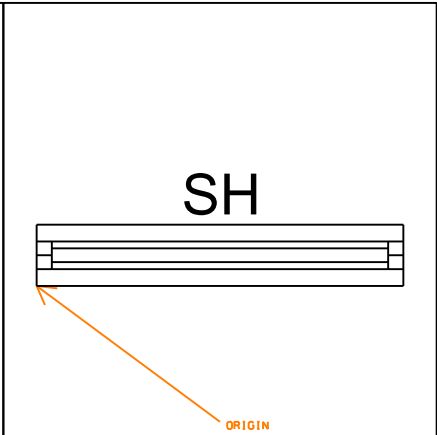
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 ORIGIN	 ORIGIN	 ORIGIN
Architectural: CMUCOR CONC BLOCK 8X8X16 COR. Element type: Object	Architectural: CMUEND CONC BLOCK 8X8X16 END Element type: Object	Architectural: CMUGL GLAZED CONCRETE BLOCK Element type: Object
 ORIGIN	 ORIGIN	 ORIGIN
Architectural: CMUSTR CONC BLOCK 8X8X16 STR. Element type: Object	Architectural: DOR18L LEFT DOOR 180 DEGREE SWING Element type: Object	Architectural: DOR18R RIGHT DOOR 180 DEGREE SWING Element type: Object

		
Architectural: DORBFL LEFT BIFOLD DOOR Element type: Object	Architectural: DORBFR RIGHT BIFOLD DOOR Element type: Object	Architectural: DORCPV DOOR CENTER PIVOT Element type: Object
		
Architectural: DORCYL DARK ROOM DOOR Element type: Object	Architectural: DORDBL LEFT DOUBLE DOOR Element type: Object	Architectural: DORDBR RIGHT DOUBLE DOOR Element type: Object
		
Architectural: DORDEL LEFT DOUBLE EGRESS DOOR Element type: Object	Architectural: DORDER RIGHT DOUBLE EGRESS DOOR Element type: Object	Architectural: DORFSL LEFT SINGLE FULL SWING DOOR Element type: Object

		
Architectural: DORFSR RIGHT SINGLE FULL SWING DOOR Element type: Object	Architectural: DOROVH OVERHEAD DOOR Element type: Object	Architectural: DORPOC DOOR POCKET Element type: Object
		
Architectural: DORREV REVOLVING DOOR Element type: Object	Architectural: DORRUP ROLL UP DOOR Element type: Object	Architectural: DORSHL LEFT SINGLE HINGED DOOR Element type: Object
		
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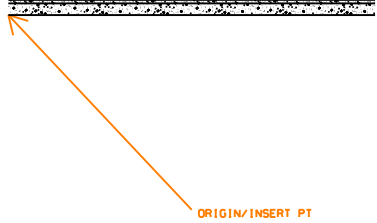
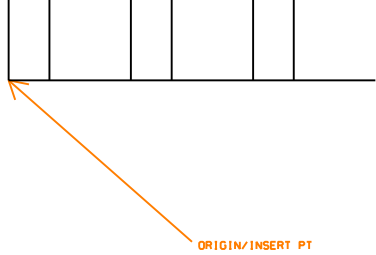
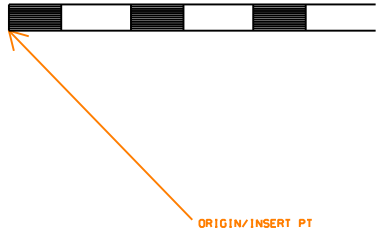
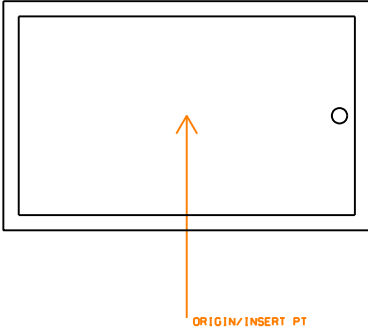
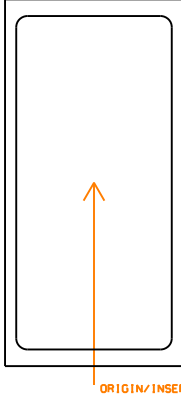
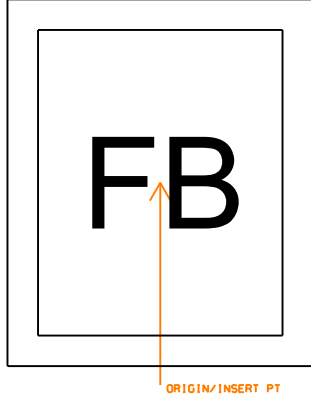
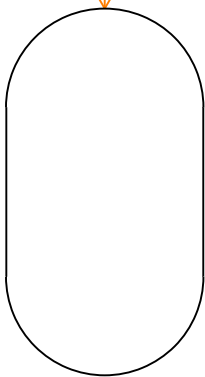
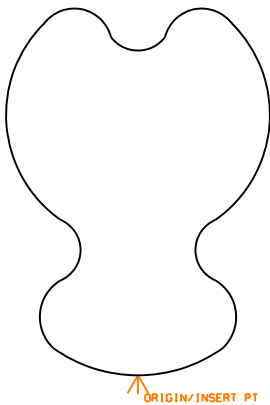
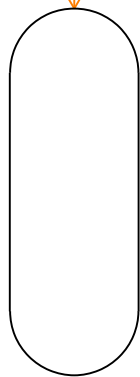
		
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Architectural: DORUDR RIGHT UNEVEN DOUBLE DOOR Element type: Object	Architectural: LINTEL CONC BEAM BOND LINTEL Element type: Object	Architectural: WINAWN WINDOW AWNING Element type: Object
		
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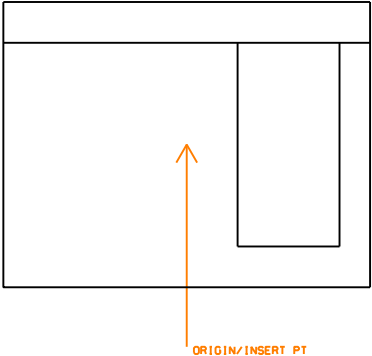
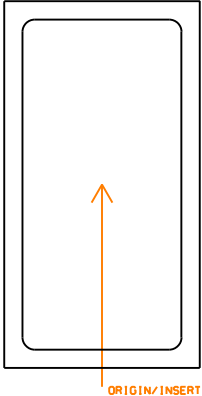
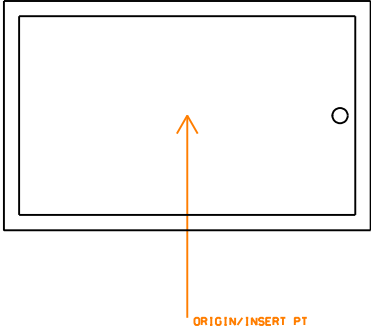
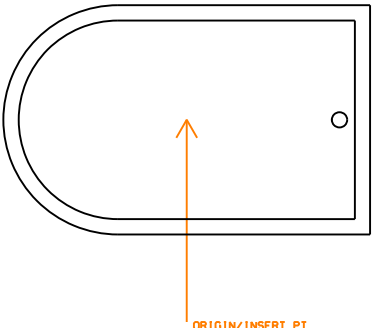
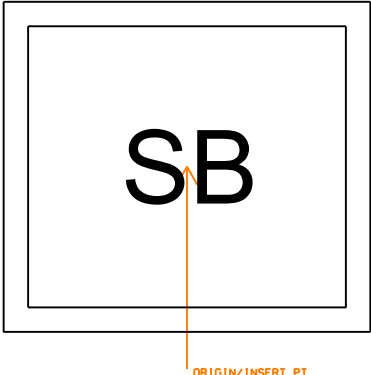
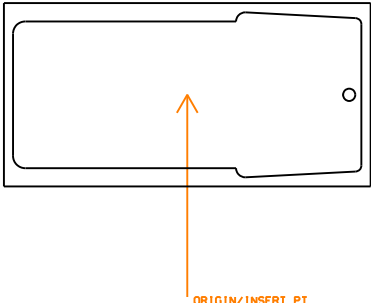
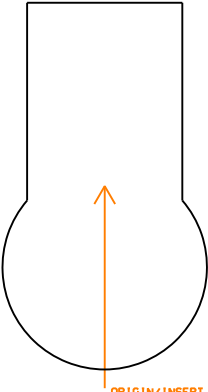
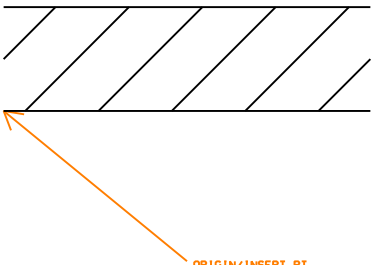
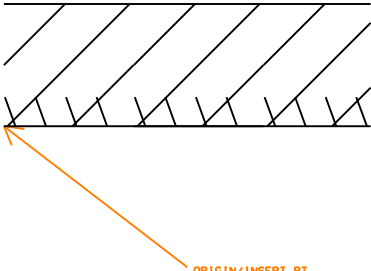
		
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Architectural: WINFIX FIXED 1 FOOT WINDOW Element type: Object	Architectural: WINJAL JALOUSIE WINDOW Element type: Object	Architectural: WINOSL SLIDNG WNDW LFT OPRTNG SASH Element type: Object
		
Architectural: WINOSR SLDNG WNDW RGT OPRTNG SASH Element type: Object	Architectural: WINPIV PIVOT WINDOW Element type: Object	Architectural: WINSCL WNDWSNGLCASEMNTLEFTJAMBHING Element type: Object

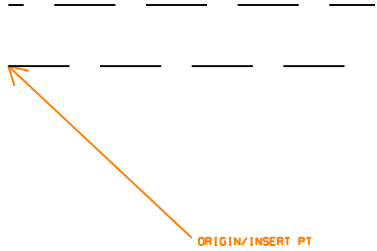
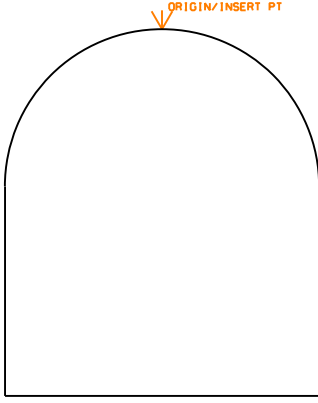
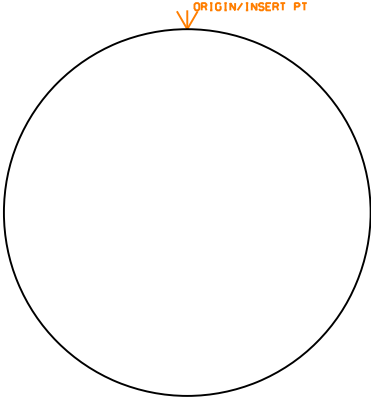
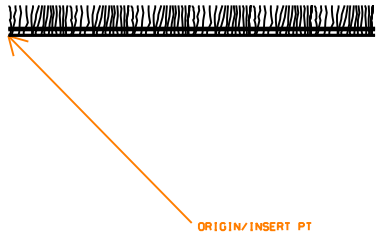
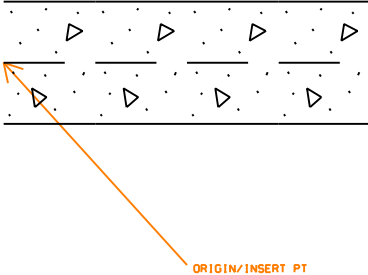
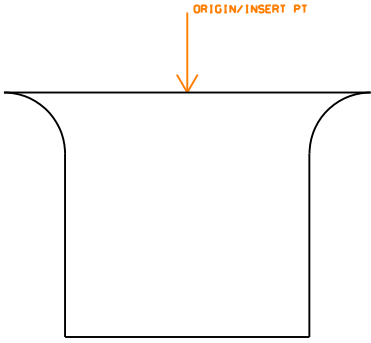
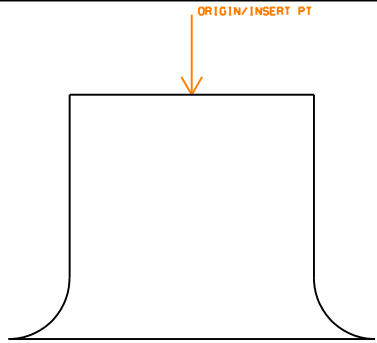
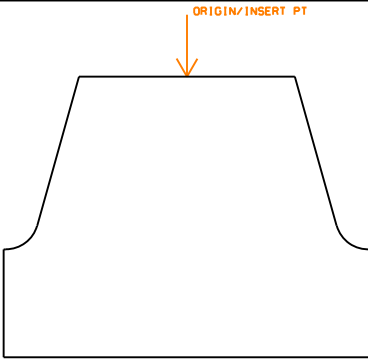
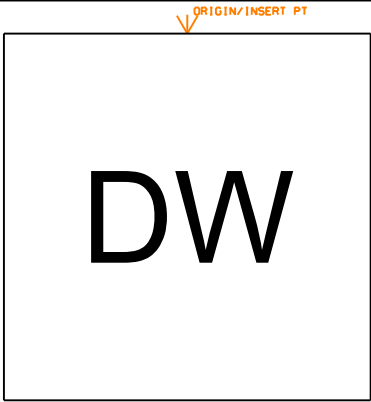
	
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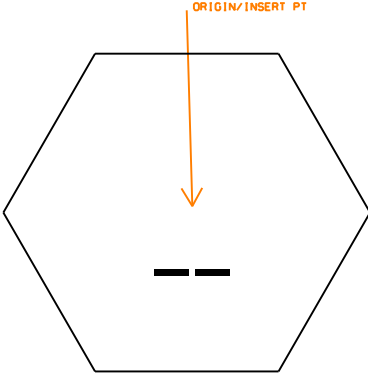
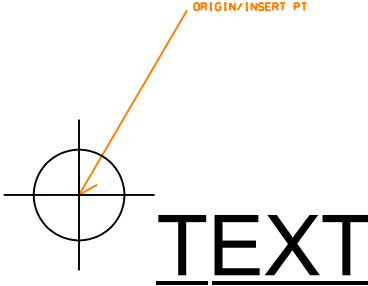
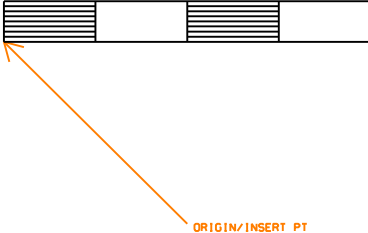
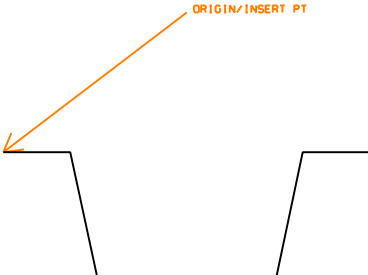
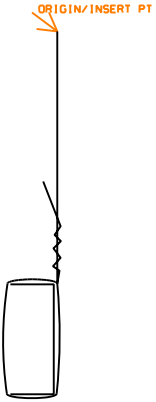
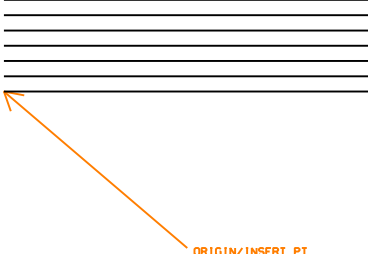
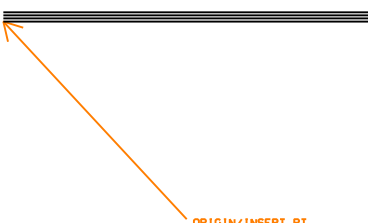
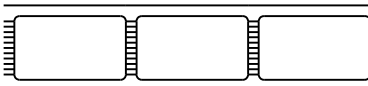
10 Architectural Symbols Library

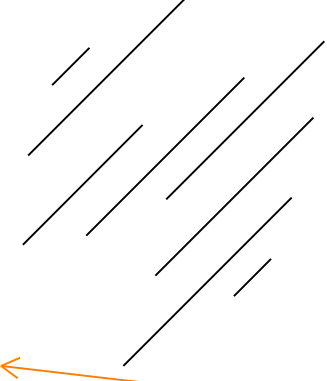
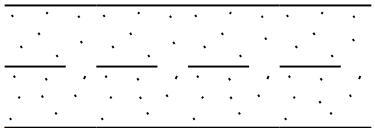
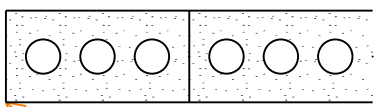
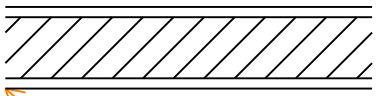
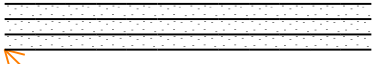
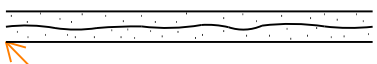
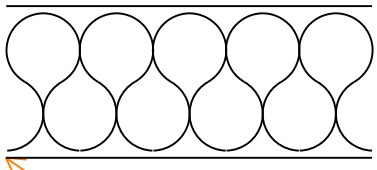
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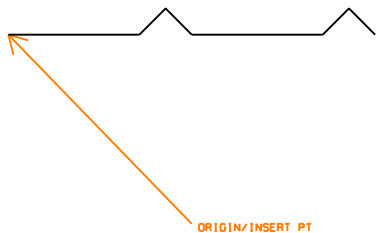
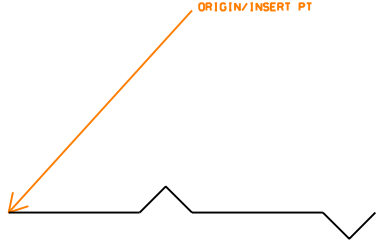
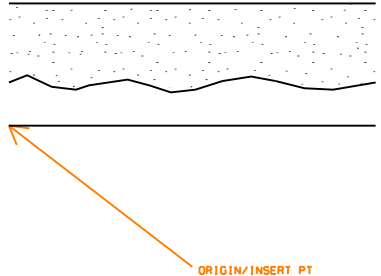
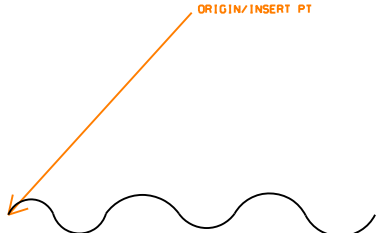
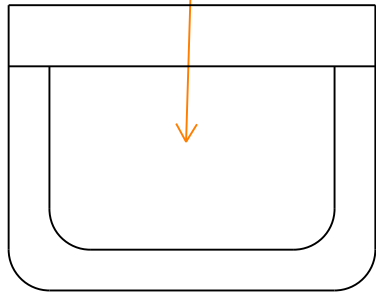
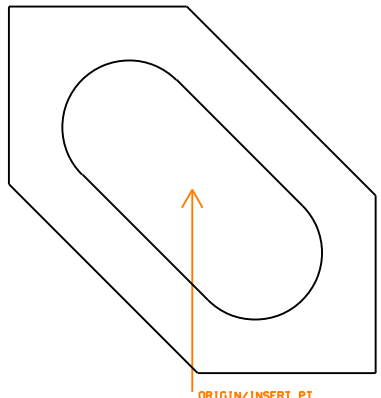
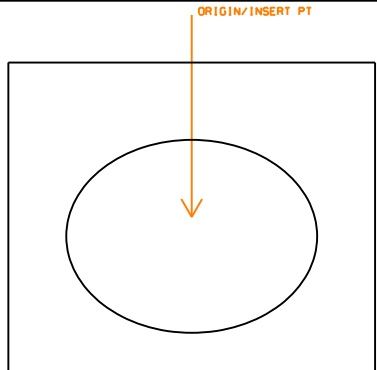
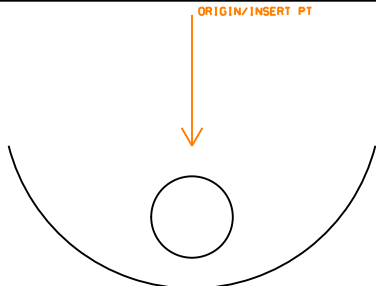
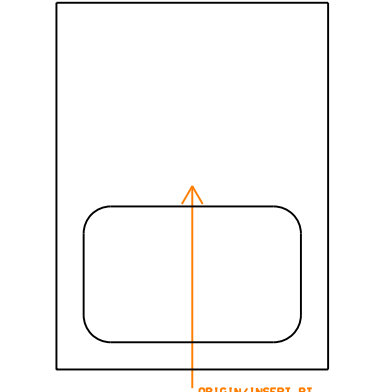
		
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Architectural: BATHCO CORNER BATH Element type: Symbol	Architectural: BATHEM EMERGENCY BATH Element type: Symbol	Architectural: BATHFT FOOT BATH Element type: Symbol
		
Architectural: BATHHA HYDROTHERAPY ARM BATH Element type: Symbol	Architectural: BATHHH HYDROTHERAPY HUBBARD BATH Element type: Symbol	Architectural: BATHHL HYDROTHERAPY LEG BATH Element type: Symbol

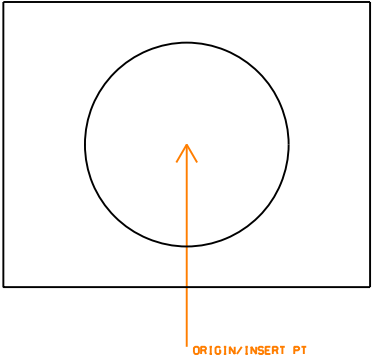
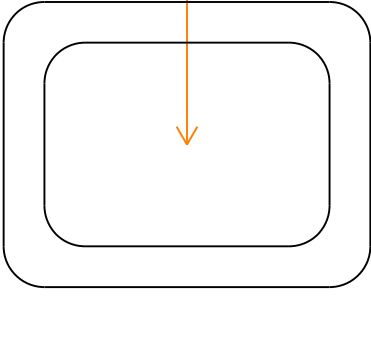
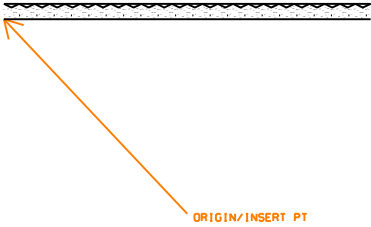
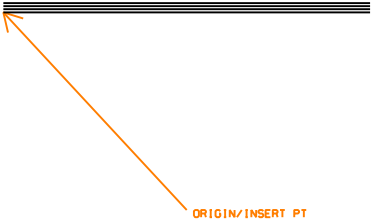
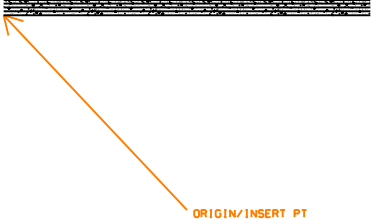
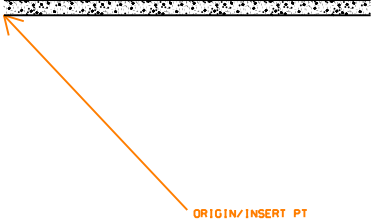
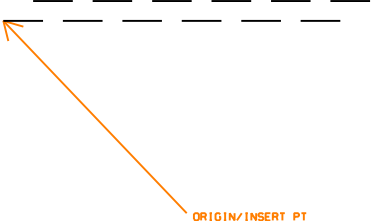
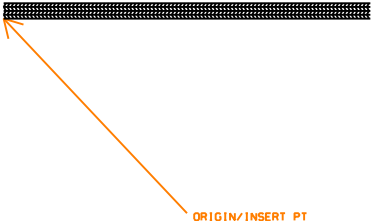
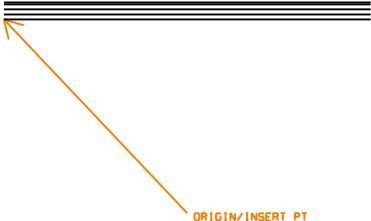
		
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Architectural: BATHRR ROLL RIM BATH Element type: Symbol	Architectural: BATHSZ SITZ BATH Element type: Symbol	Architectural: BATHWP WHIRLPOOL BATH Element type: Symbol
		
Architectural: BIDET WATERCLOSET BIDET Element type: Symbol	Architectural: BRFACC BRICK FACE ON COMMON Element type: Symbol	Architectural: BRFIRE FIRE BRICK Element type: Symbol

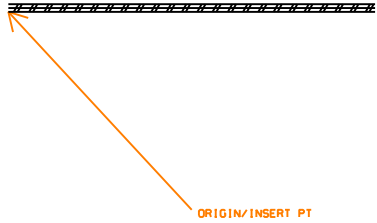
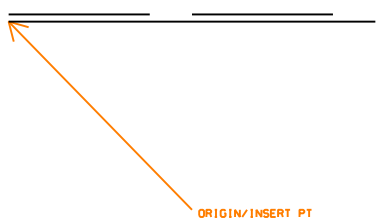
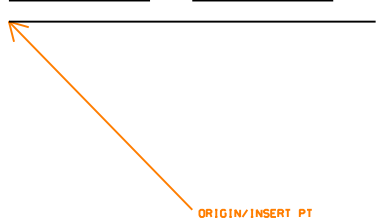
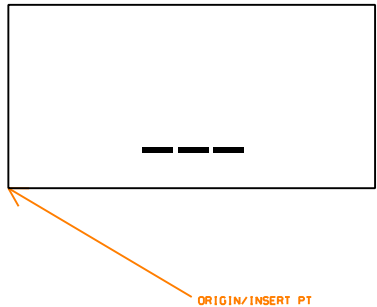
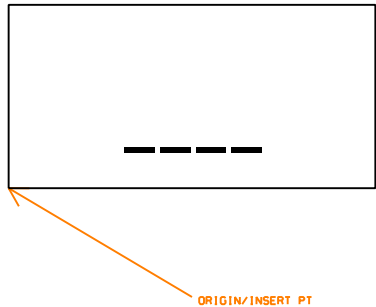
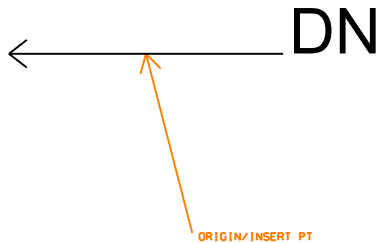
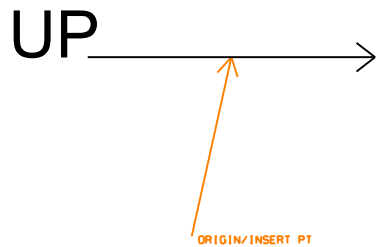
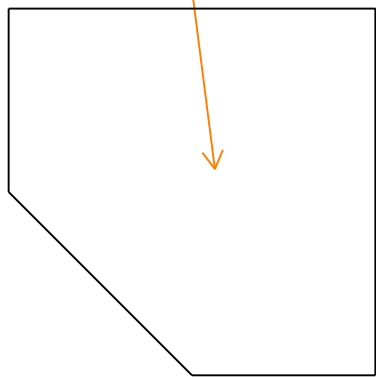
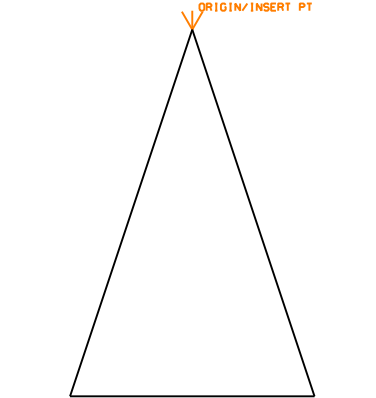
		
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Architectural: CARPET CARPET AND PAD Element type: Symbol	Architectural: CPLANK CONCRETE PLANK Element type: Symbol	Architectural: DFPROJ DRINK FOUNTAN PROJECTNG TYP Element type: Symbol
		
Architectural: DFRECS DRINK FOUNTAIN RECESSED TYP Element type: Symbol	Architectural: DFSREC DRINK FOUNTN SEMIRECSSD TYP Element type: Symbol	Architectural: DSHWSH COMMERCIAL DISHWASHER Element type: Symbol

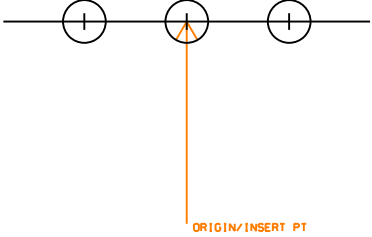
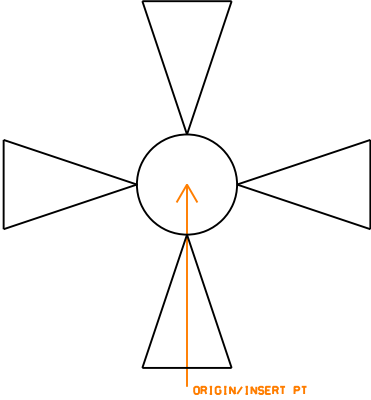
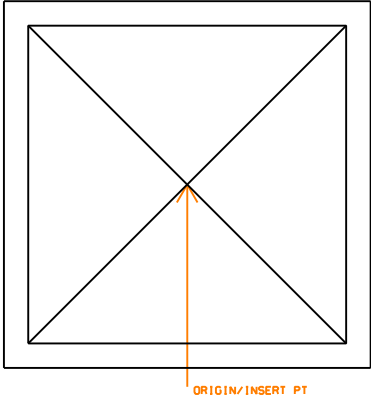
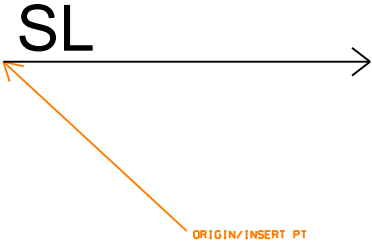
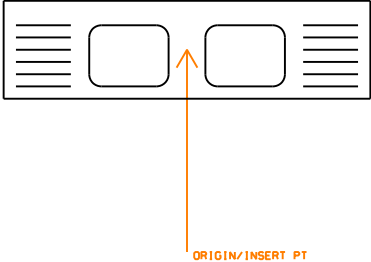
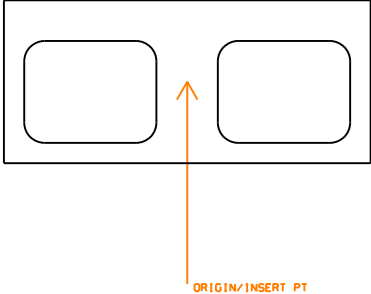
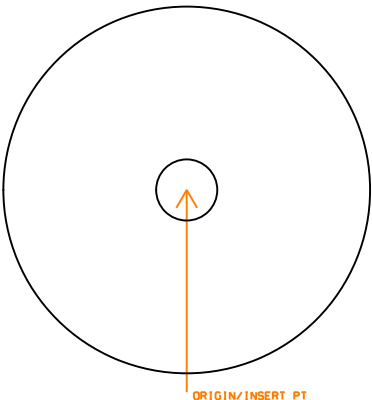
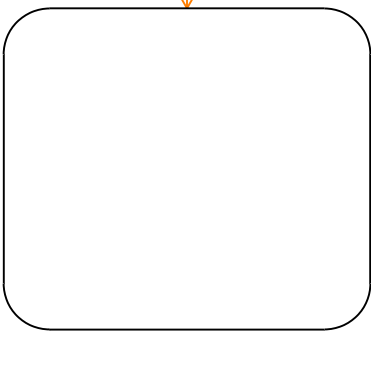
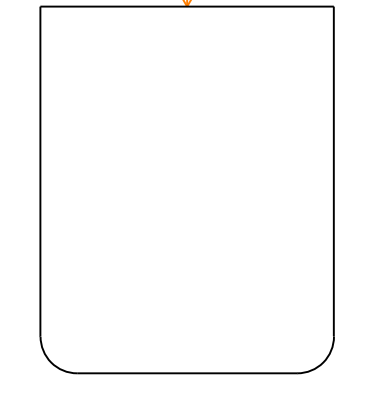
		
Architectural: EQPMID EQUIPMENT IDENTIFIER Element type: Symbol	Architectural: FASTEN FASTENER Element type: Symbol	Architectural: FLRRPL FLOORING RESILIENT PLSTC LAM Element type: Symbol
		
Architectural: FURCHH FURRING CHANNEL HAT Element type: Symbol	Architectural: FURCHN FURRING CHANNEL Element type: Symbol	Architectural: GLASLS LARGE SCALE GLASS Element type: Symbol
		
Architectural: GLASSS SMALL SCALE GLASS Element type: Symbol	Architectural: GLBLLS GLASS BLOCK LARGE SCALE Element type: Symbol	Architectural: GLBLSS GLASS BLOCK SMALL SCALE Element type: Symbol

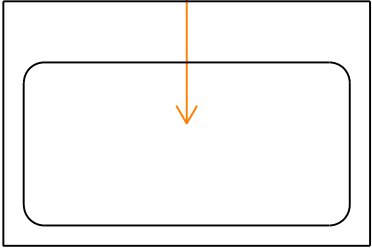
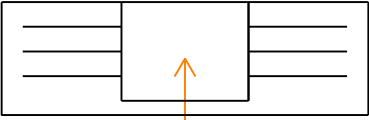
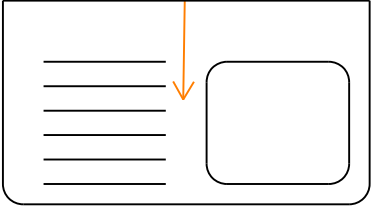
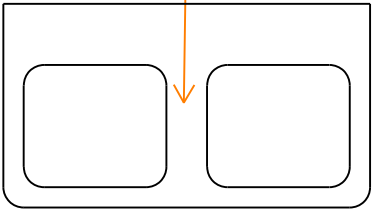
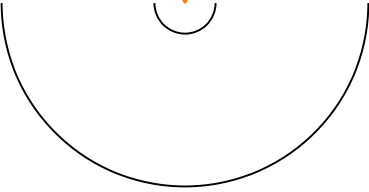
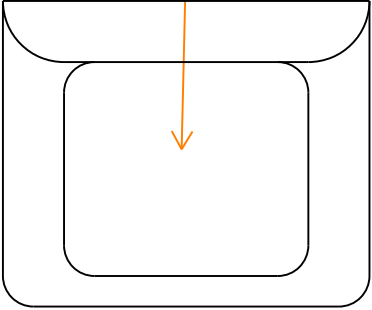
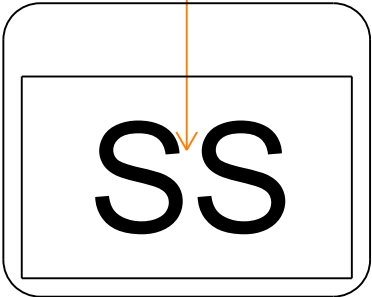
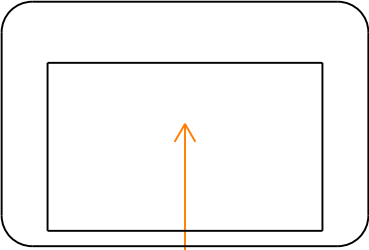
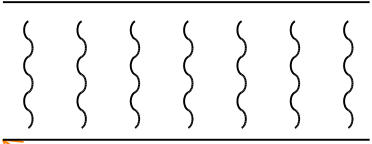
		
Architectural: GLELEV GLASS ELEVATION Element type: Symbol	Architectural: GPLANK GYPSUM PLANK Element type: Symbol	Architectural: GYPBLK GYPSUM BLOCK TILE Element type: Symbol
		
Architectural: GYPPOP GYPSUM PLASTER ON MASONRY Element type: Symbol	Architectural: GYPPOP GYPSUM PLASTER PARTICLE BR Element type: Symbol	Architectural: GYPSP GYPSUM SOLID PLASTER PARTITION Element type: Symbol
		
Architectural: GYPWBD GYPSUM WALLBOARD FINISHES Element type: Symbol	Architectural: INFBSS SMSCALE FLXBL BLANKET INSUL Element type: Symbol	Architectural: INFLS LRGSCALE LOOSE FILL INSULAT Element type: Symbol

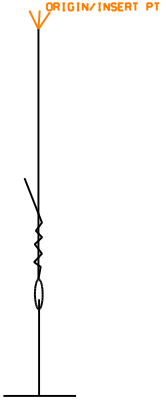
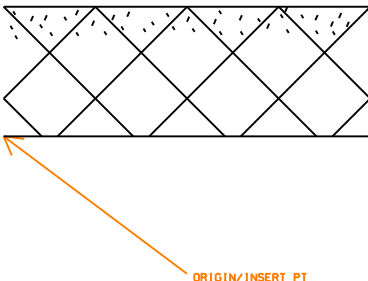
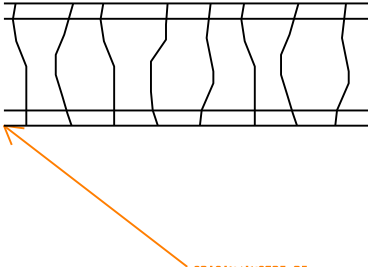
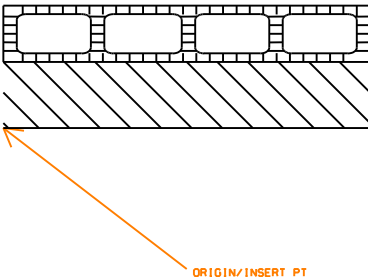
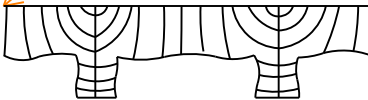
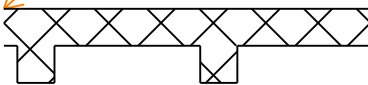
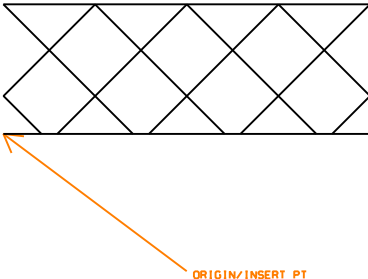
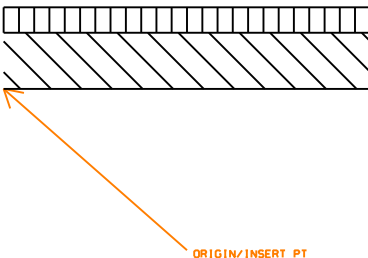
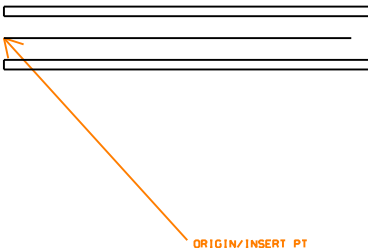
		
Architectural: INS1RM INSUL REFLCTVE MTL ON 1 SDE Element type: Symbol	Architectural: INS2RM INSUL RFLCTVCRTN 2SDS SMSC Element type: Symbol	Architectural: INSFOM SPRAY FOAM INSULATION Element type: Symbol
		
Architectural: INSTND INSUL TYPE NOT DETER LGSC Element type: Symbol	Architectural: LAVBCK BACK LAVATORY Element type: Symbol	Architectural: LAVCOR CORNER LAVATORY Element type: Symbol
		
Architectural: LAVCOU LAVATORY IN COUNTER Element type: Symbol	Architectural: LAVDNT DENTAL LAVATORY Element type: Symbol	Architectural: LAVHND HANDICAPPED LAVATORY Element type: Symbol

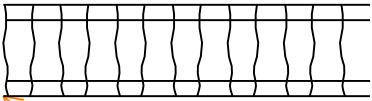
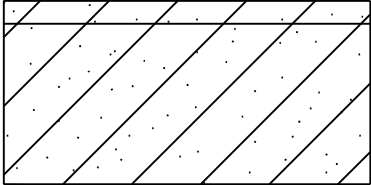
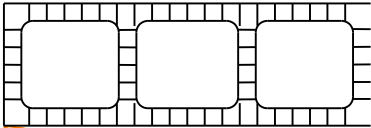
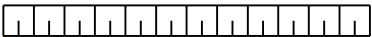
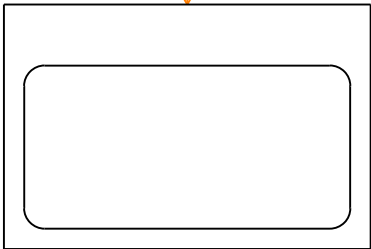
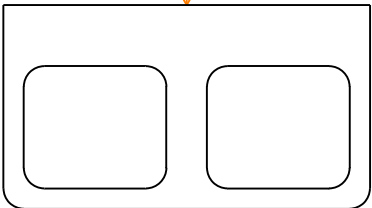
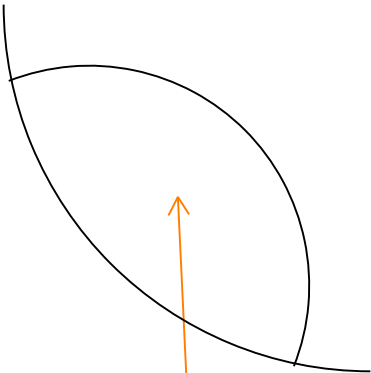
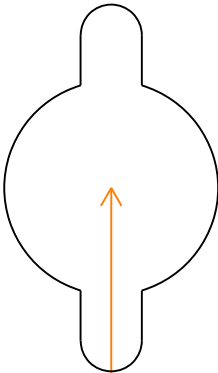
		
Architectural: LAVMDM MEDICAL MANICURE LAVATORY Element type: Symbol	Architectural: LAVSLB SLAB TYPE LAVATORY Element type: Symbol	Architectural: MTLLPL METAL LATH AND PLASTER Element type: Symbol
		
Architectural: MTLSHT METALSHEET ALLMETALSSMSCALE Element type: Symbol	Architectural: ORISTB ORIENTED STRAND BOARD Element type: Symbol	Architectural: PARTBD PARTICLEBOARD Element type: Symbol
		
Architectural: PLASTC PLASTIC FINISHES Element type: Symbol	Architectural: PLPLLS LRGSCALE PLASTIC ON PLYWOOD Element type: Symbol	Architectural: PLPLSS SMSCALE PLASTIC ON PLYWOOD Element type: Symbol

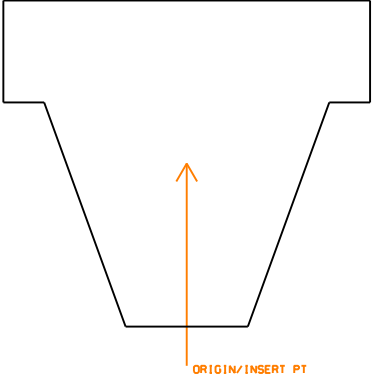
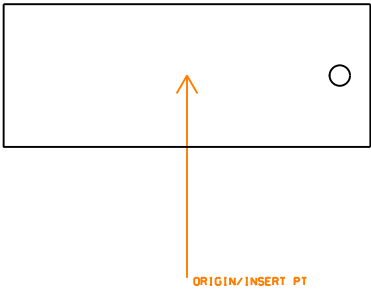
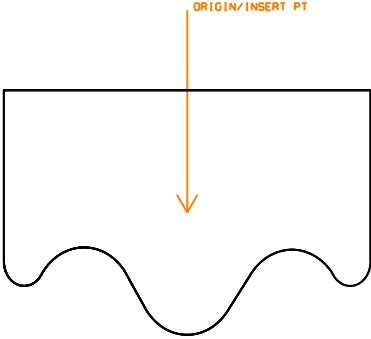
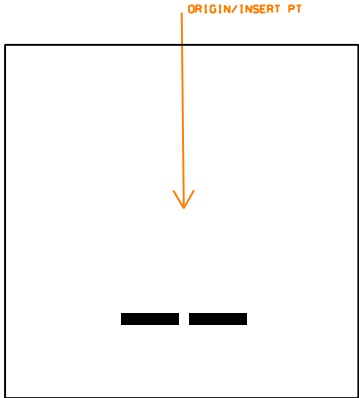
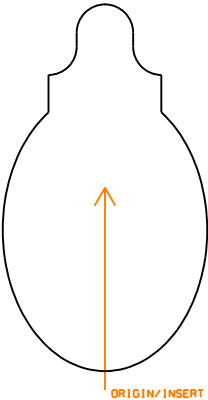
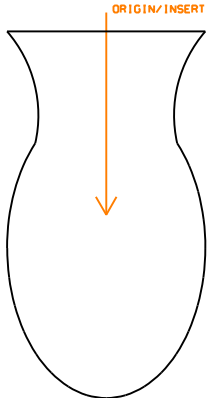
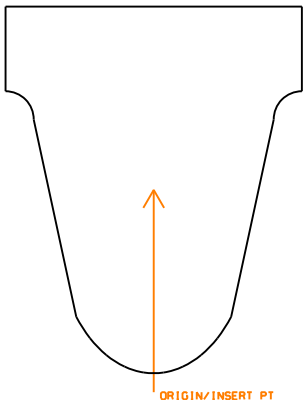
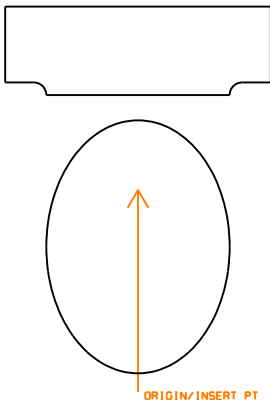
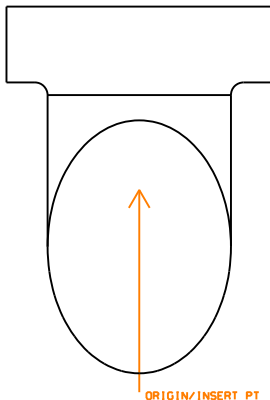
		
Architectural: PLYWD PLYWOOD Element type: Symbol	Architectural: RBIILS RGD BRD INTRR INSUL LRGSC Element type: Symbol	Architectural: RBISLS INSUL RGD BRD ASSHTNG LRGSC Element type: Symbol
		
Architectural: ROMID3 ROOM IDENTIFIER 3CHARACTERS Element type: Symbol	Architectural: ROMID4 ROOM IDENTIFIER 4CHARACTERS Element type: Symbol	Architectural: SDIRLD STAIR DIRECTION LINE DOWN Element type: Symbol
		
Architectural: SDIRLU STAIR DIRECTION LINE UP Element type: Symbol	Architectural: SHWRCO CORNER SHOWER Element type: Symbol	Architectural: SHWRHD SHOWER HEAD Element type: Symbol

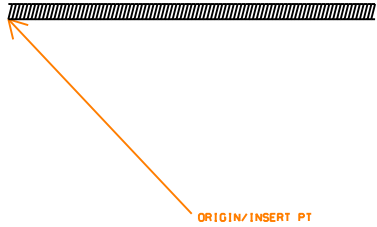
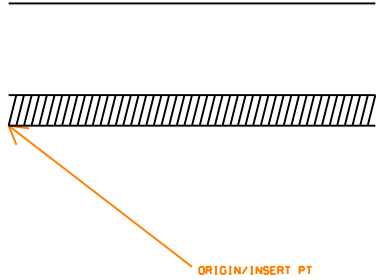
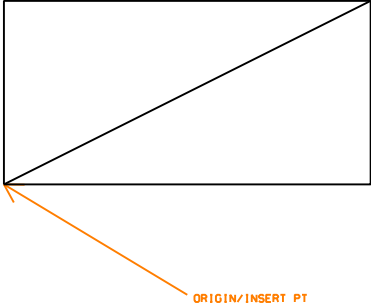
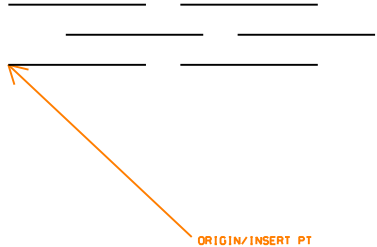
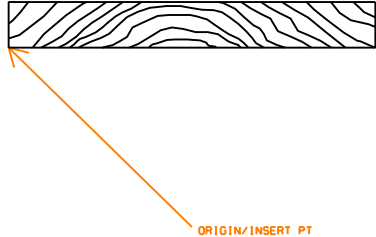
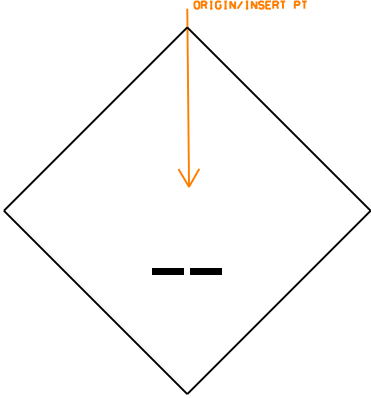
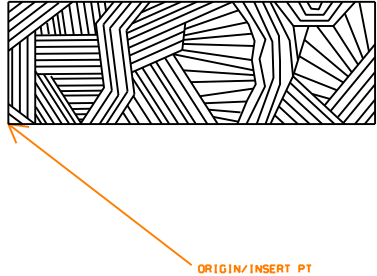
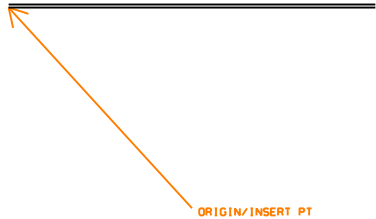
		
Architectural: SHWROG SHOWER OVERHEAD GANG Element type: Symbol	Architectural: SHWRPG SHOWER PEDESTAL GANG Element type: Symbol	Architectural: SHWRST SHOWER STALL Element type: Symbol
		
Architectural: SLOPE DIRECTION OF LINE SLOPE Element type: Symbol	Architectural: SNK2BD DBLE SINK W DRAINBOARDS Element type: Symbol	Architectural: SNK2CT SINK TWO COMPARTMENT TYPE Element type: Symbol
		
Architectural: SNKCWT CIRCULAR WASH TYPE SINK Element type: Symbol	Architectural: SNKDSP SINK DISPOSER Element type: Symbol	Architectural: SNKFRC FLUSHING RIM CLINICAL SINK Element type: Symbol

		
Architectural: SNKGEN GENERAL SINK Element type: Symbol	Architectural: SNKKLR KITCH SNK WL AND R DRAIN BD Element type: Symbol	Architectural: SNKLDB SINK W LEFT DRAINBOARD Element type: Symbol
		
Architectural: SNKLTR SINK LAUNDRY TRAY Element type: Symbol	Architectural: SNKSCW SEMICIRULAR WASH SINK Element type: Symbol	Architectural: SNKSLP SLOP TYPE SINK Element type: Symbol
		
Architectural: SNKSRV SERVICE SINK Element type: Symbol	Architectural: SNKSSC SURGEON SCRUB SINK Element type: Symbol	Architectural: STLCSS STRUCTURAL CLAY TILE SM SCL Element type: Symbol

		
Architectural: SUSPNT SUSPENSION TEE Element type: Symbol	Architectural: TC1FLS TERACOTA GLZD1FACE LRGSCALE Element type: Symbol	Architectural: TC2FSS TERACOTA GLZD2FACES SMSCALE Element type: Symbol
		
Architectural: TCHOLW HOLLOW TERRA COTTA Element type: Symbol	Architectural: TCLS LARGE SCALE TERRA COTTA Element type: Symbol	Architectural: TCQLS TERA COTA QUARRY LRGSCALE Element type: Symbol
		
Architectural: TCUGLS TERACOTA UNGLAZED LRGSCALE Element type: Symbol	Architectural: TCVENR VENEER TERRA COTTA Element type: Symbol	Architectural: THRSHD THRESHOLD Element type: Symbol

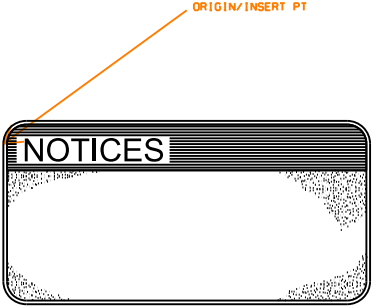
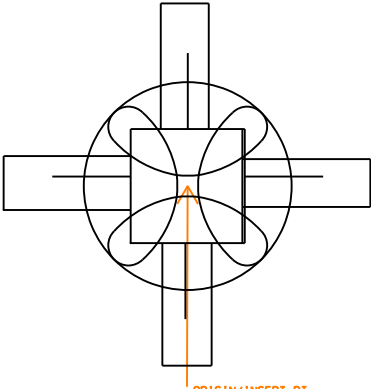
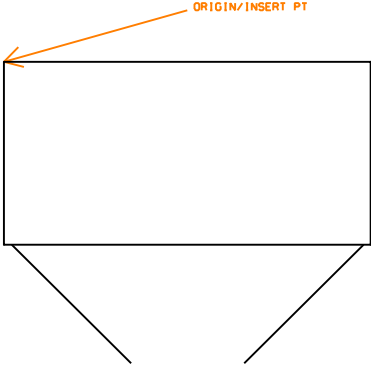
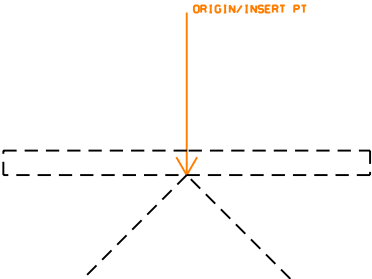
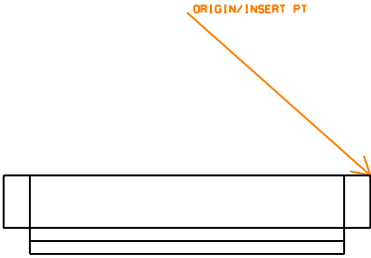
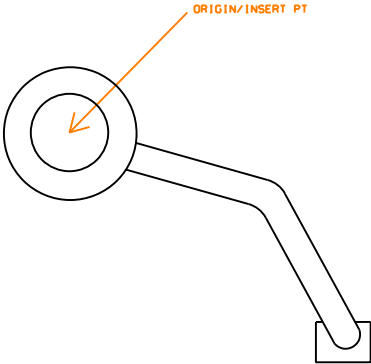
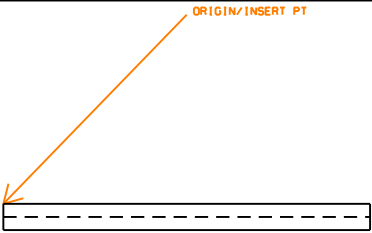
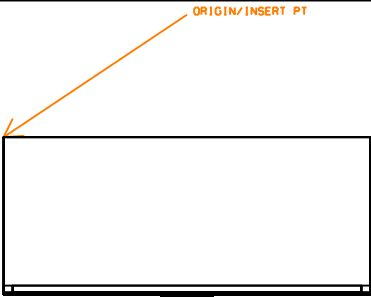
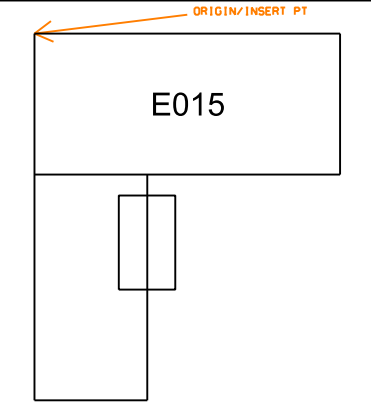
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Architectural: TILFSS SMALL SCALE TILE FACING Element type: Symbol	Architectural: TILGSC GLAZE STRUCTURAL CLAY TILE Element type: Symbol	Architectural: TILSFU TILE STRUCTURAL FLOOR UNITS Element type: Symbol
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Architectural: TLACOU ACOUSTICAL TILE FINISH Element type: Symbol	Architectural: TLCRLS CERAMIC TILE FINISH LRG SCALE Element type: Symbol	Architectural: TRAY1L SINGLE LAUNDRY TRAY Element type: Symbol
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
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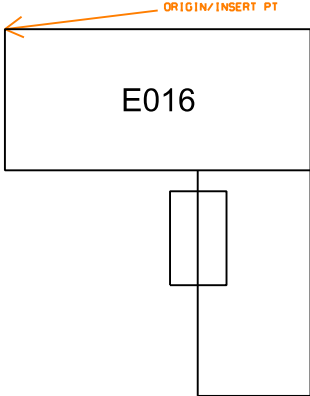
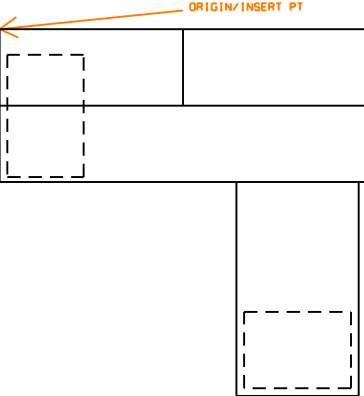
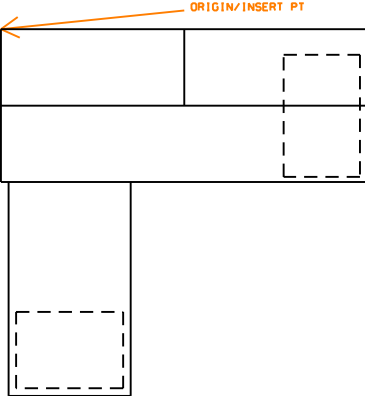
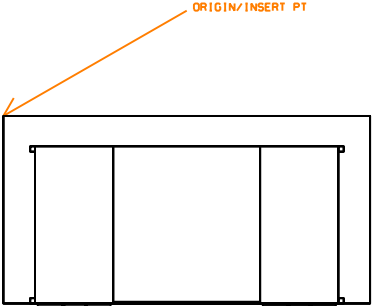
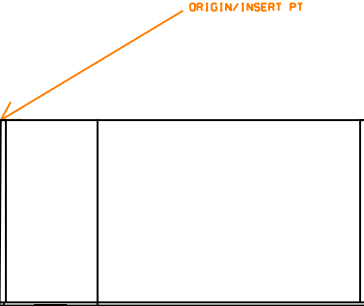
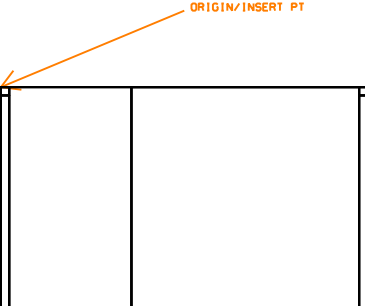
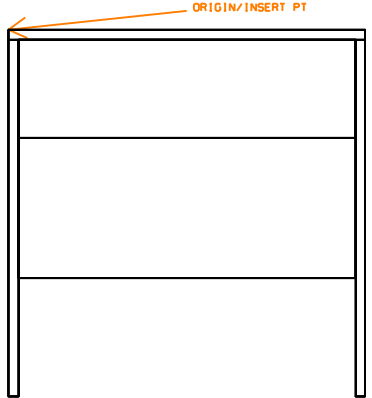
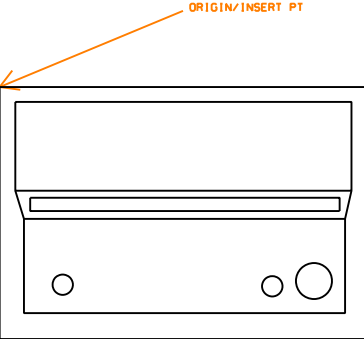
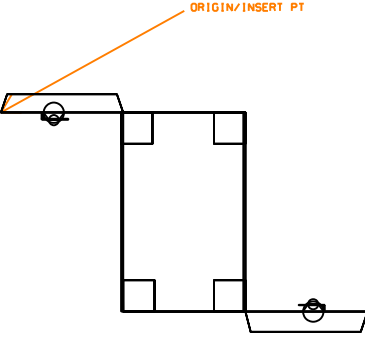
		
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Architectural: WALLID WALL TYPE IDENTIFIER Element type: Symbol	Architectural: WCFVFO F.V. FLR OUTLET WATERCLOSET Element type: Symbol	Architectural: WCFVWH F.V. WALL HUNG WATERCLOSET Element type: Symbol
		
Architectural: WCITNK INTEGRAL TANK WATERCLOSET Element type: Symbol	Architectural: WCTANK TANK TYPE WATERCLOSET Element type: Symbol	Architectural: WCWHTN WALL HUNG TANK WATERCLOSET Element type: Symbol

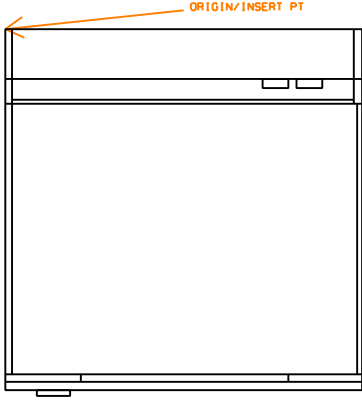
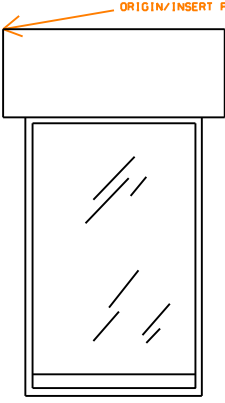
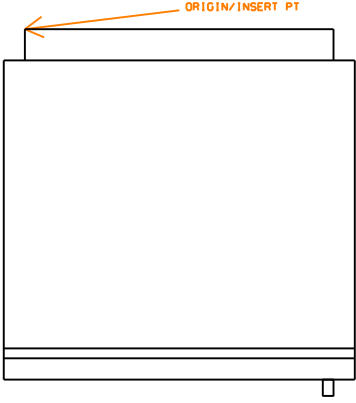
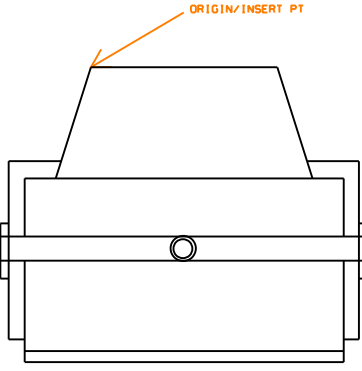
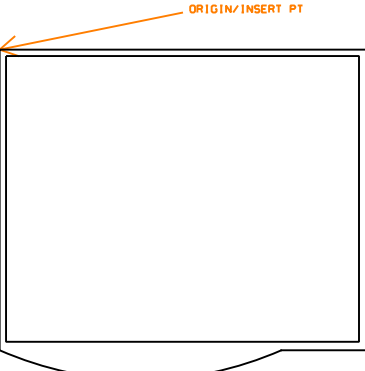
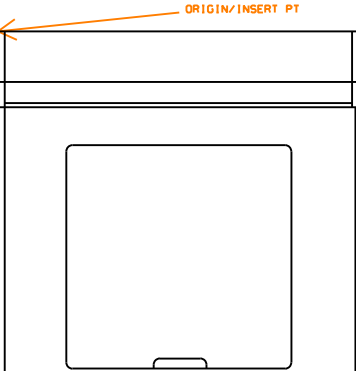
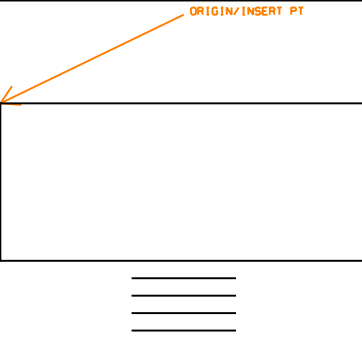
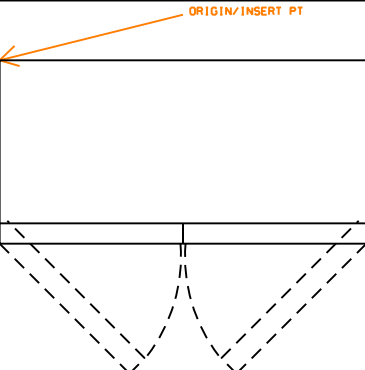
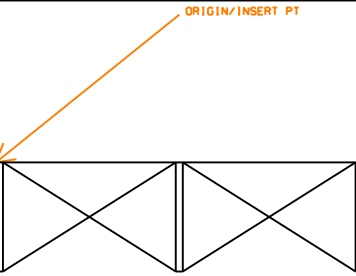
		
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Architectural: WDSHSD WOOD SHINGLES SIDING Element type: Symbol	Architectural: WFINSH WOOD FINISH Element type: Symbol	Architectural: WINID WINDOW IDENTIFIER Element type: Symbol
		
Architectural: WOODHB HARDBOARD WOOD Element type: Symbol	Architectural: WTRPFF WATERPROOFING FELT FLASHING Element type: Symbol	

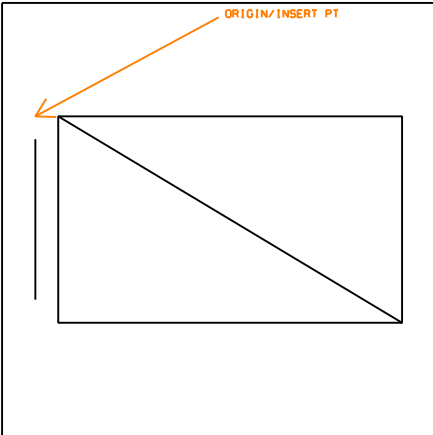
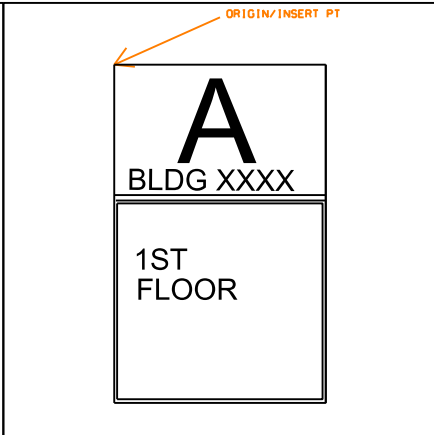
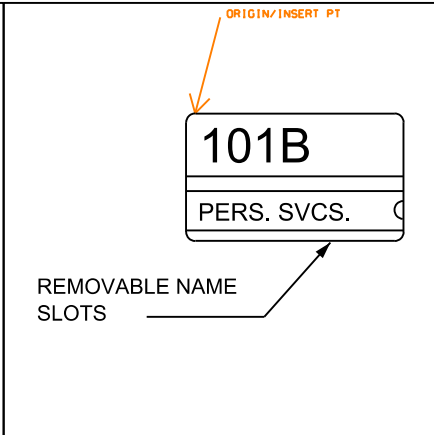
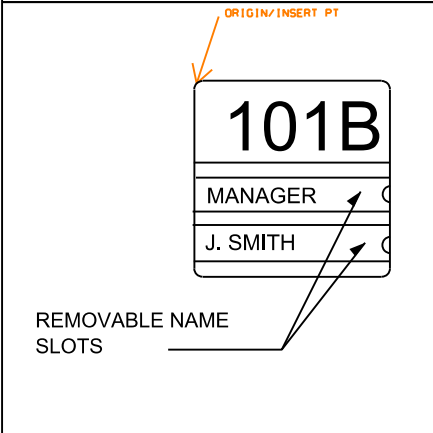
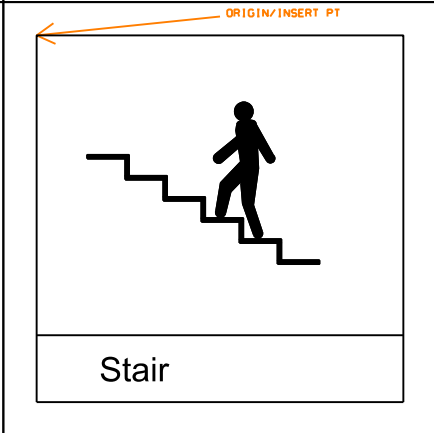
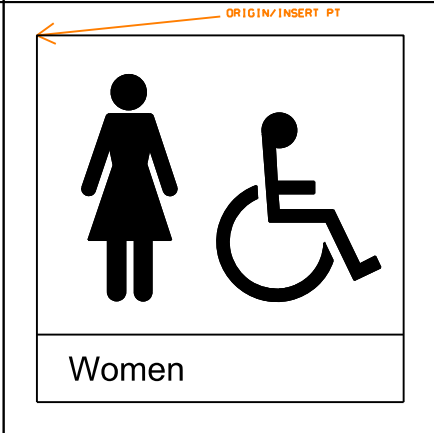
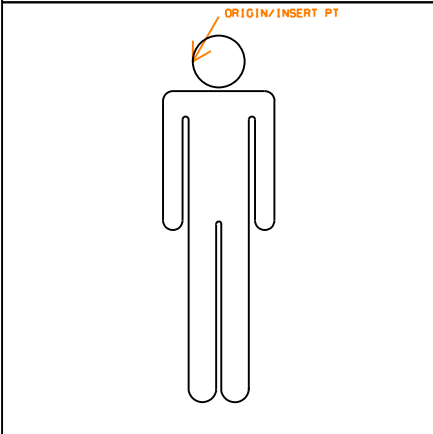
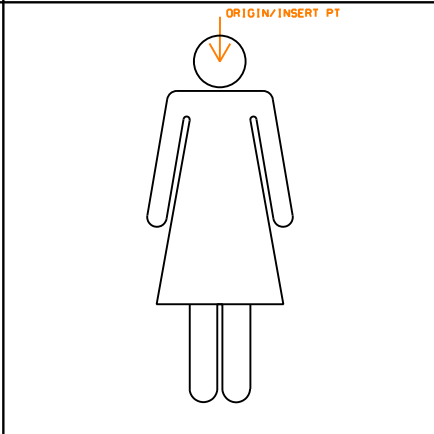
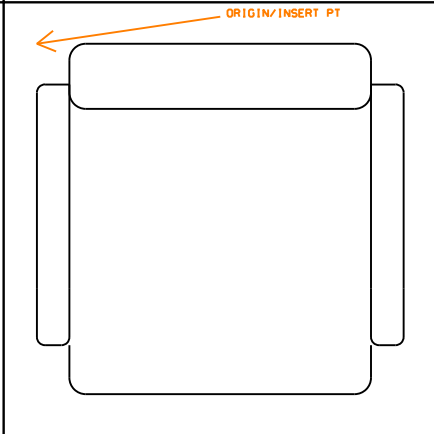
11 Interiors Objects Library

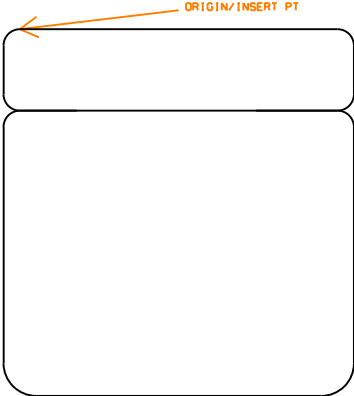
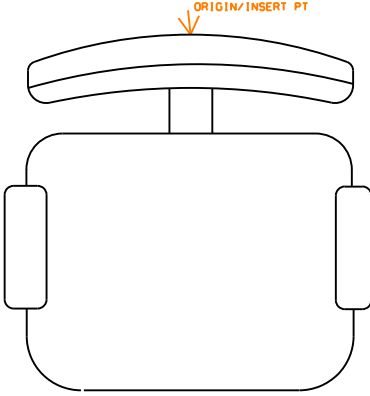
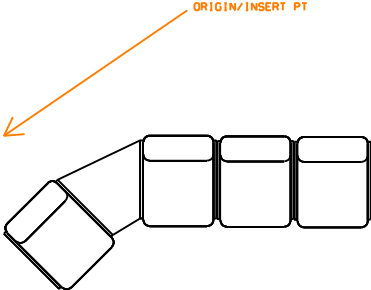
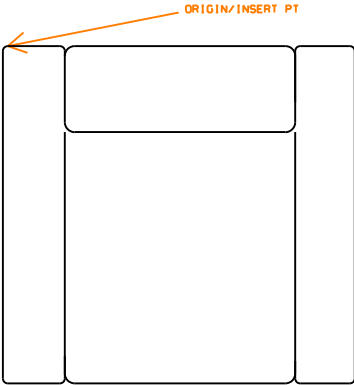
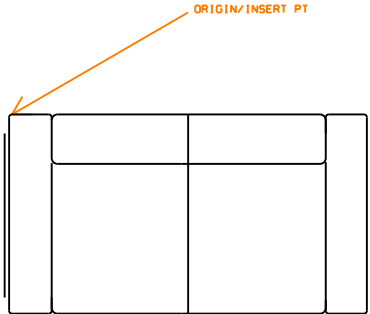
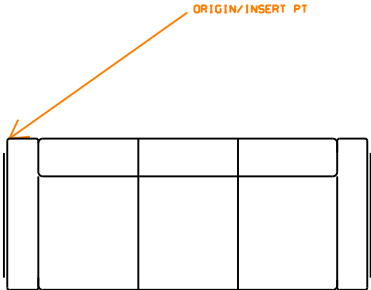
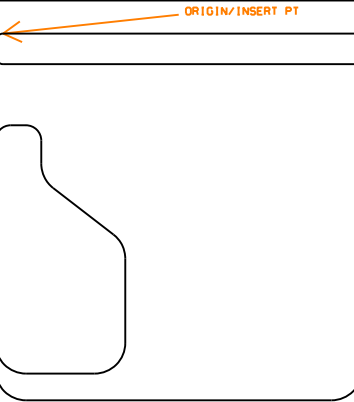
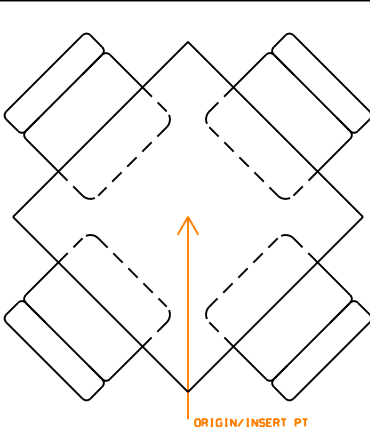
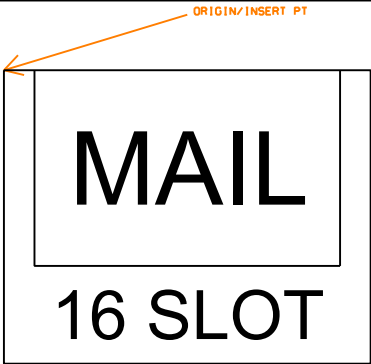
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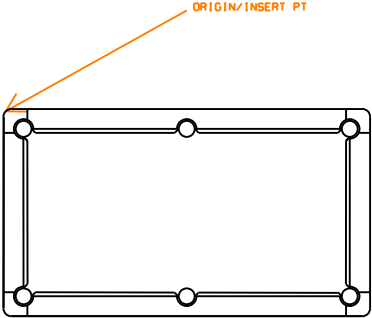
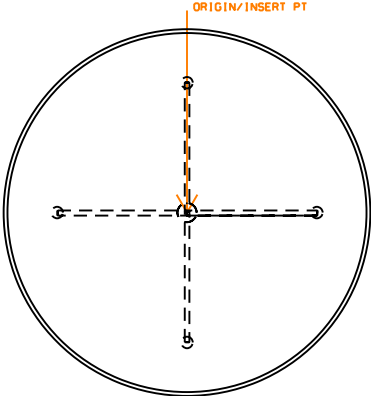
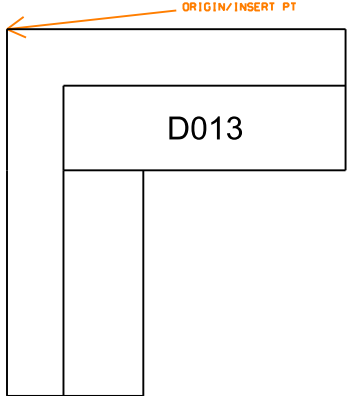
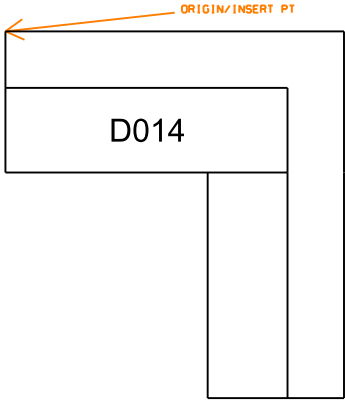
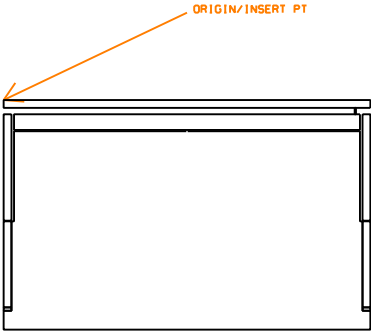
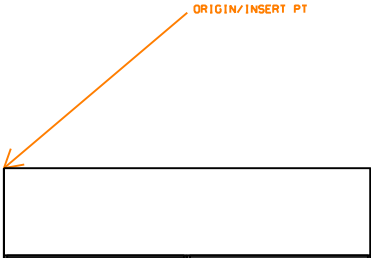
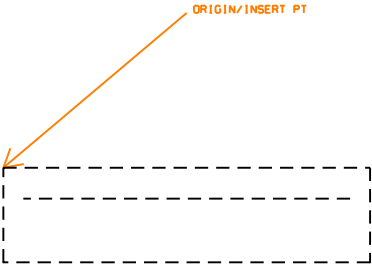
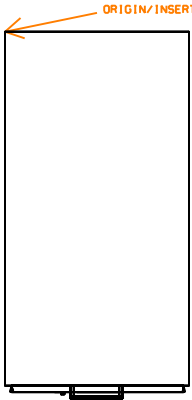
		
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Interiors: AEAS30 EASEL 30W HIDDEN Element type: Object	Interiors: AMAG15 MAGAZINE RACK 15W X 3D Element type: Object	Interiors: AMAGLT MAGNIFYING LIGHT Element type: Object
		
Interiors: APRJSC PROJECTION SCRIN CEILING MNTD Element type: Object	Interiors: ASTCAB STORAGE CABINET Element type: Object	Interiors: D65CLR DESK 65 COMP LR Element type: Object

 E016		
Interiors: D65CRR DESK 65 COMP RR Element type: Object	Interiors: D7230L LH SNGL PED DESK 72W X 30D2 Element type: Object	Interiors: D7230R RH SNGL PED DESK 72W X 30D2 Element type: Object
		
Interiors: DPFF DESK DOUBLE FILE PEDESTAL Element type: Object	Interiors: DPFL DESK LEFT PEDESTAL Element type: Object	Interiors: DPFR DESK RETURN PEDESTAL FILE Element type: Object
		
Interiors: DSC1 DESK STUDY CARREL SINGLE Element type: Object	Interiors: ECGAME FREESTANDING COMPUTER GAME Element type: Object	Interiors: ECOMCN COMSEC CONTAINER Element type: Object

		
Interiors: EDRYER DRYER Element type: Object	Interiors: EPINBL PINBALL MACHINE Element type: Object	Interiors: EREFRG REFRIGERATOR Element type: Object
		
Interiors: ETV TELEVISION Element type: Object	Interiors: EVEND VENDING MACHINE Element type: Object	Interiors: EWASHM WASHING MACHINE Element type: Object
		
Interiors: F4DL LATERAL FILE CABINET 4 DRAW Element type: Object	Interiors: FC3618 STORAGE CABINET 36W X 18D Element type: Object	Interiors: FE7422 EQUIP SHELUNG 74WX22D BRRKS Element type: Object

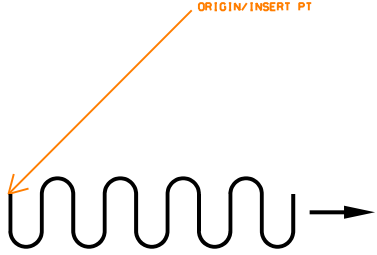
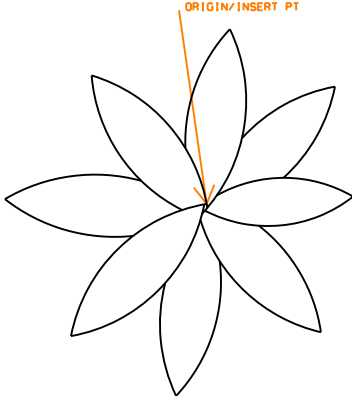
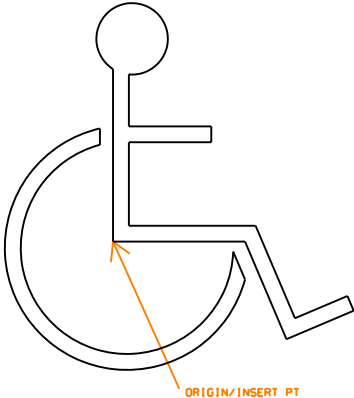
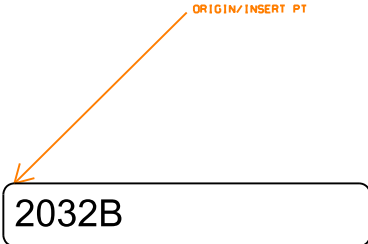
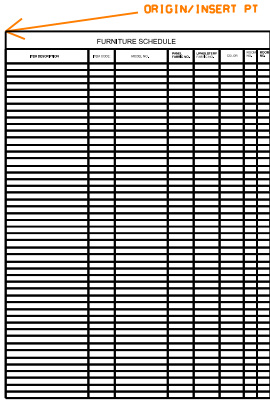
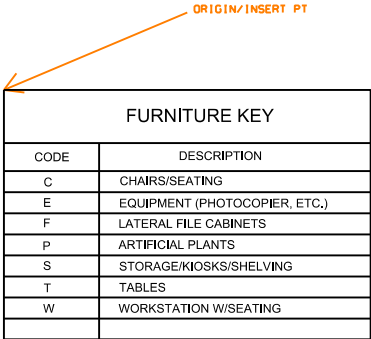
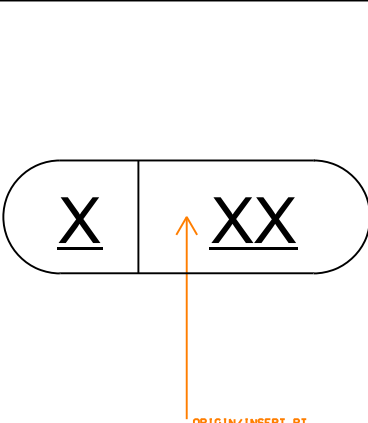
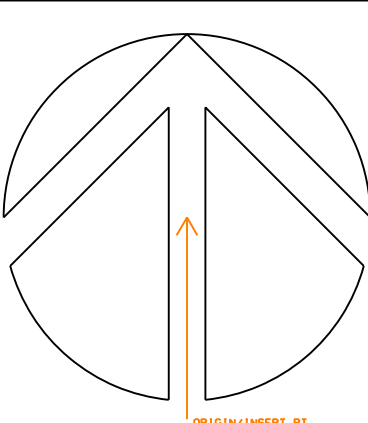
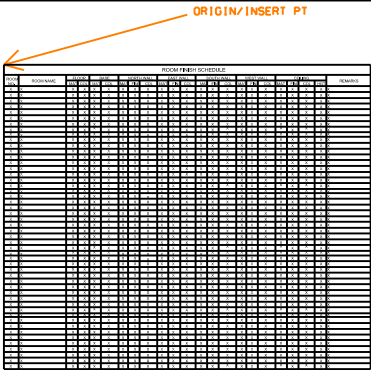
		
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Interiors: GIIS2 IDENT SIGN WITH 2 SLOTS Element type: Object	Interiors: GIPIC1 PICTOGRAM1 Element type: Object	Interiors: GIPIC2 PICTOGRAM 2 Element type: Object
		
Interiors: GMAN MAN SYM FR RESTROOM SIGNAGE Element type: Object	Interiors: GWOMAN WOMAN SYMFOR RESTRM SGNAGE Element type: Object	Interiors: SDMGT MGMNT CHAIR W ARMS 24WX22D Element type: Object

		
Interiors: SDSEC SECRTRL CHR NO ARMS 23WX22D Element type: Object	Interiors: SDTASK TASK CHAIR Element type: Object	Interiors: SGANG GANG SEATING W TABLE Element type: Object
		
Interiors: SSOF37 SOFA CHAIR 37W X 34D Element type: Object	Interiors: SSOF63 2 CUSHION SOFA 63W X 34D Element type: Object	Interiors: SSOF82 3 CUSHION SOFA 82.5W X 34D Element type: Object
		
Interiors: STAB24 CHAIR TABLET ARM 24W X 24D Element type: Object	Interiors: T42SQ TABLE 42SQ W ARMLESS CHR Element type: Object	Interiors: TMS30 MAILSORT TBLE 160H SLOTS30W Element type: Object

		
Interiors: TPOOL POOL TABLE Element type: Object	Interiors: TROUND ROUND TABLE Element type: Object	Interiors: W7230L WORKSTATION L UNIT LR Element type: Object
		
Interiors: W7230R WORKSTATION L UNIT RR Element type: Object	Interiors: WCPDSK DESK COMPUTER Element type: Object	Interiors: WFLIPR FLIPPER DOOR UNIT Element type: Object
		
Interiors: WLIGHT WORKSTATION LIGHT Element type: Object	Interiors: WPED WORKSTATION PEDESTAL Element type: Object	

11 Interiors Symbols Library

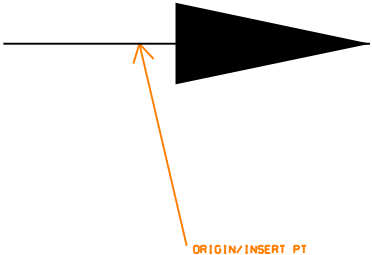
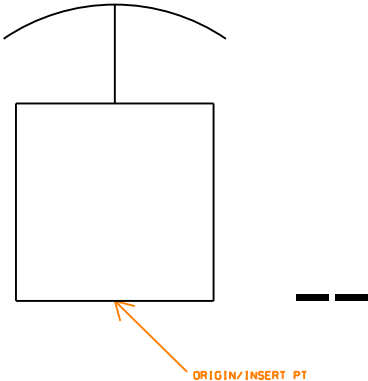
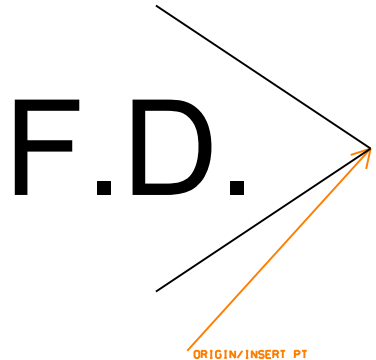
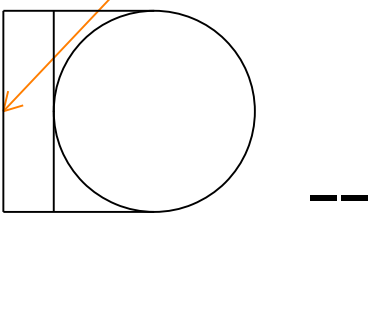
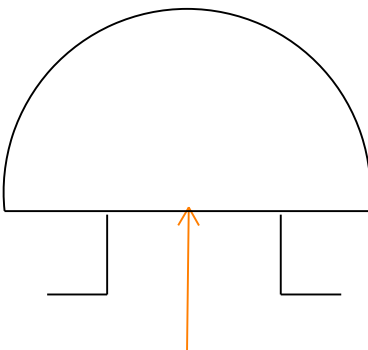
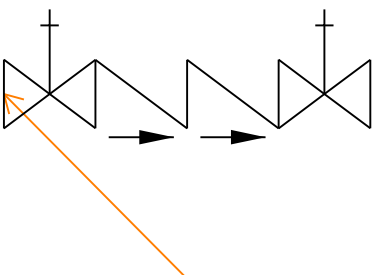
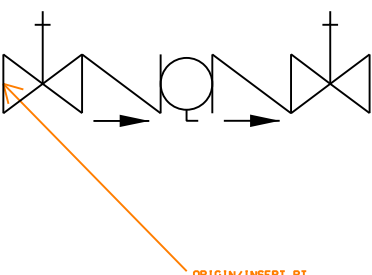
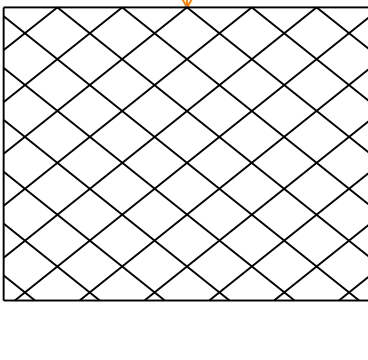
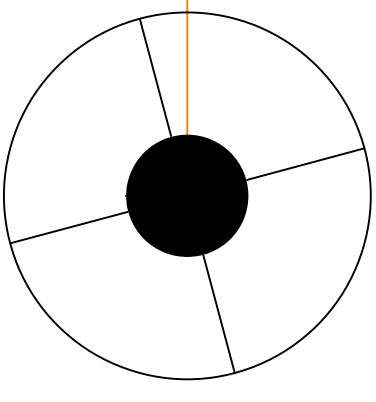
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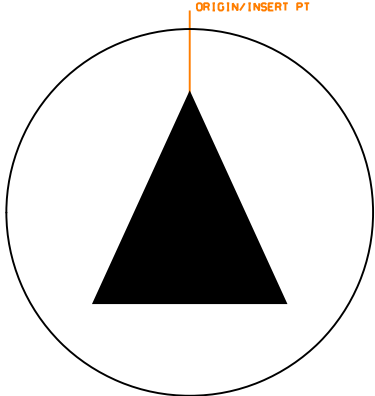
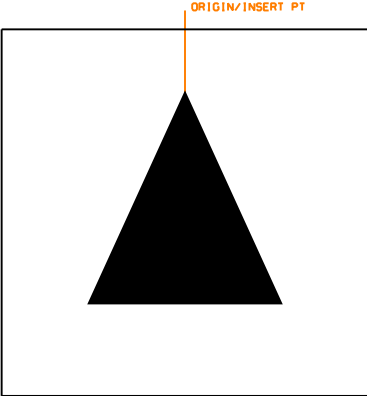
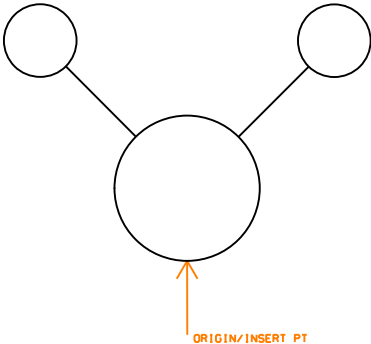
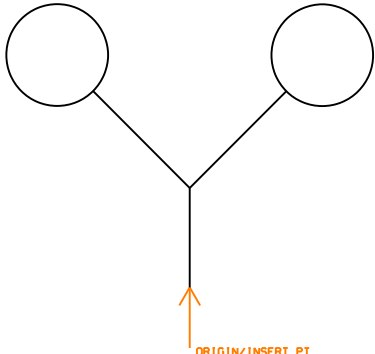
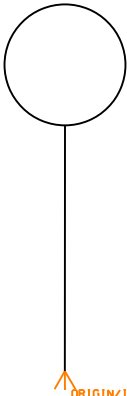
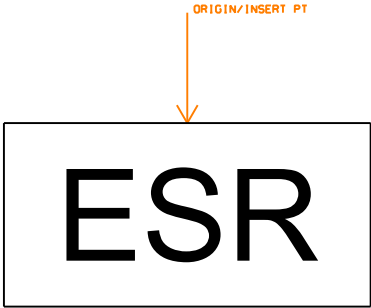
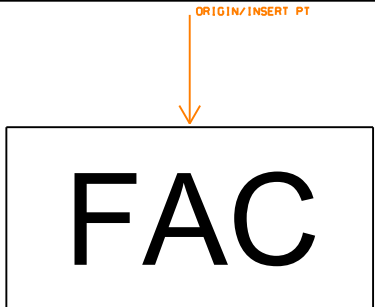
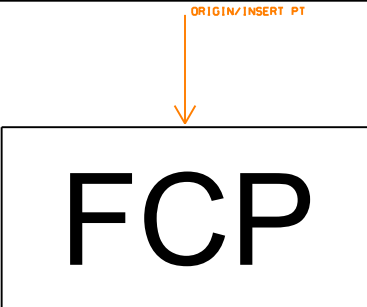
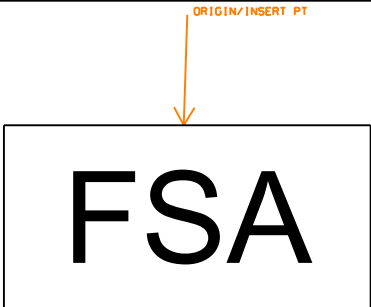
		
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Interiors: GIID IDENTIFICATION SIGN Element type: Symbol	Interiors: MFMATL FURNITURE MATERIAL LIST Element type: Symbol	Interiors: MFSCHD FURNITURE SCHEDULE Element type: Symbol
		
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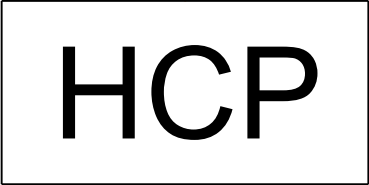
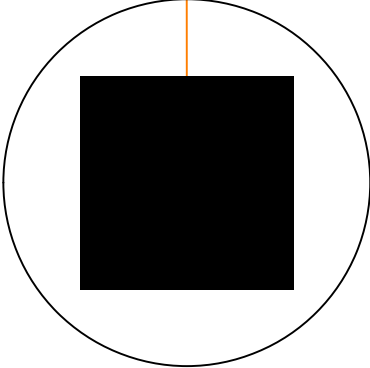
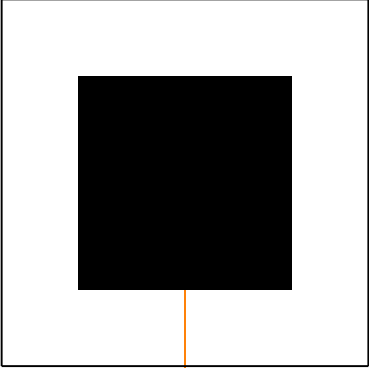
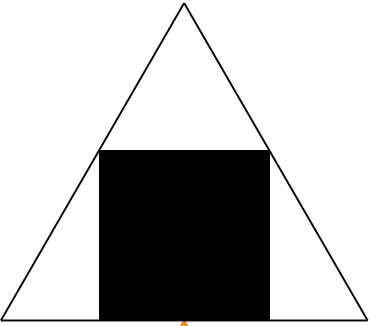
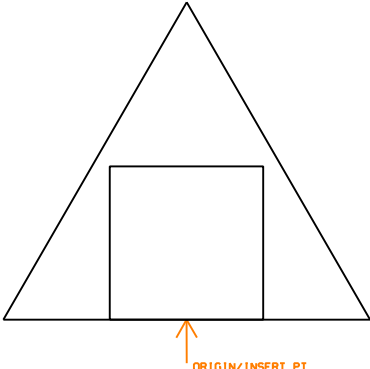
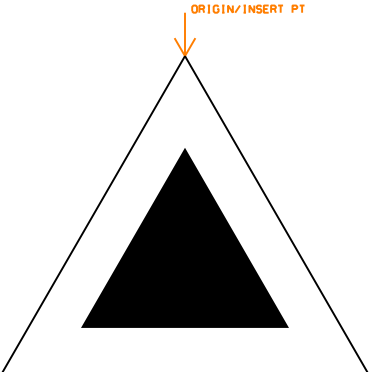
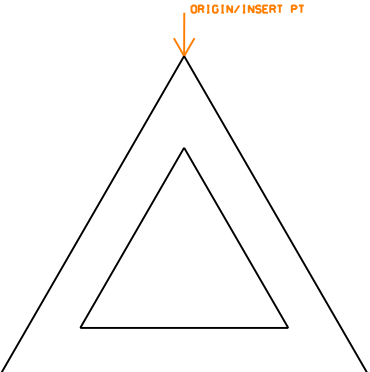
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SIGNAGE SCHEDULE
Element type: Symbol

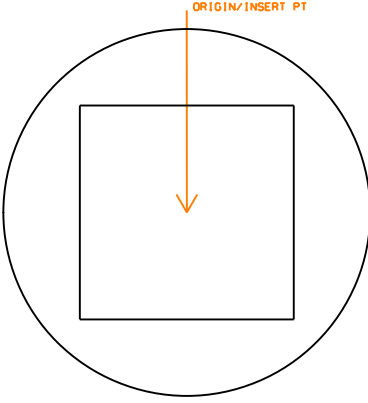
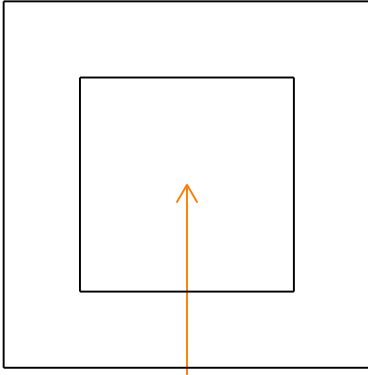
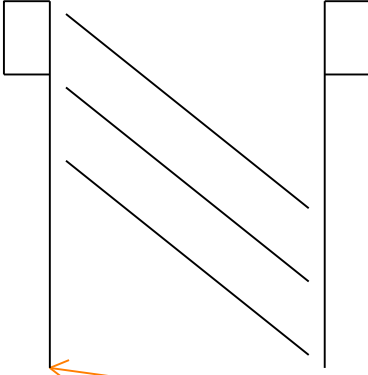
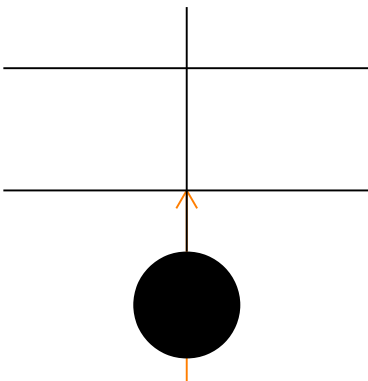
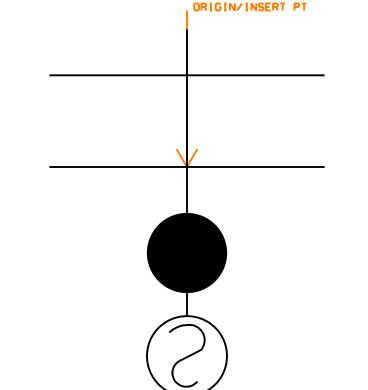
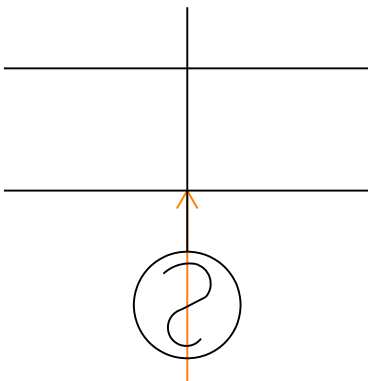
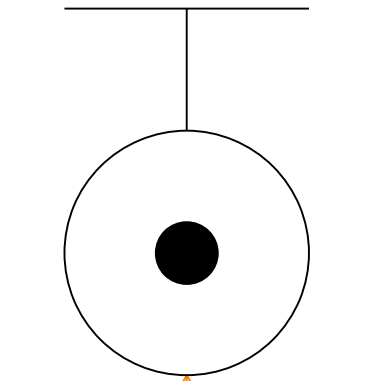
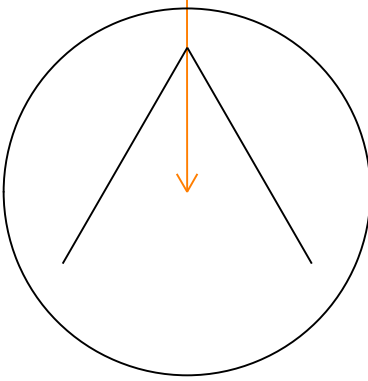
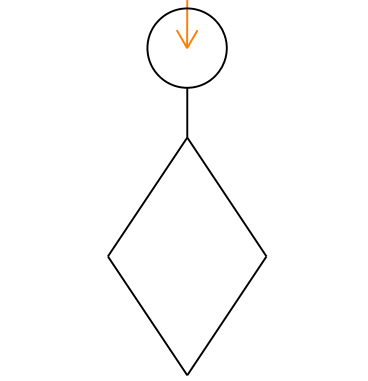
12 Fire Protection Symbols Library

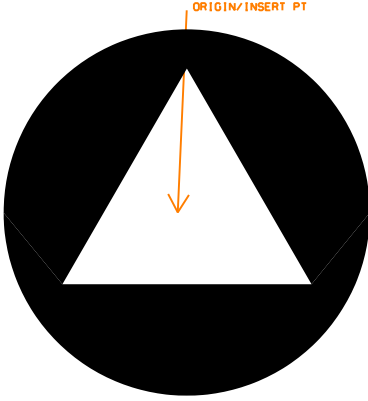
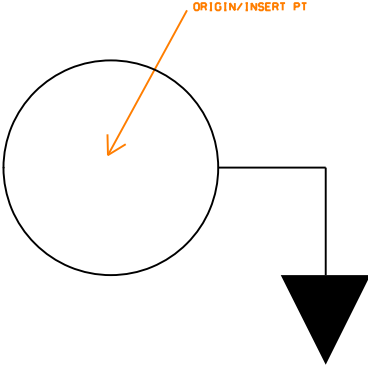
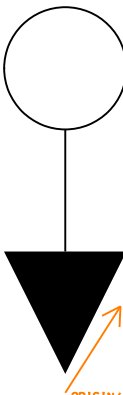
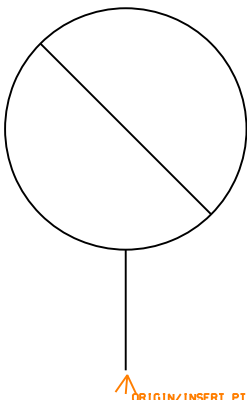
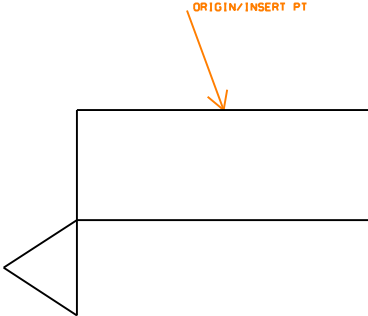
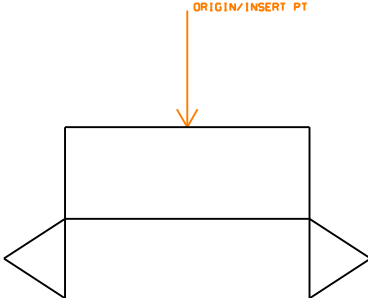
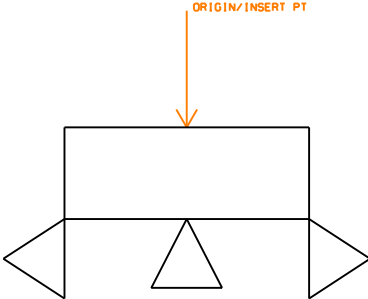
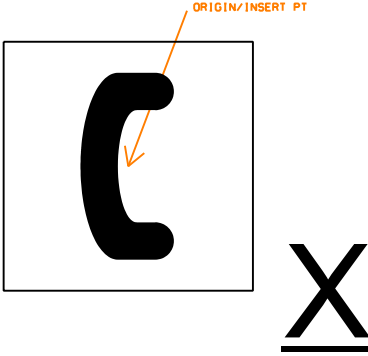
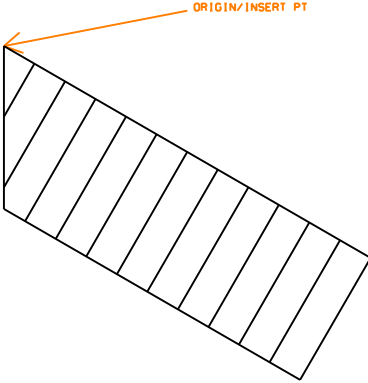
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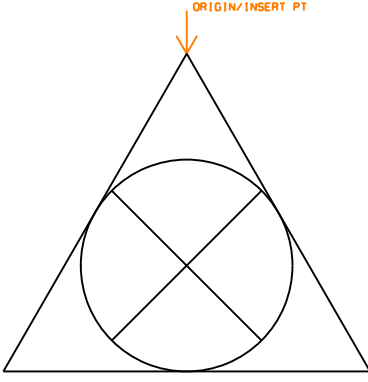
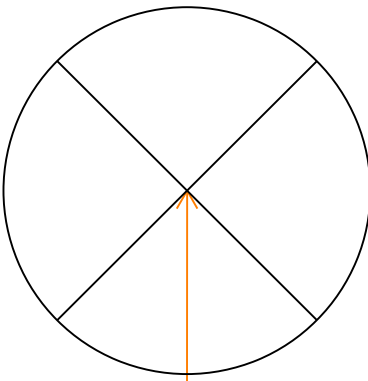
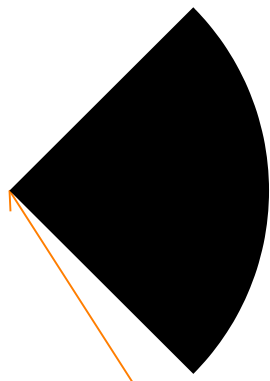
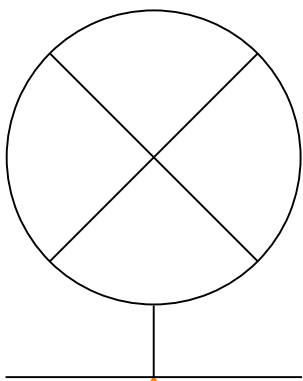
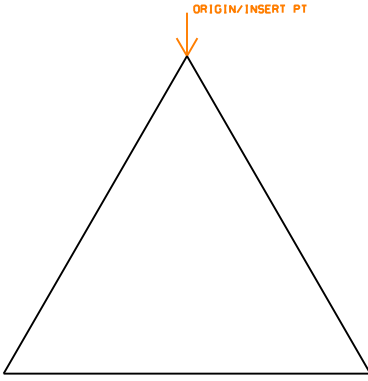
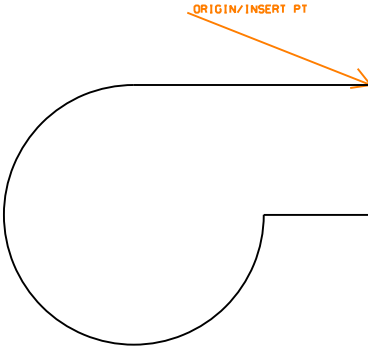
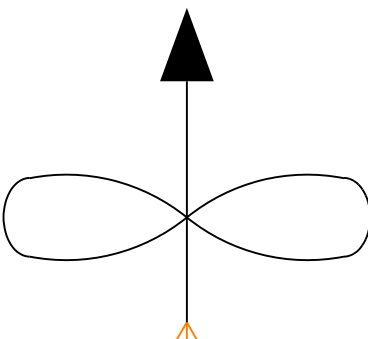
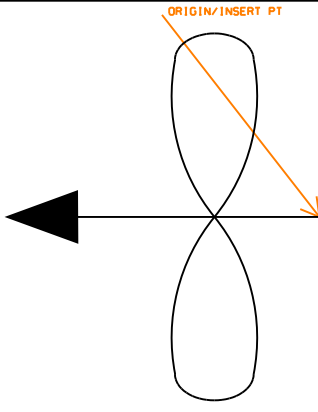
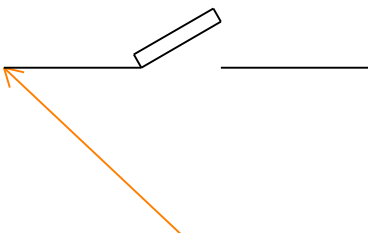
		
Fire Protection: 1DIR DIRECTION ARROW Element type: Symbol	Fire Protection: ABORT ABORT SWITCH Element type: Symbol	Fire Protection: ACCESS FIRE DEPARTMENT ACCESS Element type: Symbol
		
Fire Protection: AGSTCN AGENT STORAGE CONTAINER Element type: Symbol	Fire Protection: BELLFA FIRE ALARM BELL Element type: Symbol	Fire Protection: BFPDCK BACKFLOW PREVENTER DBL CHK Element type: Symbol
		
Fire Protection: BFPRPZ BACKFLOW PREVENTER RPZ Element type: Symbol	Fire Protection: BOILER BOILER Element type: Symbol	Fire Protection: CHIMNY CHIMNEY Element type: Symbol

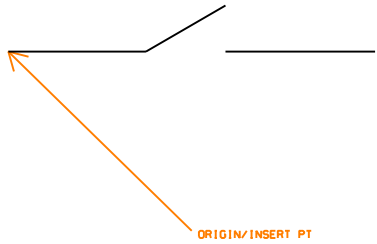
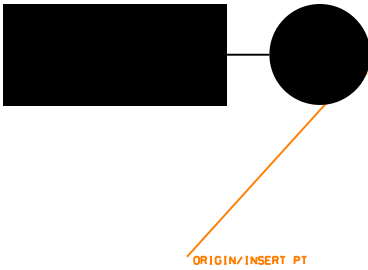
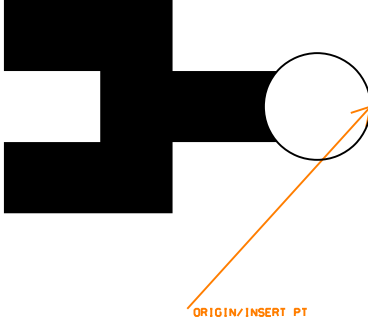
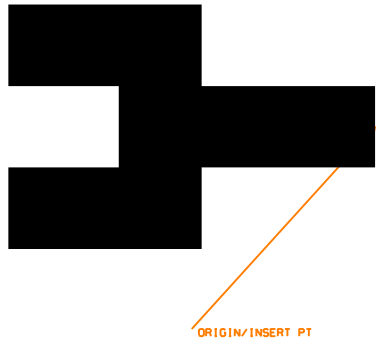
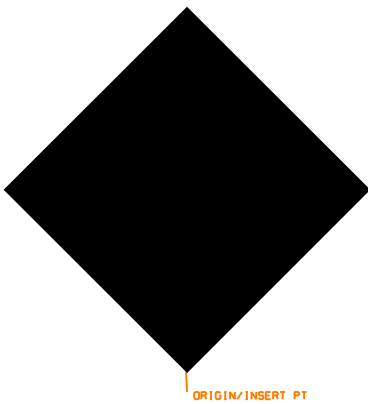
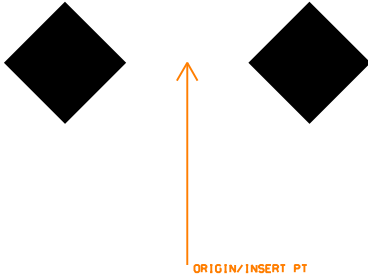
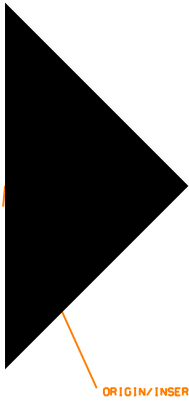
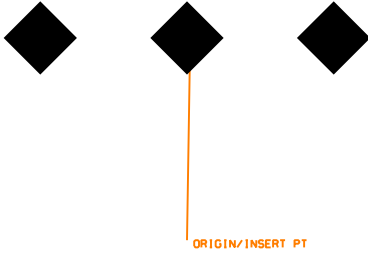
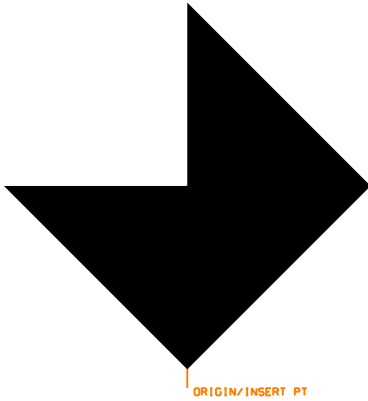
		
Fire Protection: CO2AA CO2 AUTO ACTUATED EXNGSHR Element type: Symbol	Fire Protection: CO2MA CO2 MAN ACTUATED EXTNGSHR Element type: Symbol	Fire Protection: CONSFS FREESTNDNG SIAMESE F.D. CON Element type: Symbol
		
Fire Protection: CONSIA SIAMESE FIRE DPT CONNECTION Element type: Symbol	Fire Protection: CONSNG SINGLE FIRE DPT. CONNECTION Element type: Symbol	Fire Protection: CPESR ELEVATOR STATUS RECALL Element type: Symbol
		
Fire Protection: CPFAC FIRE AL COMMUNICATOR Element type: Symbol	Fire Protection: CPFCP F A CONTROL PANEL Element type: Symbol	Fire Protection: CPFSA F A FIRE SYS ANNUNCIATOR Element type: Symbol

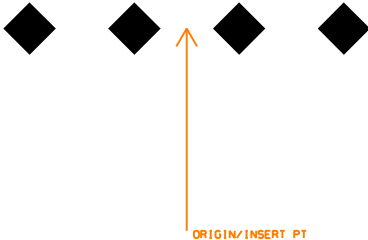
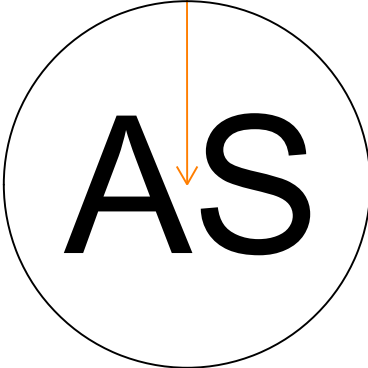
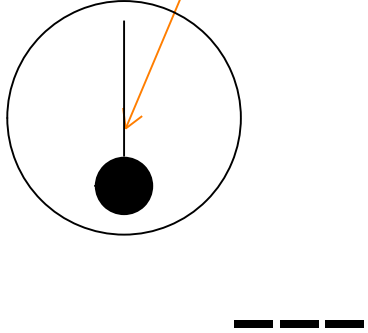
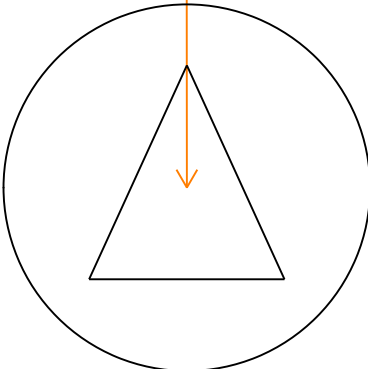
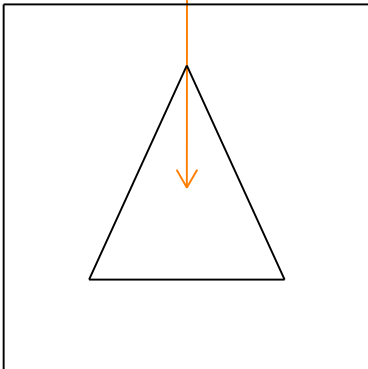
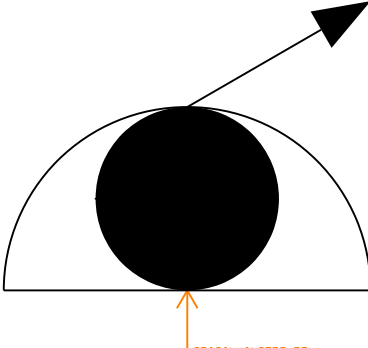
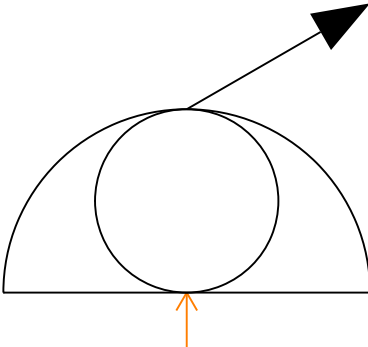
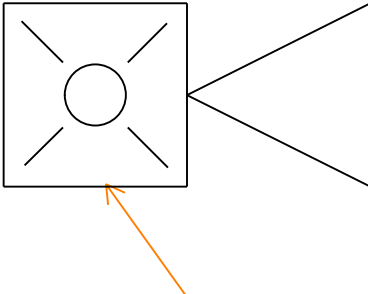
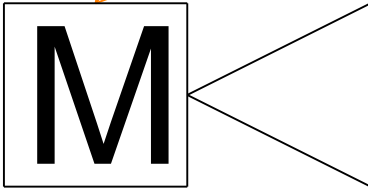
		
Fire Protection: CPFTR F A TRANSMITTER Element type: Symbol	Fire Protection: CPHCP HALON CONTROL PANEL Element type: Symbol	Fire Protection: CPHVA CONTROL PANEL HVAC Element type: Symbol
		
Fire Protection: DCATAA ALLTYPE FIREEXTNGSHRAUTOACT Element type: Symbol	Fire Protection: DCATMA ALLTYPE FIREEXTNGSHR MANACT Element type: Symbol	Fire Protection: DCEABC DRY CHEM EXTNGSHR ABC TYPE Element type: Symbol
		
Fire Protection: DCEBC DRY CHEM EXTNGUISHR BC TYPE Element type: Symbol	Fire Protection: DCECO2 CO2 EXTINGUISHER Element type: Symbol	Fire Protection: DCEHLN HALON OR CLEANAGENTEXTNGSHR Element type: Symbol

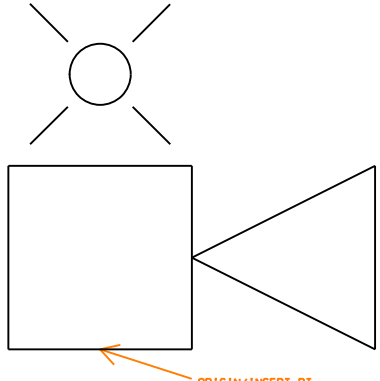
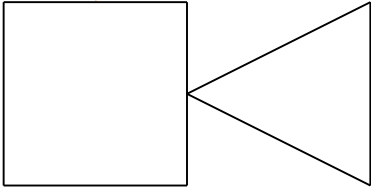
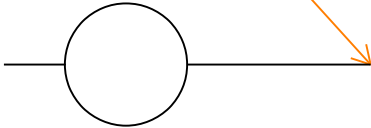
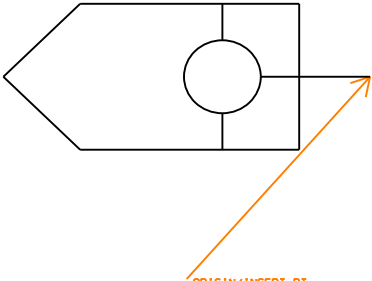
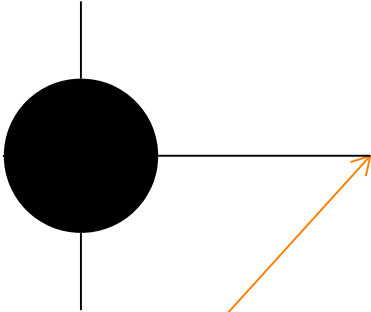
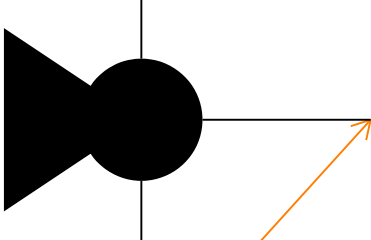
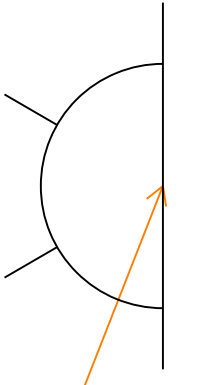
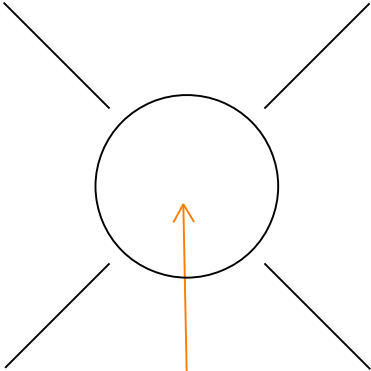
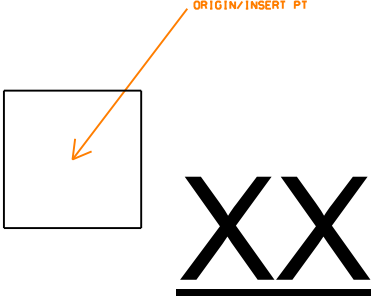
		
Fire Protection: DCLGAA DRY CHEM AUTO ACT EXTNGSHR Element type: Symbol	Fire Protection: DCLGMA DRY CHEM MAN ACTUATED Element type: Symbol	Fire Protection: DMPBAR BAROMETRIC DAMPER Element type: Symbol
		
Fire Protection: DMPFIR FIRE DAMPER Element type: Symbol	Fire Protection: DMPFS FIRE SMOKE DAMPER Element type: Symbol	Fire Protection: DMPSMK SMOKE DAMPER Element type: Symbol
		
Fire Protection: DRHOLD DOOR HOLDER Element type: Symbol	Fire Protection: DTFLAM FLAME DETECTOR Element type: Symbol	Fire Protection: DTFLOW FA FLOW DETECTOR Element type: Symbol

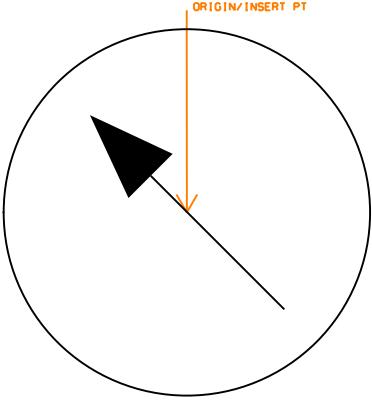
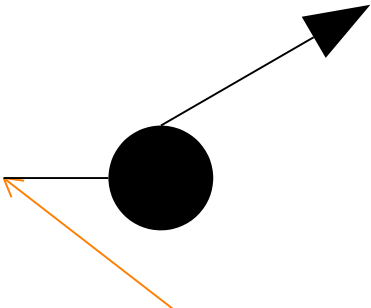
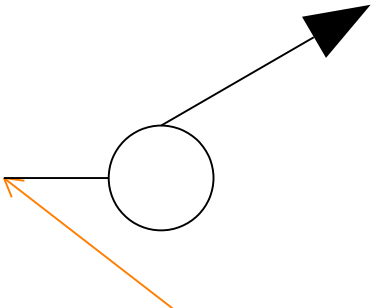
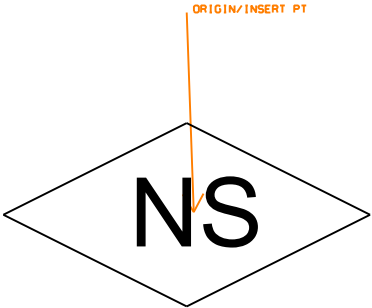
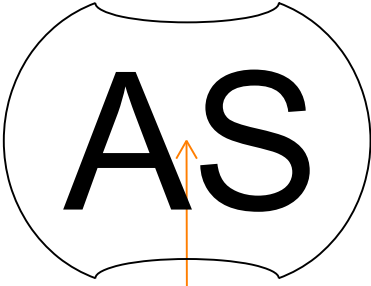
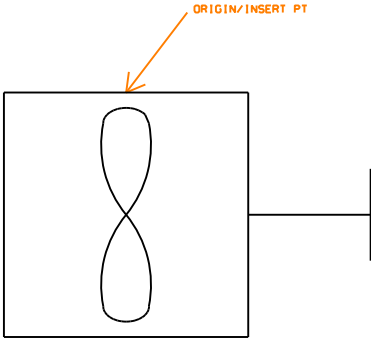
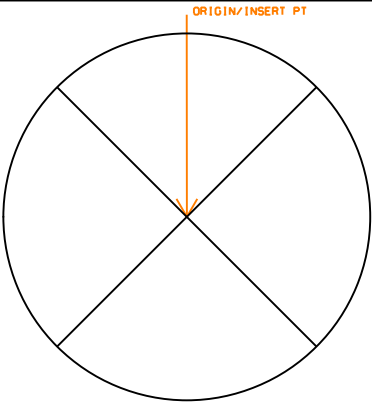
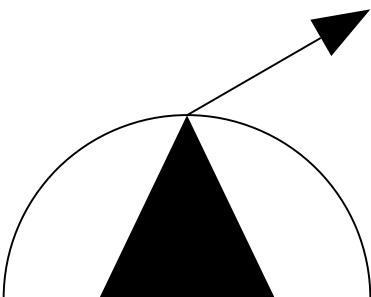
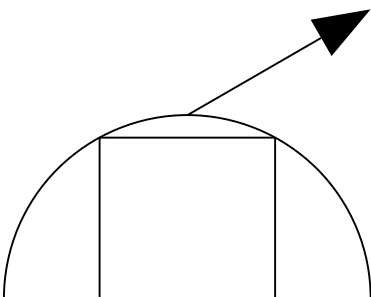
		
Fire Protection: DTGAS FA GAS DETECTOR Element type: Symbol	Fire Protection: DTLEVL FA LEVEL DETECTOR Element type: Symbol	Fire Protection: DTPRES FA PRESSURE DETECTOR Element type: Symbol
		
Fire Protection: DTTAMP FA TAMPER DETECTOR Element type: Symbol	Fire Protection: ELBP1L 1LAMP EMRGNCY LGHTBTTRY PWR Element type: Symbol	Fire Protection: ELBP2L 2LAMP EMRGNCY LGHTBTTRY PWR Element type: Symbol
		
Fire Protection: ELBP3L 3LAMP EMRGNCY LGHTBTTRY PWR Element type: Symbol	Fire Protection: EPSTA EMERGENCY PHONE STATION Element type: Symbol	Fire Protection: ESCAPE FIRE ESCAPE Element type: Symbol

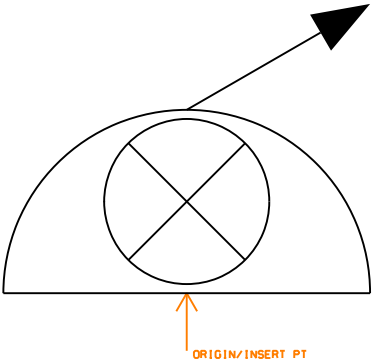
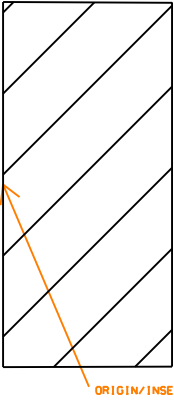
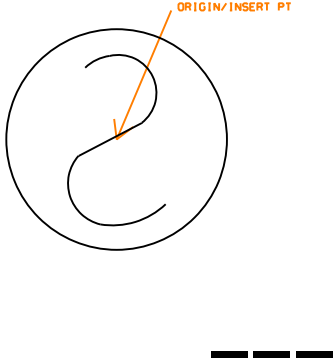
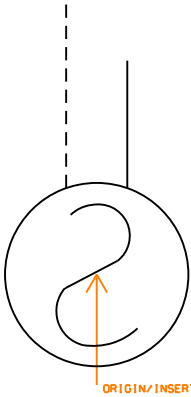
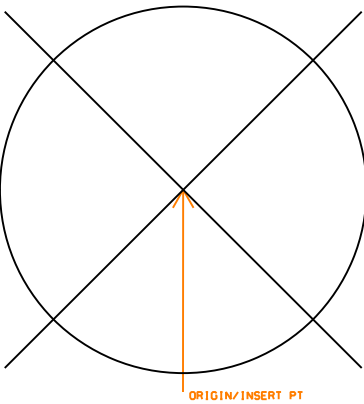
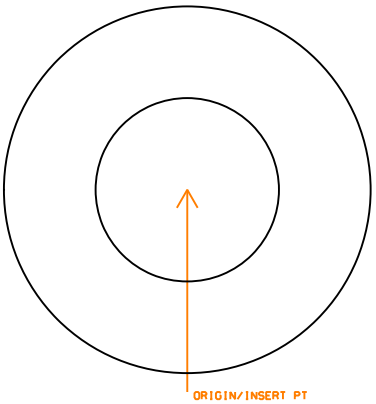
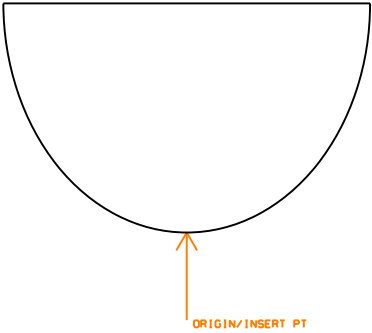
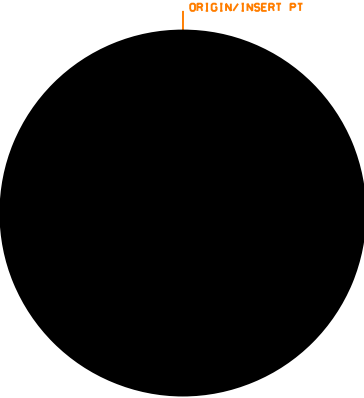
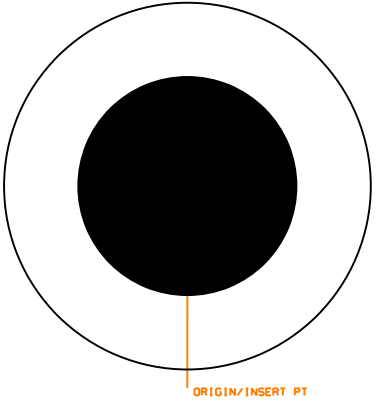
		
Fire Protection: EXFOAM FOAM EXTINGUISHER Element type: Symbol	Fire Protection: EXITCM CEILING MNTD EXITSIGN LIGHT Element type: Symbol	Fire Protection: EXITLF EXIT SIGN LIGHTED FACE Element type: Symbol
		
Fire Protection: EXITWM WALL MOUNTD EXIT SIGN LIGHT Element type: Symbol	Fire Protection: EXWATR WATER EXTINGUISHER Element type: Symbol	Fire Protection: FANDCT DUCT FAN Element type: Symbol
		
Fire Protection: FANGEN GENERAL FAN Element type: Symbol	Fire Protection: FANWAL WALL FAN Element type: Symbol	Fire Protection: FDOR3 3HR RATED FIRE DOOR IN WALL Element type: Symbol

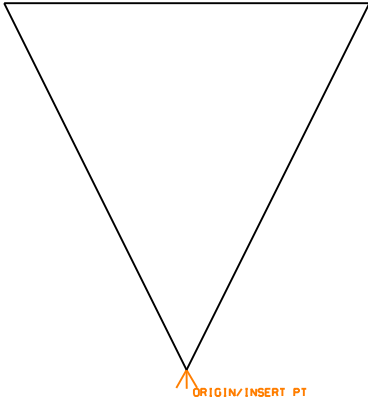
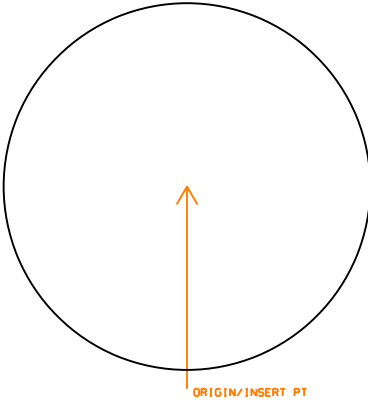
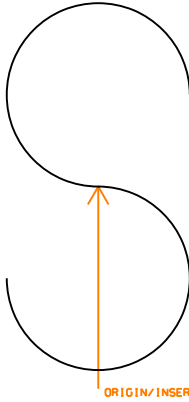
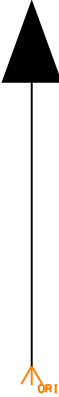
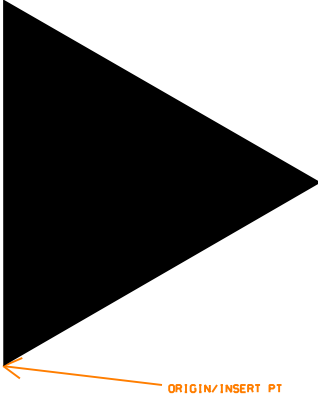
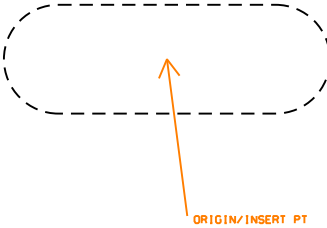
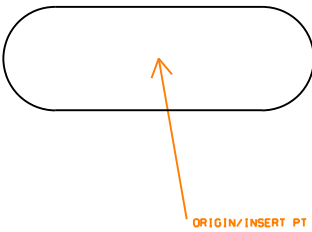
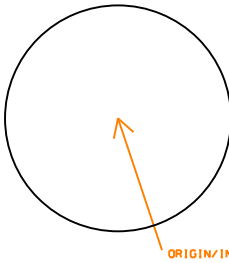
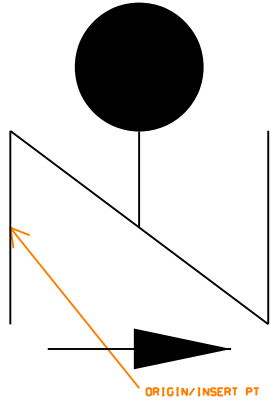
		
Fire Protection: FDORL3 WALL W 3 HOUR RATED DOOR Element type: Symbol	Fire Protection: FPDRIV FIRE PUMP WITH DRIVES Element type: Symbol	Fire Protection: FPFREE FREE STANDING TEST HEADER Element type: Symbol
		
Fire Protection: FPTEST WALL MOUNTED TEST HEADER Element type: Symbol	Fire Protection: FRR1HR 1 HR FIRE RATING Element type: Symbol	Fire Protection: FRR2HR 2 HR FIRE RATING Element type: Symbol
		
Fire Protection: FRR30M 30 MIN FIRE RATING Element type: Symbol	Fire Protection: FRR3HR 3 HR FIRE RATING Element type: Symbol	Fire Protection: FRR45M 45 MIN FIRE RATING Element type: Symbol

		
Fire Protection: FRR4HR 4 HR FIRE RATING Element type: Symbol	Fire Protection: FULLSS FULLY SPRINKLERED SPACE Element type: Symbol	Fire Protection: HD HEAT DETECTOR Element type: Symbol
		
Fire Protection: HLNAA AUTO ACT HALON EXTINGUISHER Element type: Symbol	Fire Protection: HLNMA MAN ACT HALON EXTNGSHR Element type: Symbol	Fire Protection: HOSECS HOSE STATION CHRGD STNDPIPE Element type: Symbol
		
Fire Protection: HOSEDS HOSE STATION DRY STANDPIPE Element type: Symbol	Fire Protection: HRN1A HORN LIGHT 1 ASSY Element type: Symbol	Fire Protection: HRNMIN MINI HORN Element type: Symbol

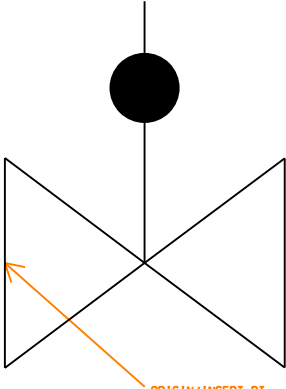
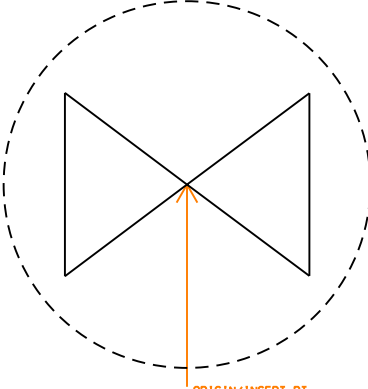
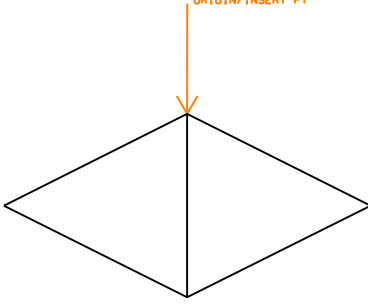
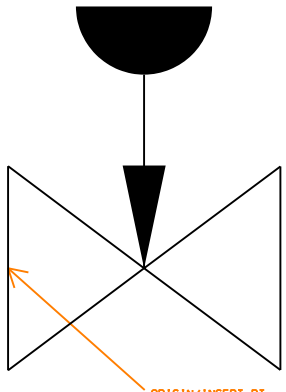
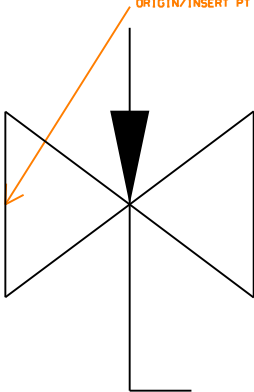
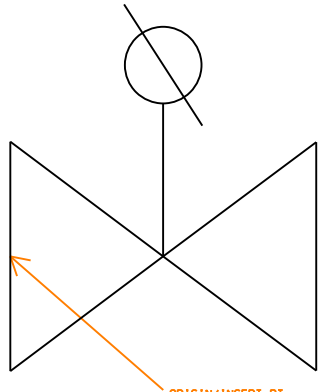
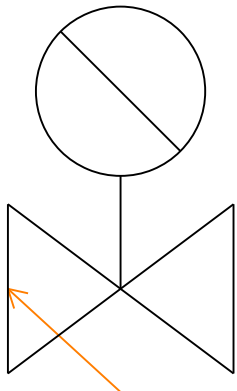
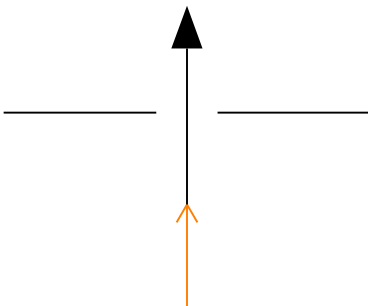
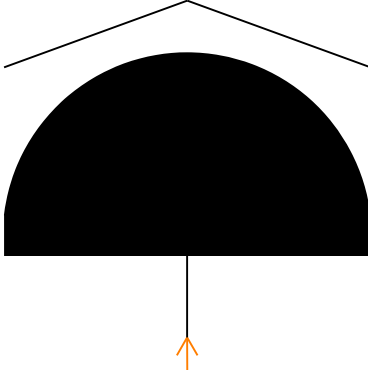
		
Fire Protection: HRNSA SEPARATE ASSEMBLY HORN LGHT Element type: Symbol	Fire Protection: HRNSPK HORN SPEAKER Element type: Symbol	Fire Protection: HYDPR1 PRIV HYDRANT 1 HOSE OUTLET Element type: Symbol
		
Fire Protection: HYDPR2 PRIVATE HOUSED HYDRANT Element type: Symbol	Fire Protection: HYDPU2 PUBLIC TWO HOSE OUTLET HYD Element type: Symbol	Fire Protection: HYDPUP PUBHYDRNT2HOSOUTLTMPCONN Element type: Symbol
		
Fire Protection: HYDW2H WALL HYDRANT 2 HOSE OUTLET Element type: Symbol	Fire Protection: LITFAS FA STROBE LIGHT Element type: Symbol	Fire Protection: MANSTA MANUAL STATION Element type: Symbol

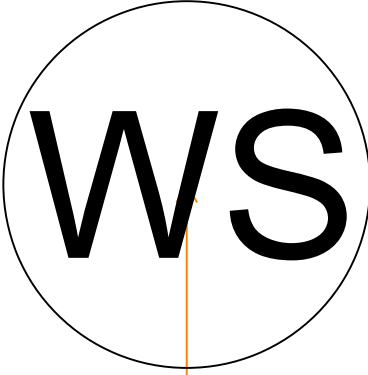
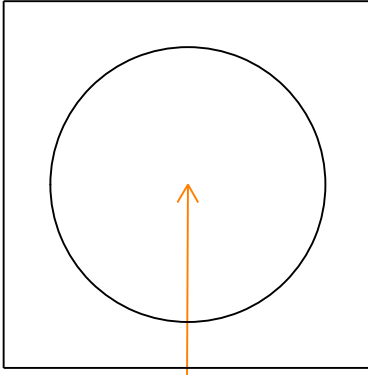
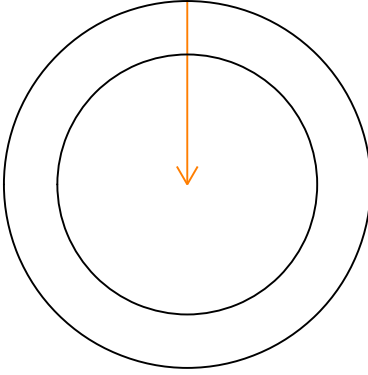
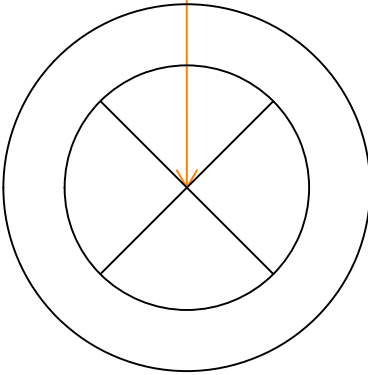
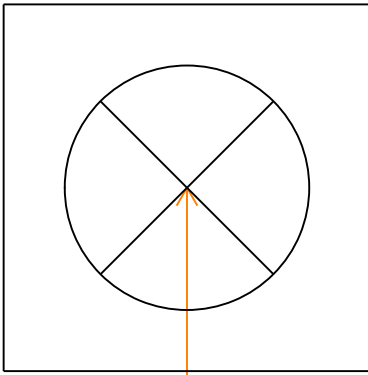
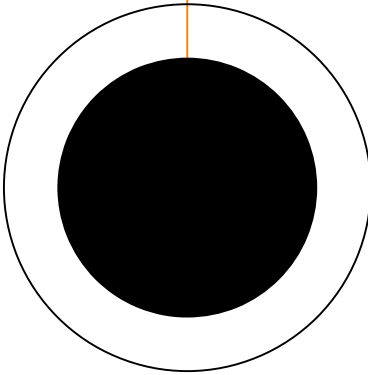
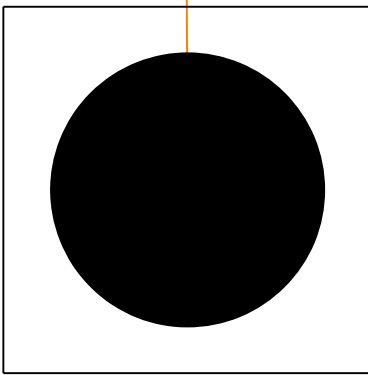
		
Fire Protection: METRFP FP METER Element type: Symbol	Fire Protection: MNCHRG MONITOR NOZZLE CHARGED Element type: Symbol	Fire Protection: MNDRY MONITOR NOZZLE DRY Element type: Symbol
		
Fire Protection: NONSS NONSPRINKLERED SPACE Element type: Symbol	Fire Protection: PARTSS PARTIALLY SPRINKLERED SPACE Element type: Symbol	Fire Protection: PURGE MANUAL PURGE CONTROL Element type: Symbol
		
Fire Protection: RISER RISER Element type: Symbol	Fire Protection: RSCO2 CO2 REEL STATION Element type: Symbol	Fire Protection: RSDRYC DRY CHEMICAL REEL STATION Element type: Symbol

		
Fire Protection: RSFOAM FOAM REEL STATION Element type: Symbol	Fire Protection: SCREEN SCREEN Element type: Symbol	Fire Protection: SD SMOKE DETECTOR Element type: Symbol
		
Fire Protection: SDUCT SMOKE DETECTOR FOR DUCT Element type: Symbol	Fire Protection: SHGARD SPRINKLER HEAD W GUARD Element type: Symbol	Fire Protection: SHNUU NIPPLED UP UPRIGHT SPRINKLR Element type: Symbol
		
Fire Protection: SHOUT OUTSIDE SPRINKLER HEAD Element type: Symbol	Fire Protection: SHPEND PENDENT SPRINKLER HEAD Element type: Symbol	Fire Protection: SHPNDN PENDENTSPRINKLR DROP NIPPL Element type: Symbol

		
Fire Protection: SHSIDE SIDEWALL SPRINKLER HEAD Element type: Symbol	Fire Protection: SHUPRT UPRIGHT SPRINKLER HEAD Element type: Symbol	Fire Protection: SMKBR SMOKE BARRIER Element type: Symbol
		
Fire Protection: SSNOZZ SPECIAL SPRAY NOZZLE Element type: Symbol	Fire Protection: THRUST THRUST BLOCK Element type: Symbol	Fire Protection: TNKBG TANK BELOW GROUND Element type: Symbol
		
Fire Protection: TNKHAG TANK HORIZ ABOVE GROUND Element type: Symbol	Fire Protection: TNKVAG TANK VERTICAL ABOVE GROUND Element type: Symbol	Fire Protection: VLVCHA ALARM CHECK VALVE Element type: Symbol

Fire Protection: VLVCHK CHECK VALVE Element type: Symbol	Fire Protection: VLVDEL DELUGE VALVE Element type: Symbol	Fire Protection: VLVDRY DRY PIPE VALVE Element type: Symbol
Fire Protection: VLVFLT FLOAT VALVE Element type: Symbol	Fire Protection: VLVGEN GENERAL VALVE Element type: Symbol	Fire Protection: VLVIBF INDICATING BUTTERFLY VALVE Element type: Symbol
Fire Protection: VLVKEY KEY OPERATED VALVE Element type: Symbol	Fire Protection: VLVNON VALVE NONRISING STEM Element type: Symbol	Fire Protection: VLVOSY OS Y VALVE Element type: Symbol

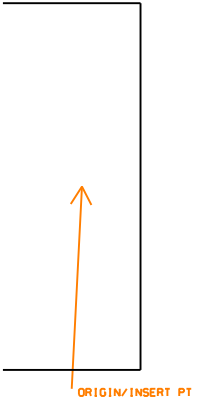
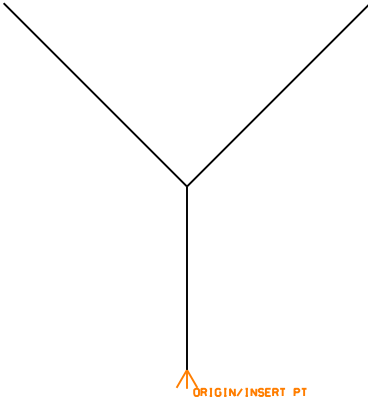
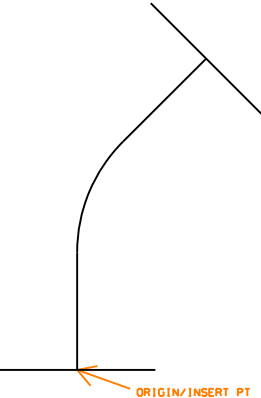
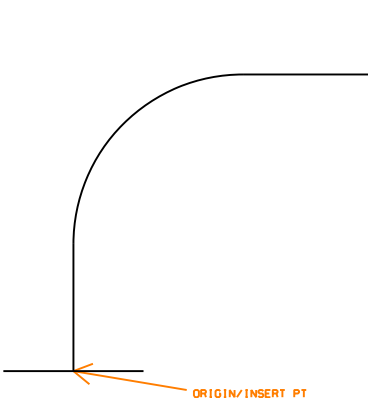
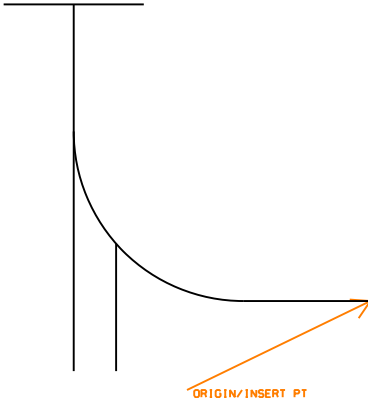
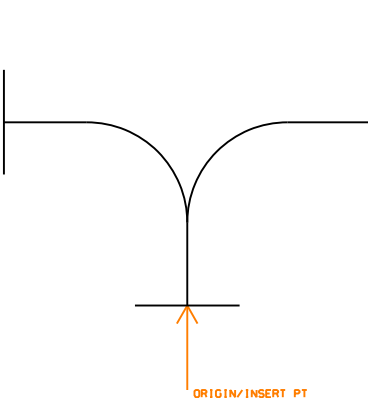
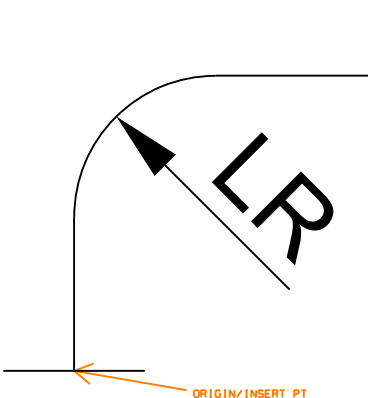
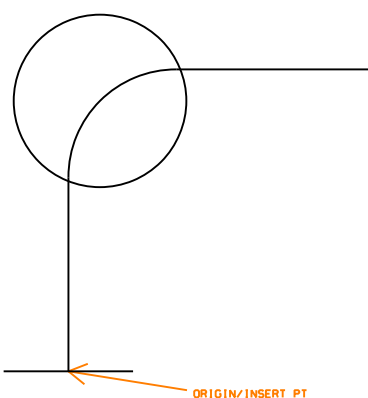
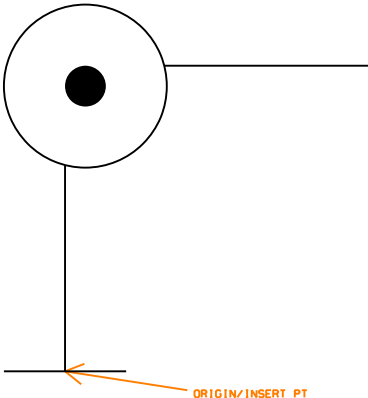
		
Fire Protection: VLVPI POST INDICATOR VALVE Element type: Symbol	Fire Protection: VLVPI VALVE IN PIT Element type: Symbol	Fire Protection: VLVPRE PREACTION VALVE Element type: Symbol
		
Fire Protection: VLVPRG PRESSURE REGULATING VALVE Element type: Symbol	Fire Protection: VLVPRV PRESSURE RELIEF VALVE Element type: Symbol	Fire Protection: VLVQOD VALVE W QUICK OPENING DEVICE Element type: Symbol
		
Fire Protection: VLVTDS VALVE TAMPERDETECTION SWITC Element type: Symbol	Fire Protection: VNTOPN VENTILATION OPENINGS Element type: Symbol	Fire Protection: WALARM WATER MOTOR ALARM Element type: Symbol

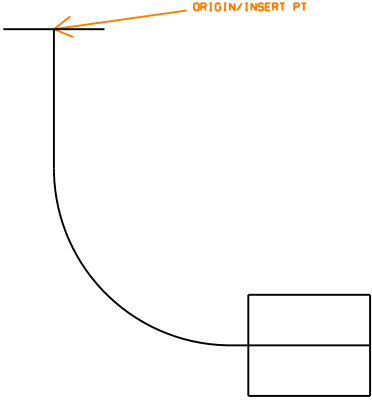
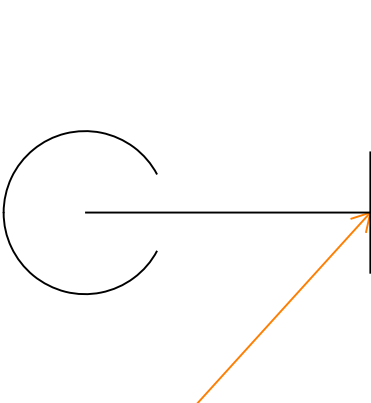
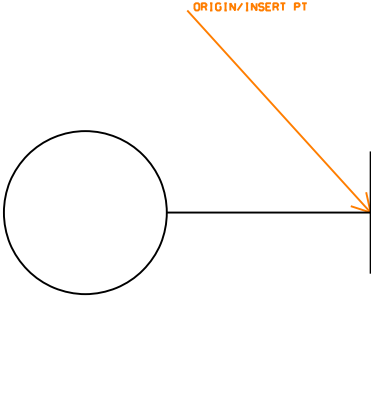
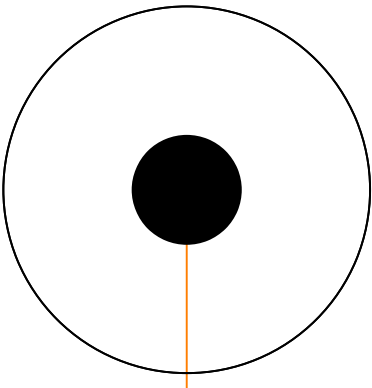
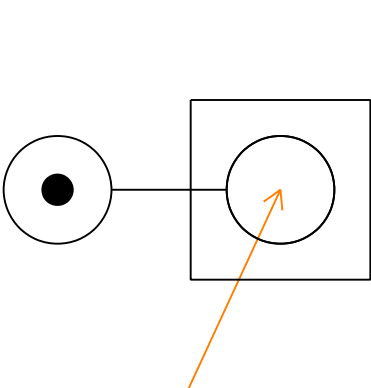
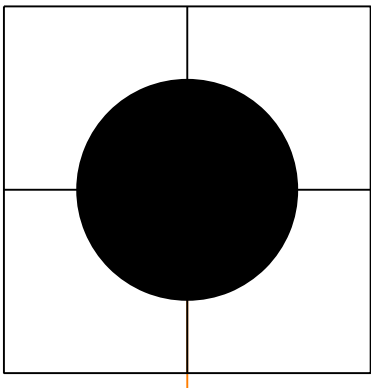
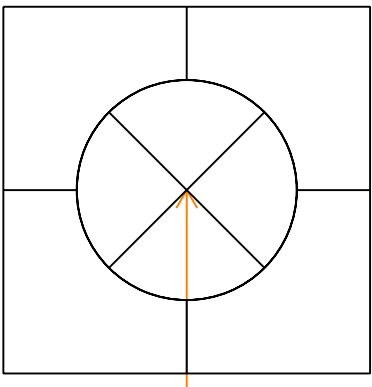
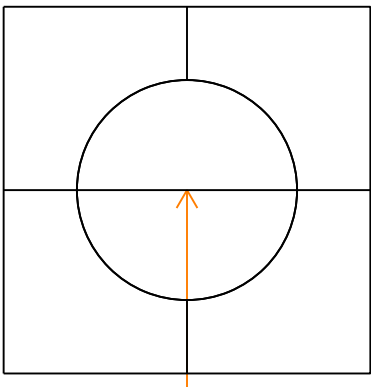
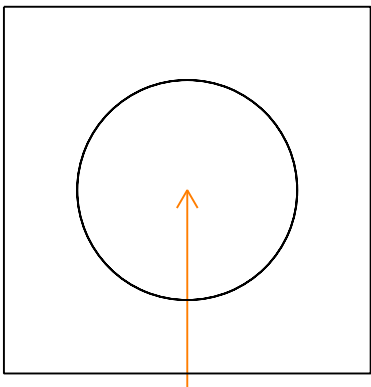
		
Fire Protection: WATRSS WATER SPRAY SYSTEM Element type: Symbol	Fire Protection: WBDSMA WATER BASED DRY SYS MAN ACT Element type: Symbol	Fire Protection: WBDSSA WATERBASED DRY SYS AUTO ACT Element type: Symbol
		
Fire Protection: WBFSAA WATR BASED FOAM SYS AUTOACT Element type: Symbol	Fire Protection: WBFSMA WATR BASED FOAM SYS MANACT Element type: Symbol	Fire Protection: WBWSAA WATERBASED WET SYS AUTO ACT Element type: Symbol
 Fire Protection: WBWSMA WATER BASED WET SYS MAN ACT Element type: Symbol		

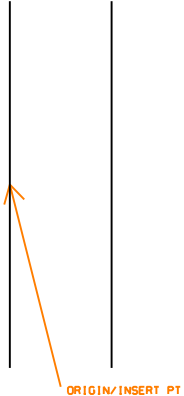
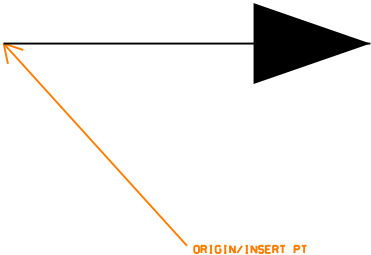
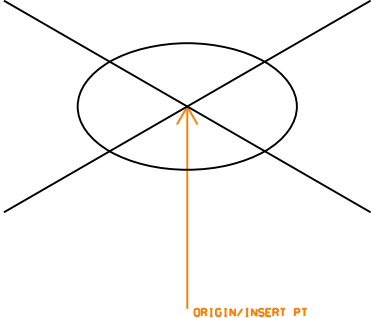
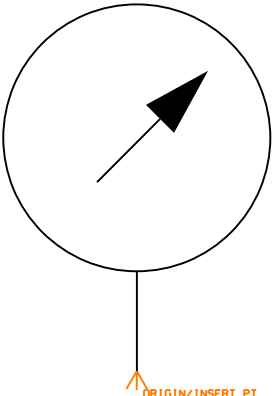
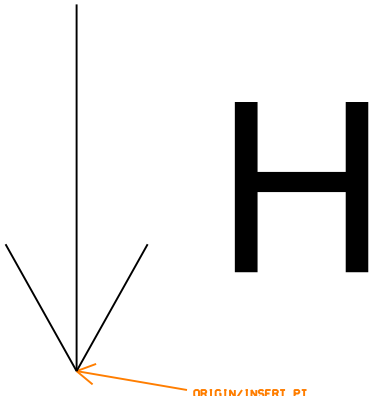
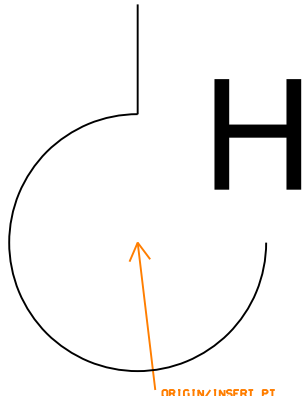
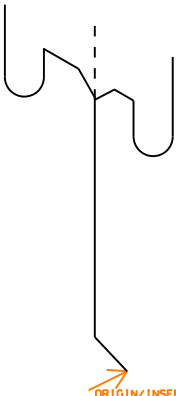
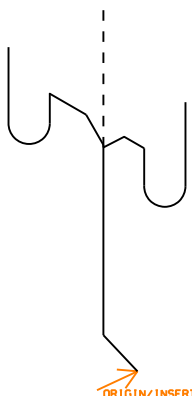
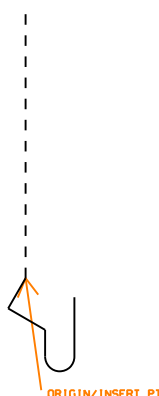
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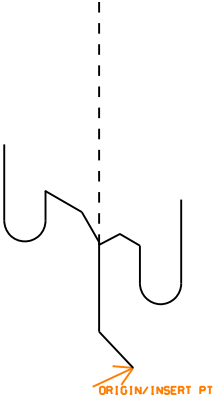
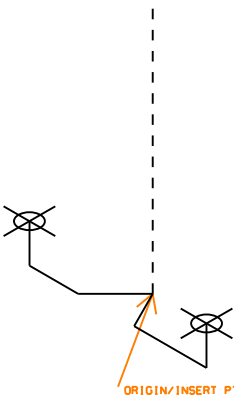
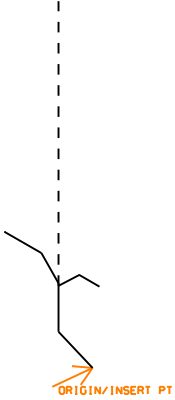
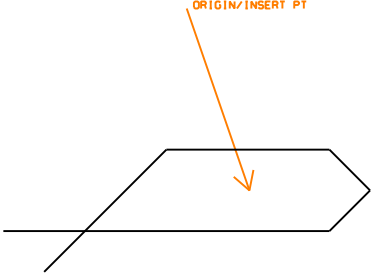
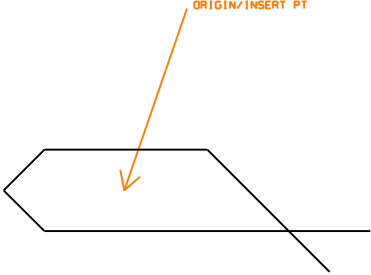
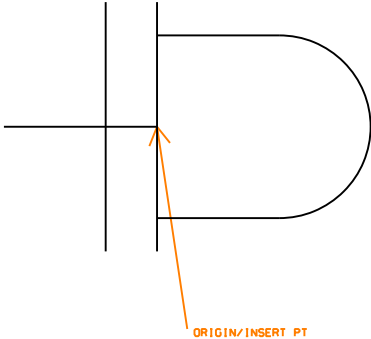
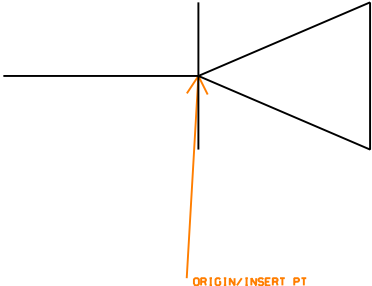
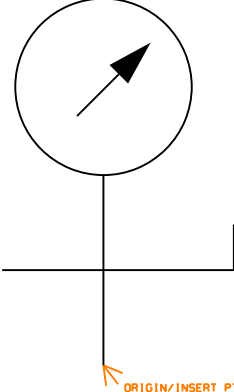
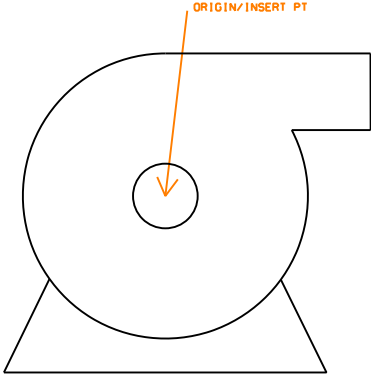
13 Plumbing Symbols Library

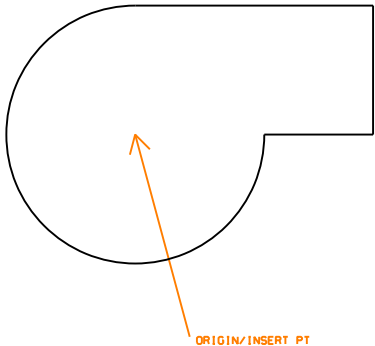
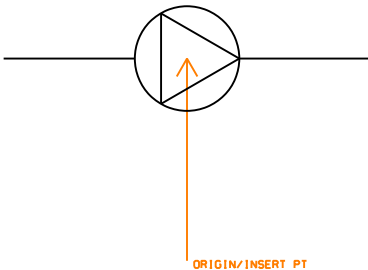
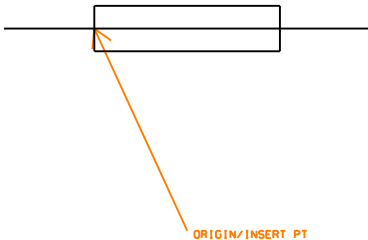
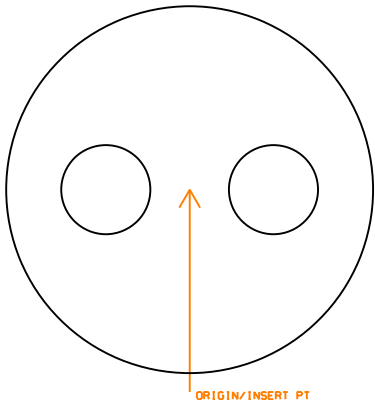
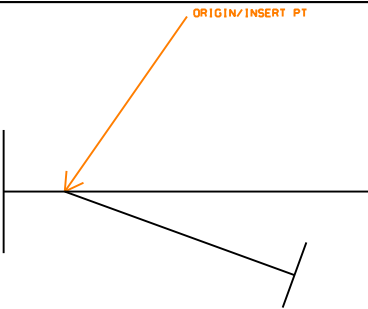
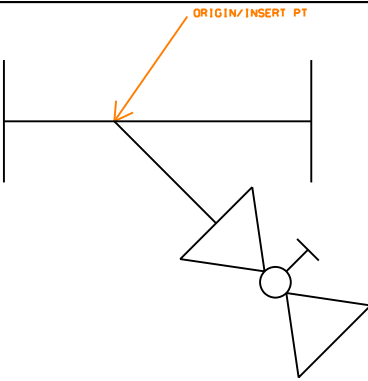
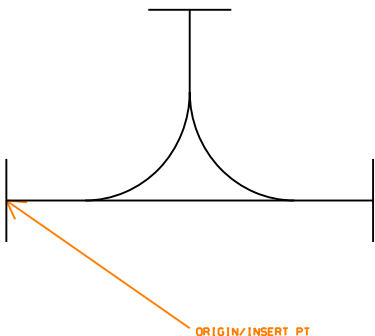
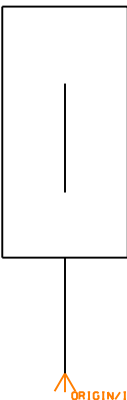
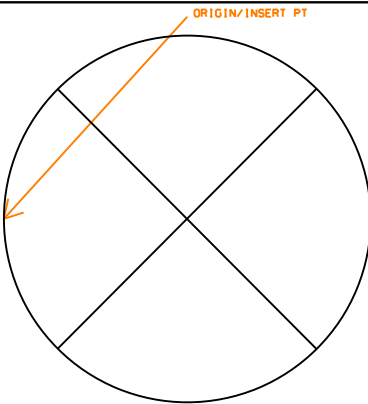
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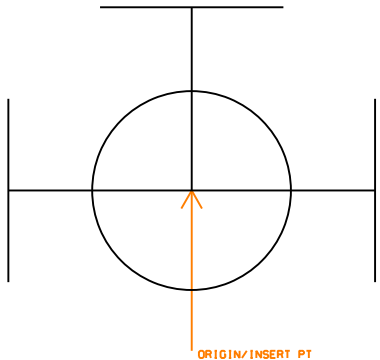
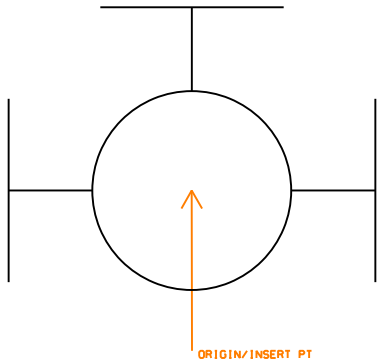
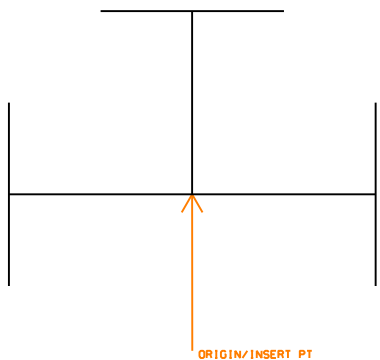
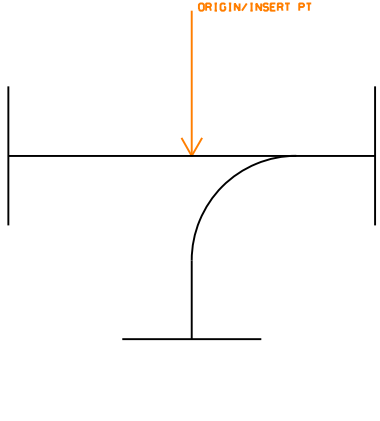
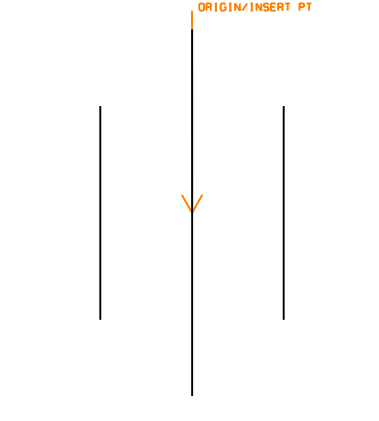
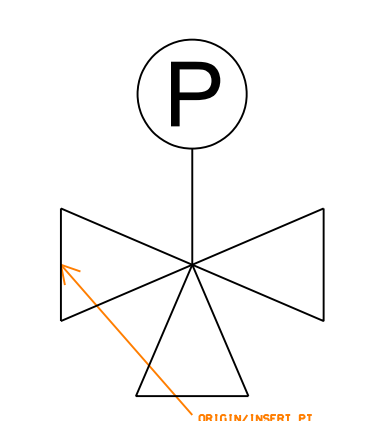
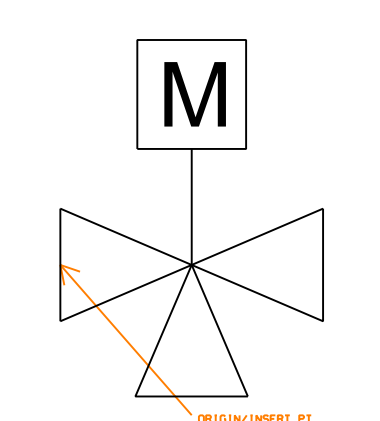
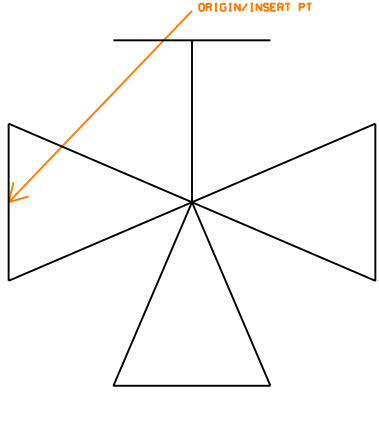
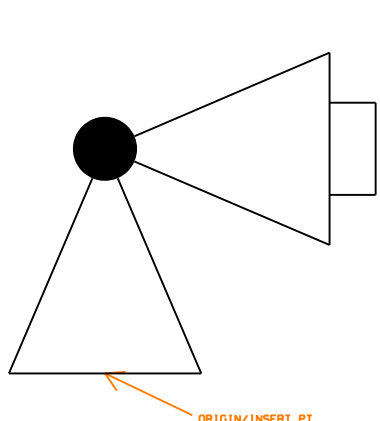
		
Plumbing: CAPSC CAP Element type: Symbol	Plumbing: DRNFUN OPEN DRAIN FUNNEL Element type: Symbol	Plumbing: EL45SC 45 DEGREE ELBOW Element type: Symbol
		
Plumbing: EL90SC 90 DEGREE ELBOW Element type: Symbol	Plumbing: ELBSC BASE ELBOW Element type: Symbol	Plumbing: ELDBSC DOUBLE BRANCH ELBOW Element type: Symbol
		
Plumbing: ELLRSC LONG RADIUS ELBOW Element type: Symbol	Plumbing: ELODSC ELBOW SIDE OUTLET DOWN Element type: Symbol	Plumbing: ELOUSC ELBOW SIDE OUTLET UP Element type: Symbol

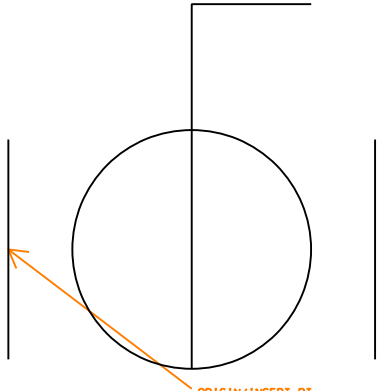
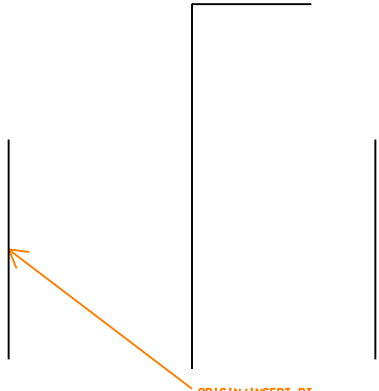
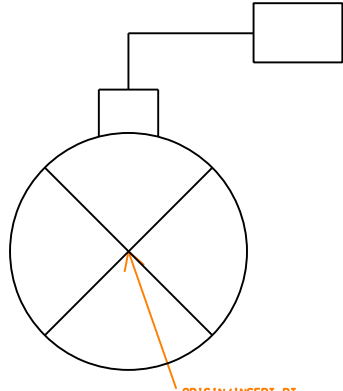
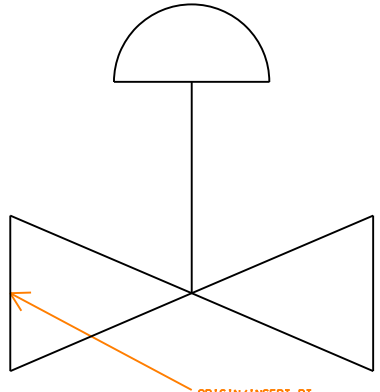
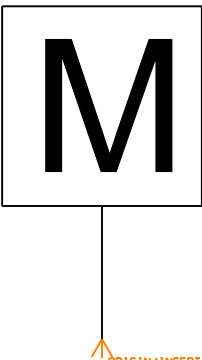
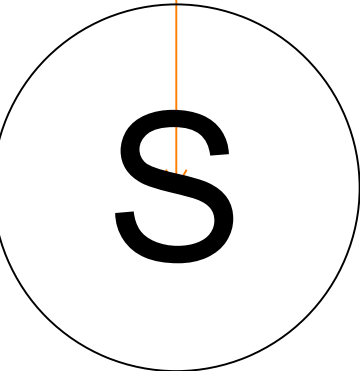
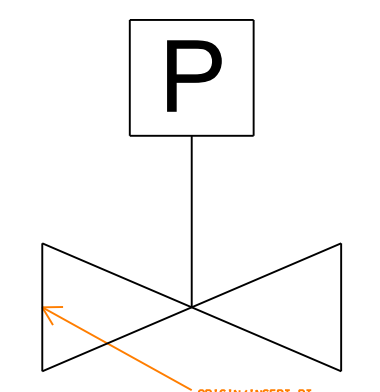
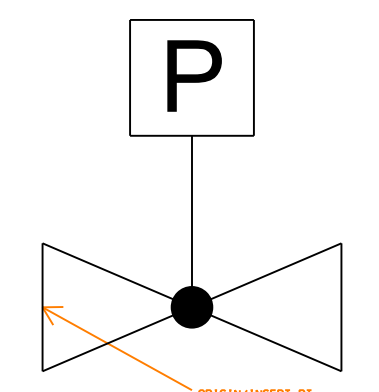
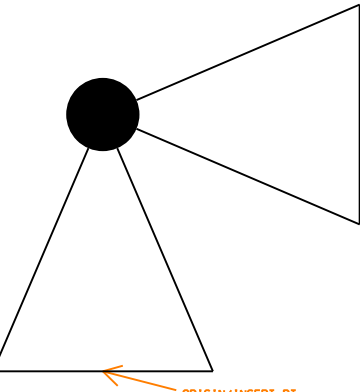
		
Plumbing: ELSTRT STREET ELBOW Element type: Symbol	Plumbing: ELTDSC TURNED DOWN ELBOW Element type: Symbol	Plumbing: ELTUSC TURNED UP ELBOW Element type: Symbol
		
Plumbing: FCO FLOOR CLEANOUT Element type: Symbol	Plumbing: FDCO FLOOR DRAIN WITH CLEANOUT Element type: Symbol	Plumbing: FDDT FLOOR DRAIN WITH DEEP TRAP Element type: Symbol
		
Plumbing: FDNT FLOOR DRAIN WITH NO TRAP Element type: Symbol	Plumbing: FDTP FLOOR DRAIN WITH TRAP PRIME Element type: Symbol	Plumbing: FDWT FLOOR DRAIN WITH TRAP Element type: Symbol

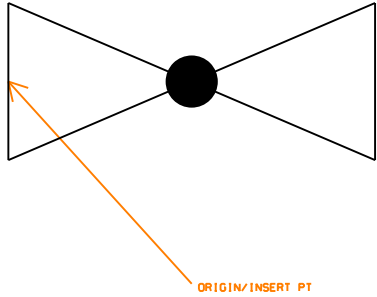
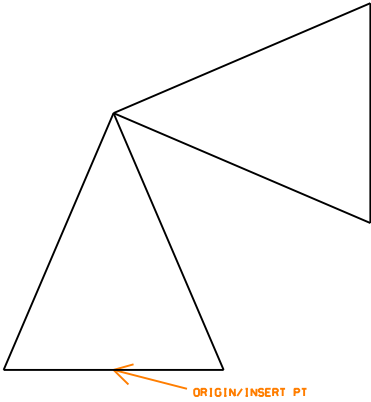
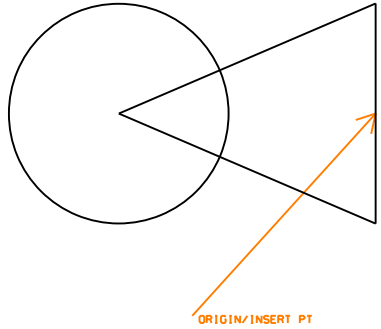
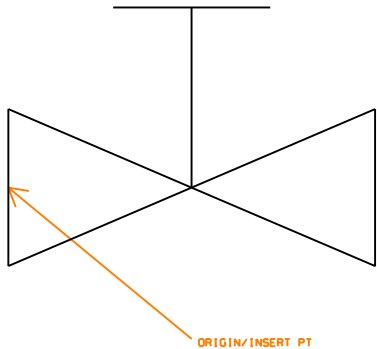
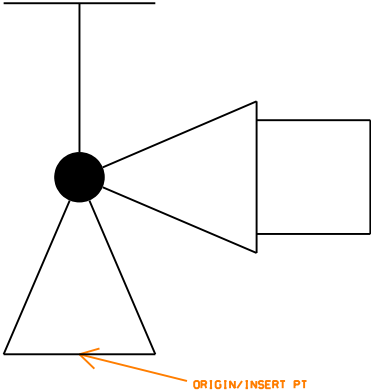
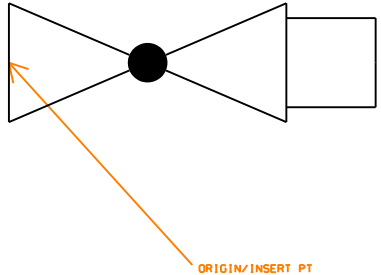
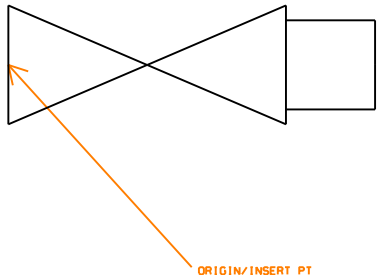
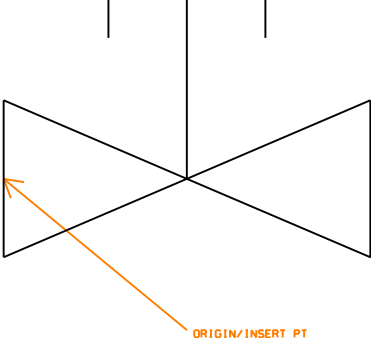
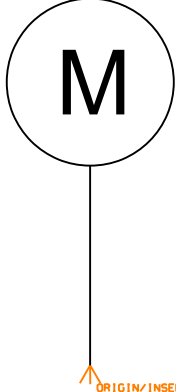
		
Plumbing: FLBLND BLIND FLANGE Element type: Symbol	Plumbing: FLOW3 FLOW ARROW Element type: Symbol	Plumbing: FLRPEN FLOOR PENETRATION ISO Element type: Symbol
		
Plumbing: GAUGE GAUGE Element type: Symbol	Plumbing: HANGRD HANGER ROD Element type: Symbol	Plumbing: HANGSP HANGER SPRING Element type: Symbol
		
Plumbing: ISOEWC ISOMETRIC EWC Element type: Symbol	Plumbing: ISOLAV ISOMETRIC LAVATORIES Element type: Symbol	Plumbing: ISOMOP ISO MOP SINK Element type: Symbol

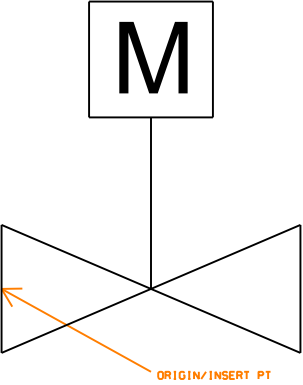
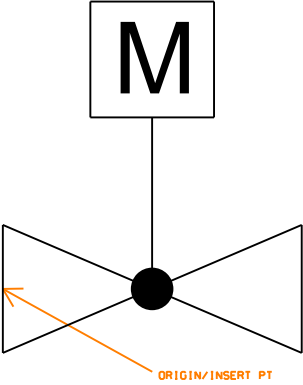
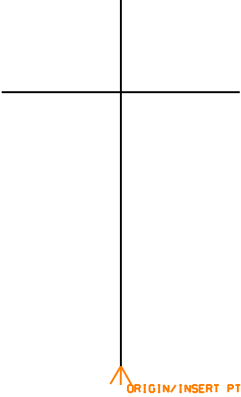
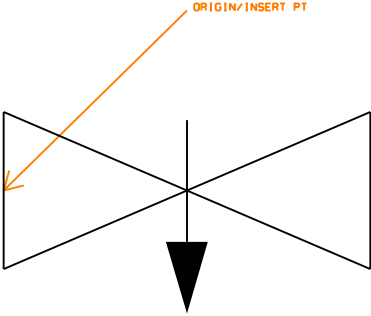
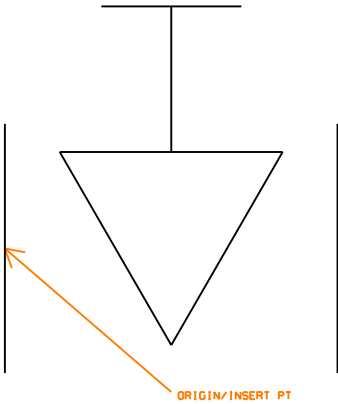
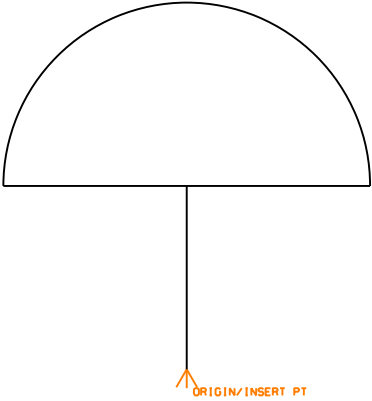
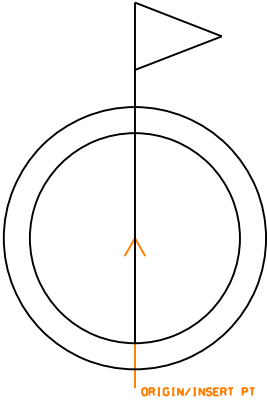
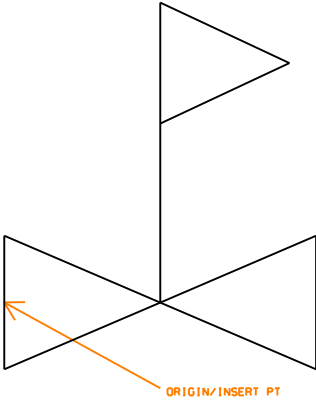
		
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Plumbing: LOOPL LEFT DIMENSION LOOP Element type: Symbol	Plumbing: LOOPR RIGHT DIMENSION LOOP Element type: Symbol	Plumbing: PLGBFL BULL PLUG FLANGED Element type: Symbol
		
Plumbing: PLGPSC PIPE PLUG Element type: Symbol	Plumbing: PRGGCO PRESSURE GAGE AND COCK Element type: Symbol	Plumbing: PUMP PUMP Element type: Symbol

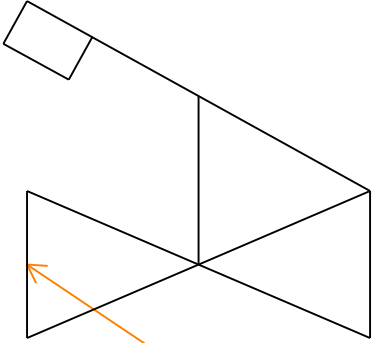
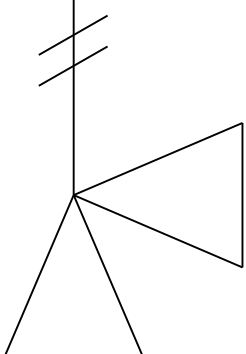
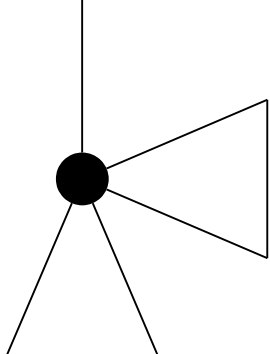
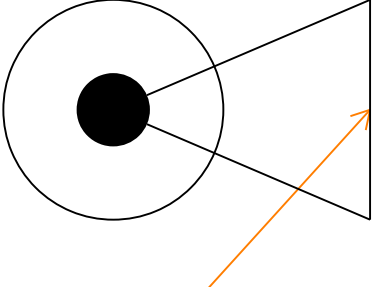
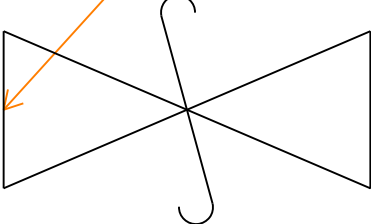
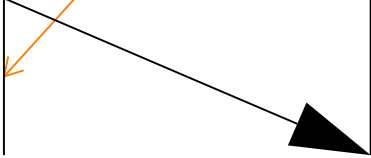
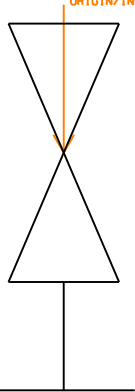
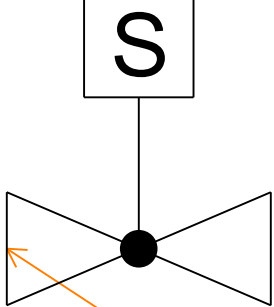
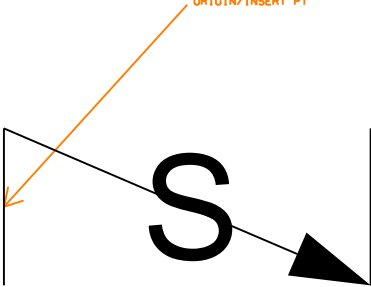
		
Plumbing: PUMPP PUMP SCHEMATIC Element type: Symbol	Plumbing: PUMPS INLINE PUMP Element type: Symbol	Plumbing: SLEEVE SLEEVE Element type: Symbol
		
Plumbing: STGLAS SIGHT GLASS Element type: Symbol	Plumbing: STRAIN STRAINER Element type: Symbol	Plumbing: STRBLO BLOW OFF STRAINER Element type: Symbol
		
Plumbing: TDSSC DOUBLE SWEEP TEE Element type: Symbol	Plumbing: THERM THERMOMETER Element type: Symbol	Plumbing: TRAPST STEAM TRAP Element type: Symbol

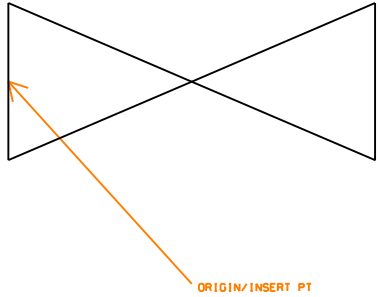
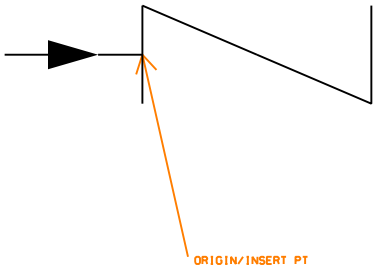
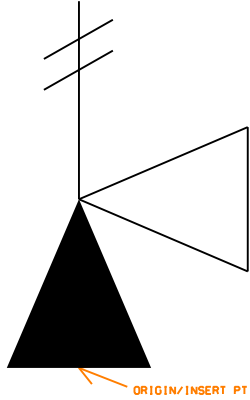
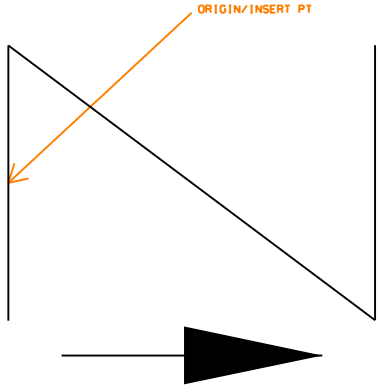
		
Plumbing: TSODSC TEE SIDE OUTLET DOWN Element type: Symbol	Plumbing: TSOUSC TEE SIDE OUTLET UP Element type: Symbol	Plumbing: TSSSC TEE Element type: Symbol
		
Plumbing: TSSWSC SINGLE SWEEP TEE Element type: Symbol	Plumbing: UNIOSC UNION Element type: Symbol	Plumbing: VA3WAM 3WAY AIRMOTOR CONTROLLER Element type: Symbol
		
Plumbing: VA3WEM 3WAY ELECMOTOR CONTRLE Element type: Symbol	Plumbing: VA3WM 3 WAY MANUAL VALVE Element type: Symbol	Plumbing: VAAHOS ANGLE HOSE VALVE Element type: Symbol

		
Plumbing: VABALL BALL VALVE PLAN Element type: Symbol	Plumbing: VABFLY BUTTERFLY VALVE Element type: Symbol	Plumbing: VACWR CONDENS WATER REGULAT VALVE Element type: Symbol
		
Plumbing: VADISC DIAPHRAGM VALVE Element type: Symbol	Plumbing: VAEMTR PNEUMATIC MOTOR Element type: Symbol	Plumbing: VAESOL SOLENOID VALVE ACTUATOR Element type: Symbol
		
Plumbing: VAGAMC PNEUMATIC CTRLD GATE VALVE Element type: Symbol	Plumbing: VAGLAM PNEUMATIC CTRLD GLOBE VLV Element type: Symbol	Plumbing: VAGLE ANGLE GLOBE VALVE Element type: Symbol

		
Plumbing: VAGLSE GLOBE VALVE Element type: Symbol	Plumbing: VAGSE ANGLE GATE VALVE Element type: Symbol	Plumbing: VAGSP ANGLE GATE VALVE PLAN Element type: Symbol
		
Plumbing: VAGTSE GATE VALVE Element type: Symbol	Plumbing: VAHASC GATE VALVE PLAN Element type: Symbol	Plumbing: VAHGLS HOSE GLOBE VALVE Element type: Symbol
		
Plumbing: VAHGSC HOSE GATE VALVE Element type: Symbol	Plumbing: VALSSC LOCK SHIELD VALVE Element type: Symbol	Plumbing: VAMAGS MAGNETIC STOP VALVE Element type: Symbol

		
Plumbing: VAMNNS VLV ACTUA MAN NONRISINGSTEM Element type: Symbol	Plumbing: VAMOGS MOTOR OPERATD GATE VALVE Element type: Symbol	Plumbing: VAMOLS MOTOR OPERATD GLOBE VALVE Element type: Symbol
		
Plumbing: VAMOSY VLV ACTTOR MAN OUTSTEM Element type: Symbol	Plumbing: VANEED NEEDLE VALVE Element type: Symbol	Plumbing: VAPLUG PLUG VALVE Element type: Symbol
		
Plumbing: VAPMTD VALVE ACTUATOR PNEUMOT Element type: Symbol	Plumbing: VAPRED PRESSURE REDUCING VALVE Element type: Symbol	Plumbing: VAPRRD PRESSURE REDUCING VALVE Element type: Symbol

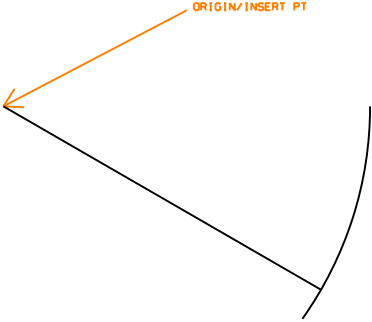
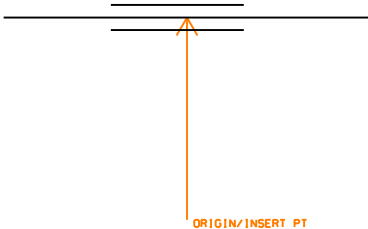
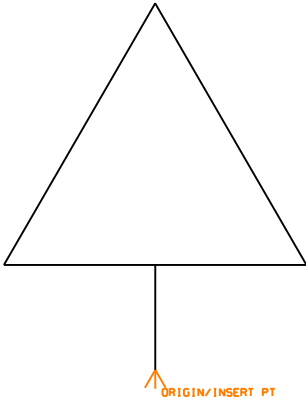
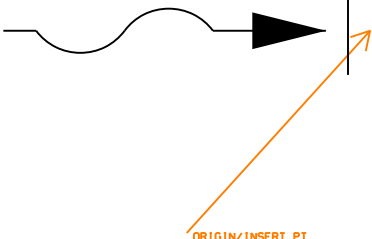
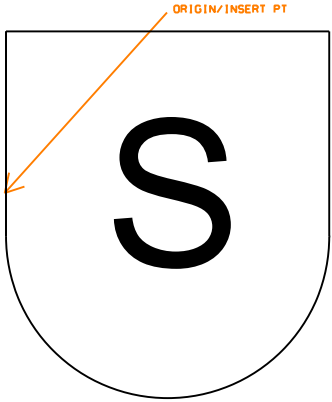
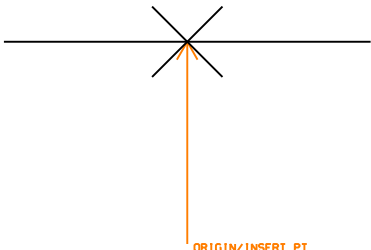
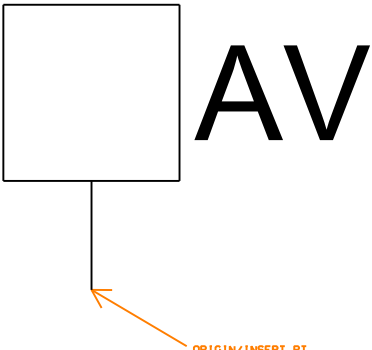
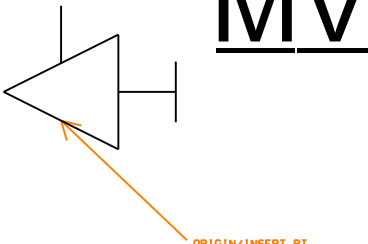
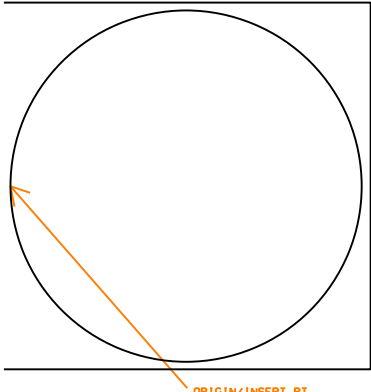
		
Plumbing: VAQOSC QUICK OPENING VALVE Element type: Symbol	Plumbing: VARELF RELIEF OR SAFETY VALVE Element type: Symbol	Plumbing: VASCE ANGLE GLOBE VALVE Element type: Symbol
		
Plumbing: VASCP ANGLE GLOBE VALVE PLAN Element type: Symbol	Plumbing: VASFSC SAFETY VALVE Element type: Symbol	Plumbing: VASGCH SWING GATE CHECK VALVE Element type: Symbol
		
Plumbing: VASNAP SNAP ACTION VALVE Element type: Symbol	Plumbing: VASOLN SOLENOID VALVE Element type: Symbol	Plumbing: VASPCH SPRING CHECK VALVE Element type: Symbol

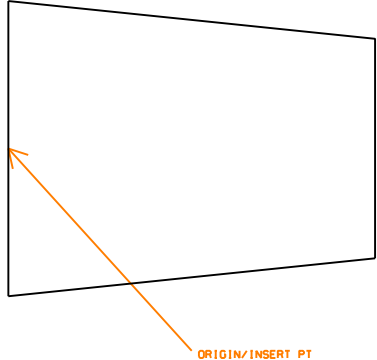
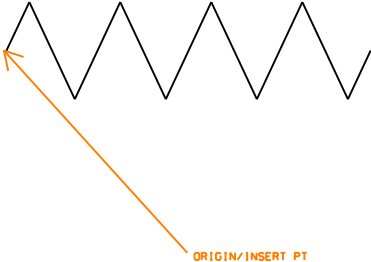
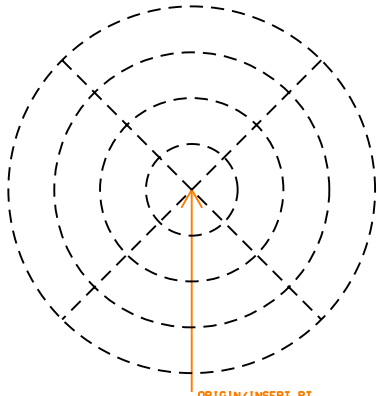
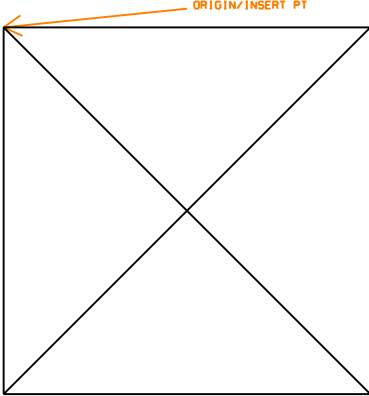
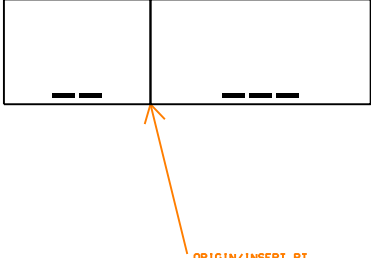
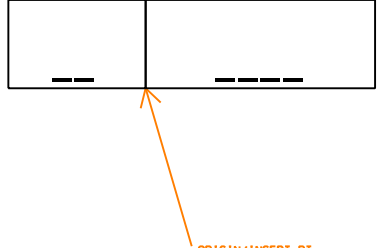
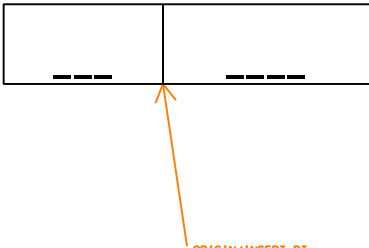
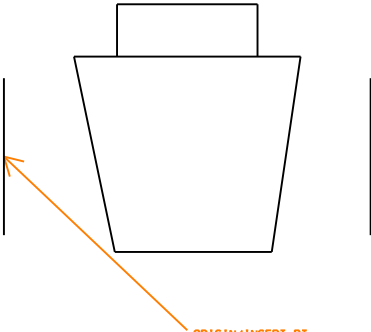
		
Plumbing: VASTSC GATE VALVE Element type: Symbol	Plumbing: VASWSC STRAIGHT WAY CHECK VALVE Element type: Symbol	Plumbing: VATPR TEMP PRESSURE RELIEF VALVE Element type: Symbol
		
Plumbing: VLVCHK CHECK VALVE Element type: Symbol		

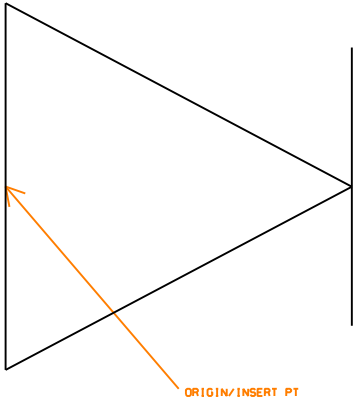
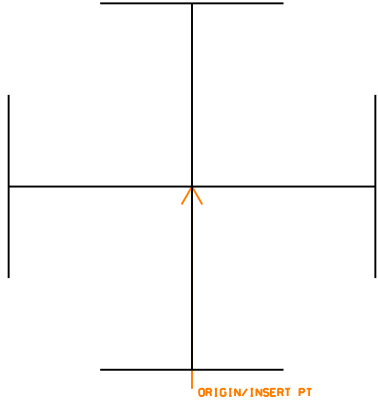
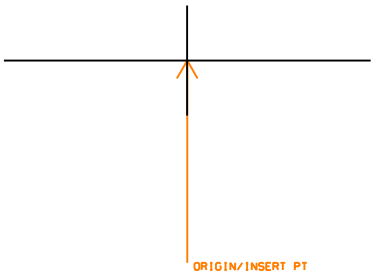
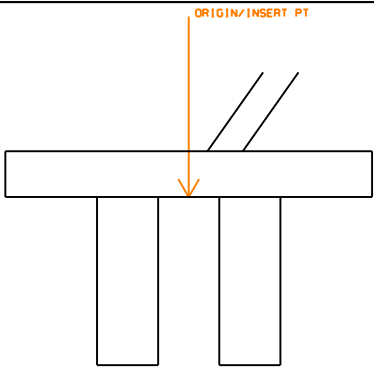
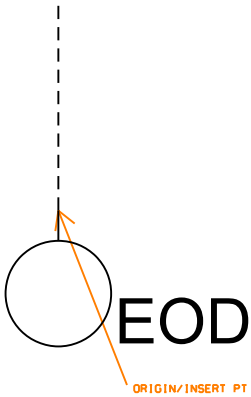
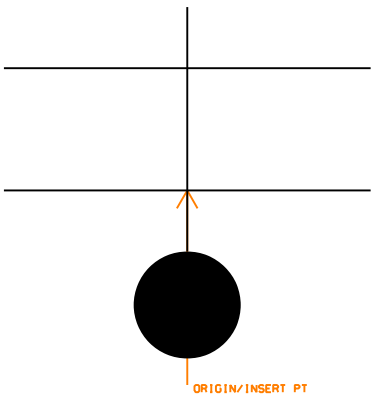
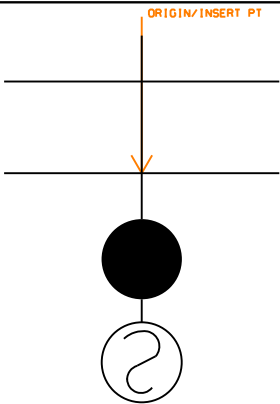
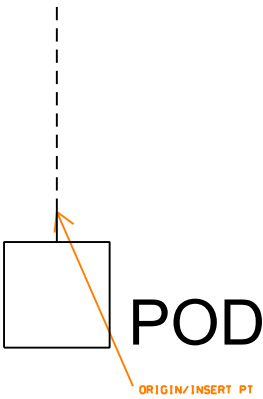
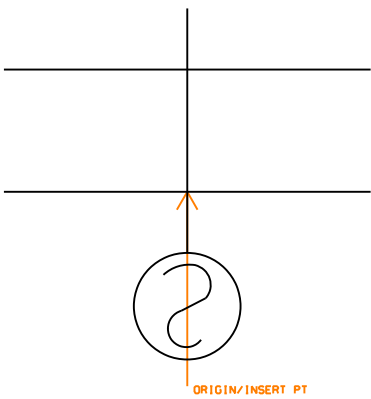
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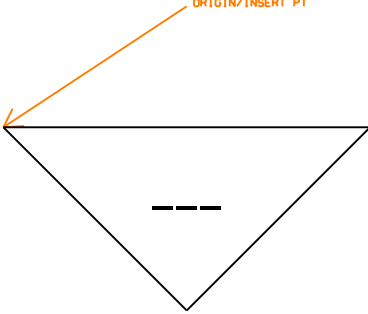
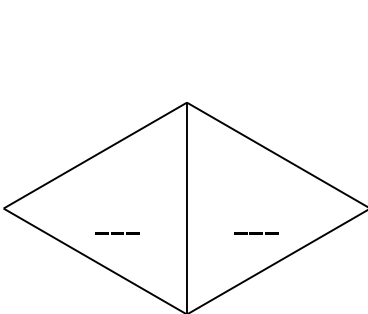
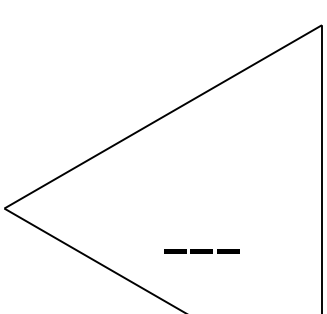
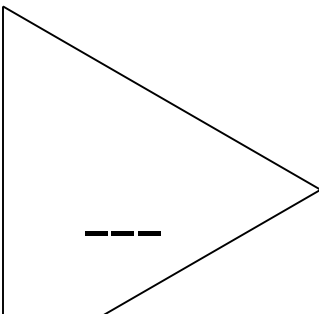
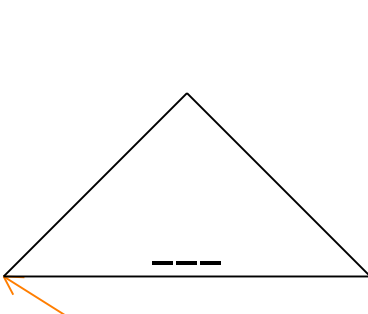
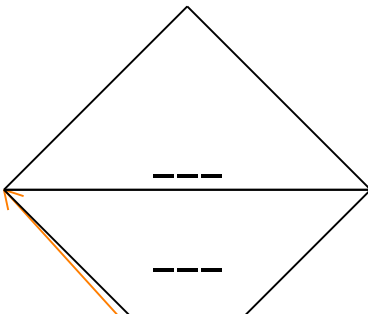
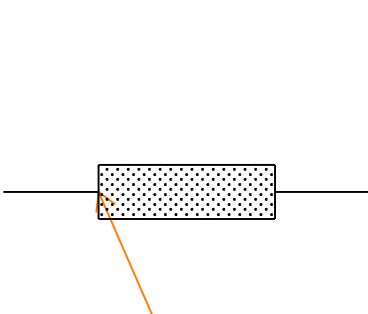
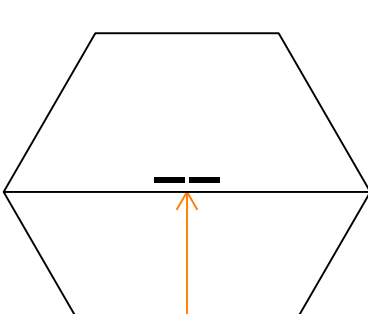
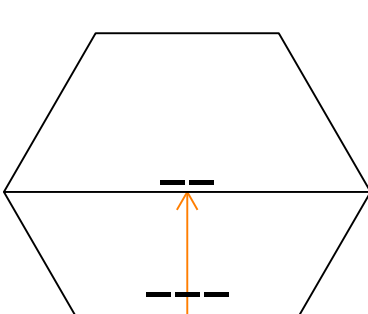
14 Mechanical Symbols Library

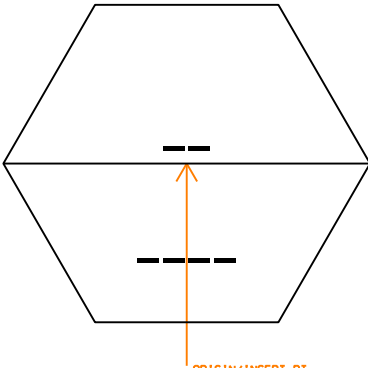
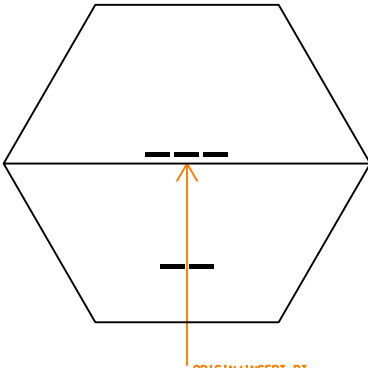
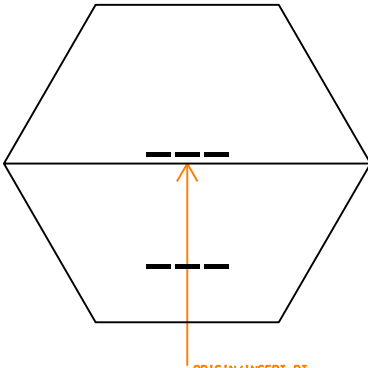
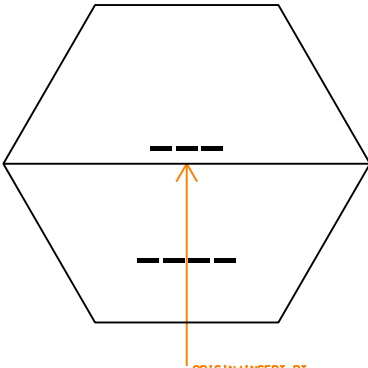
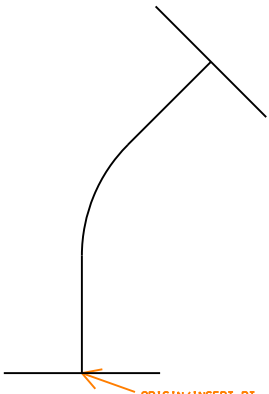
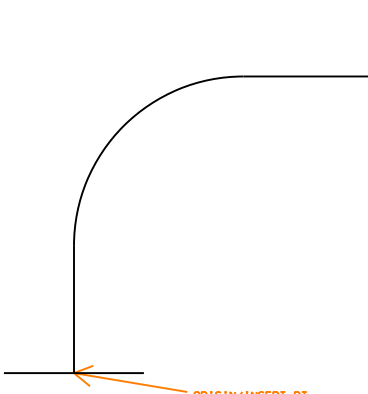
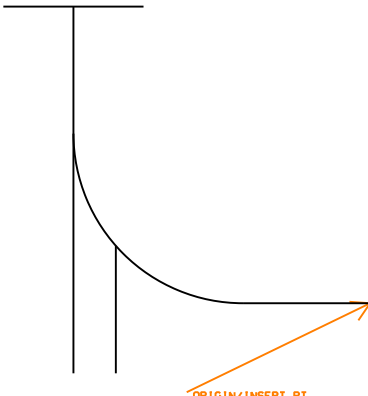
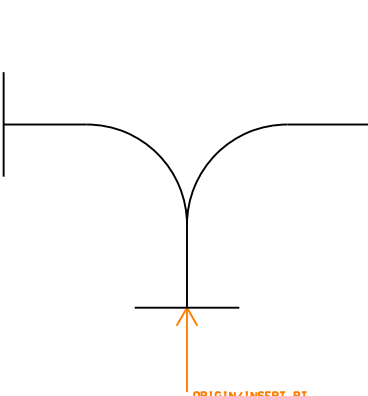
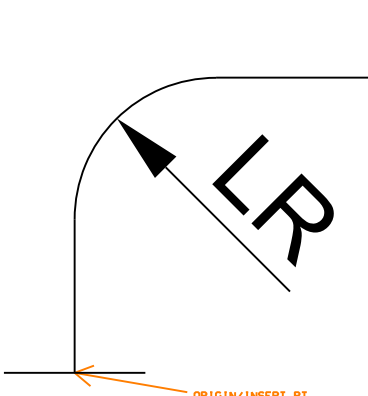
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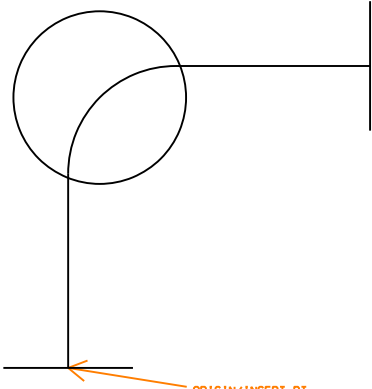
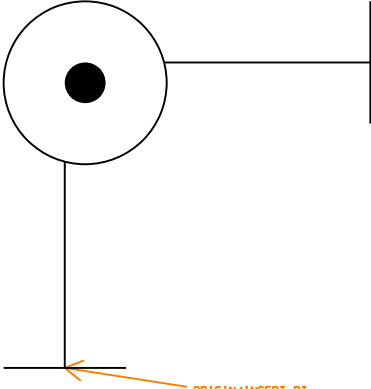
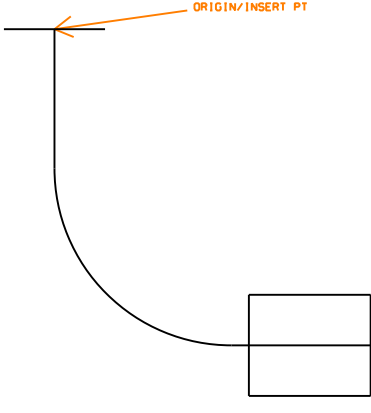
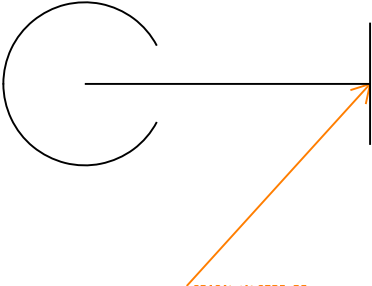
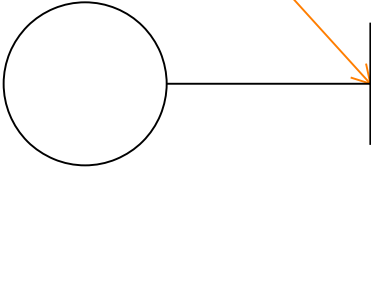
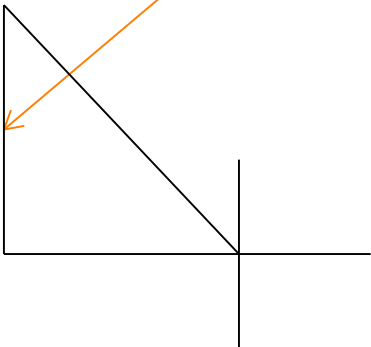
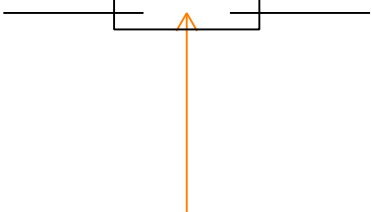
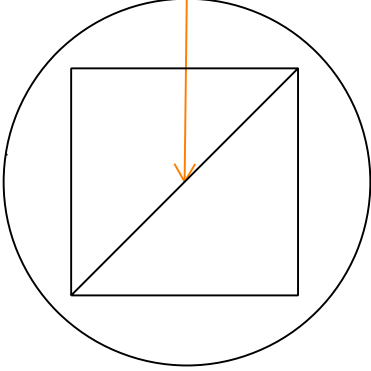
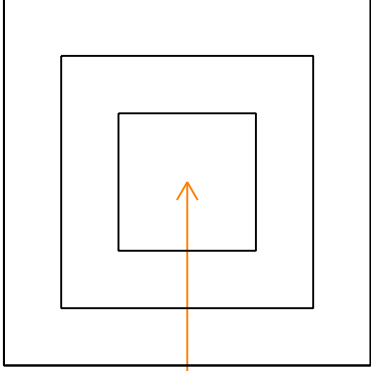
		
Mechanical: ACCDOR DUCT ACCESS DOOR Element type: Symbol	Mechanical: AGUIDE ALIGNMENT GUIDE Element type: Symbol	Mechanical: AIRELM AIR ELIMINATOR Element type: Symbol
		
Mechanical: AIRIN AIR IN Element type: Symbol	Mechanical: AIRSEP AIR SEPARATOR Element type: Symbol	Mechanical: ANCHRI ANCHOR Element type: Symbol
		
Mechanical: AVENTA AUTOMATIC AIR VENT Element type: Symbol	Mechanical: AVENTM MANUAL AIR VENT Element type: Symbol	Mechanical: BALLJT BALL JOINT Element type: Symbol

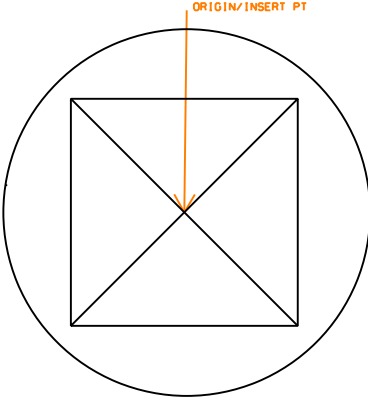
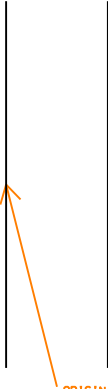
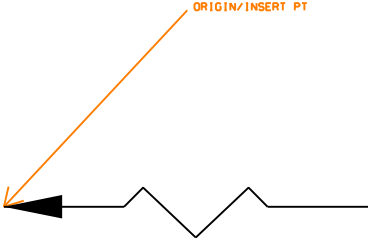
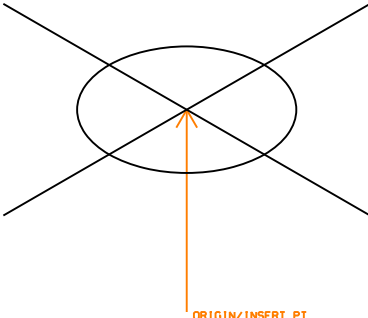
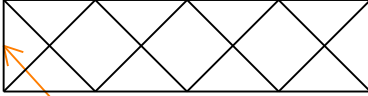
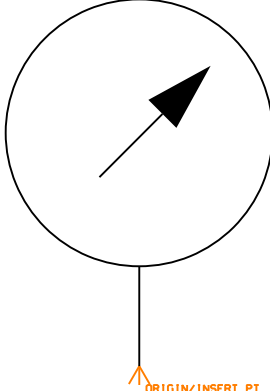
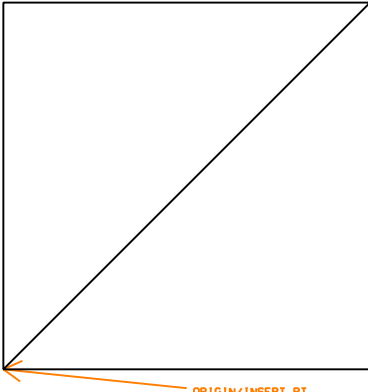
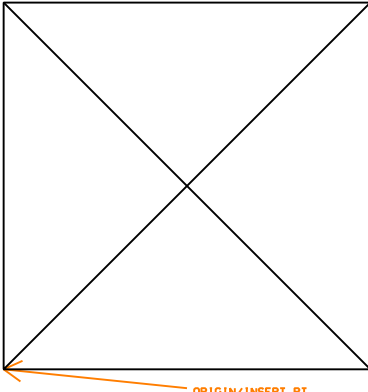
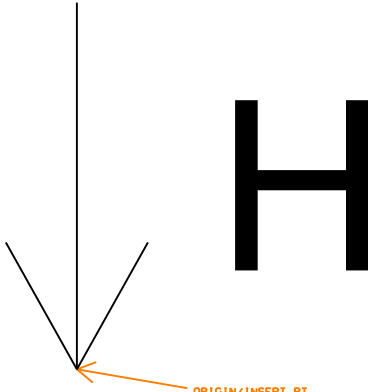
		
Mechanical: BUSHSC BUSHING Element type: Symbol	Mechanical: CAPSC CAP Element type: Symbol	Mechanical: CAPTUB CAPILLARY TUBE Element type: Symbol
		
Mechanical: CDRND ROUND CEILING DIFFUSER Element type: Symbol	Mechanical: CDSQR SQUARE CEILING DIFFUSER Element type: Symbol	Mechanical: CFM2X3 AIRFLOW CFM Element type: Symbol
		
Mechanical: CFM2X4 AIRFLOW CFM Element type: Symbol	Mechanical: CFM3X4 AIRFLOW CFM Element type: Symbol	Mechanical: COCKSC COCK Element type: Symbol

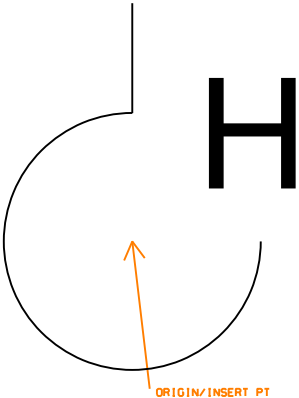
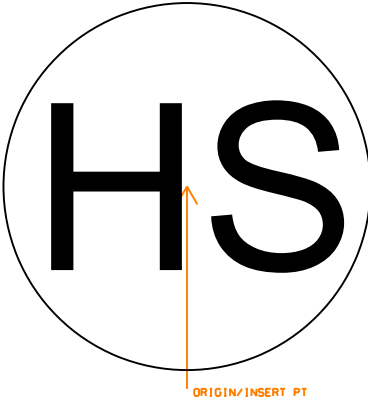
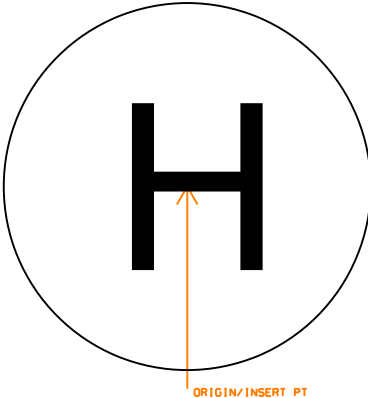
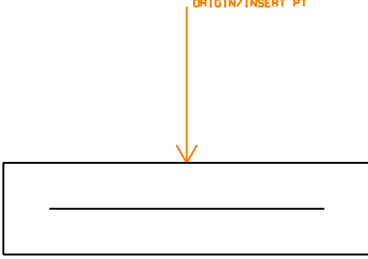
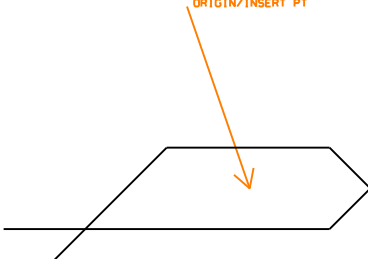
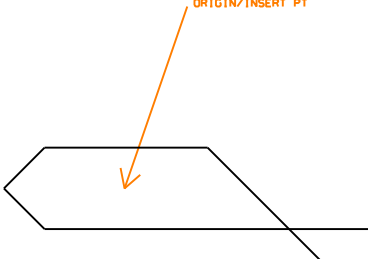
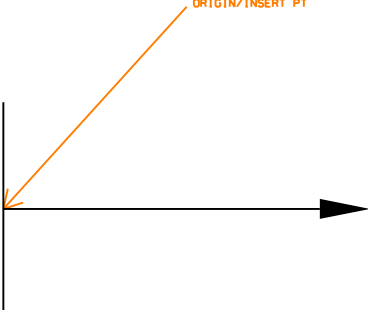
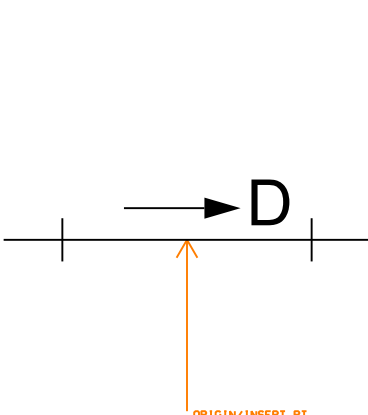
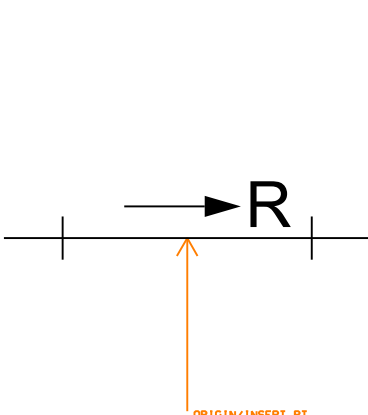
		
Mechanical: CREDSC REDUCER CONCENTRIC Element type: Symbol	Mechanical: CRSRSC CROSS Element type: Symbol	Mechanical: CUPJNT COUPLING JOINT Element type: Symbol
		
Mechanical: DCTHTR ELECTRIC DUCT HEATER Element type: Symbol	Mechanical: DMPEOC ELECT OPERATED DAMPER Element type: Symbol	Mechanical: DMPFIR FIRE DAMPER Element type: Symbol
		
Mechanical: DMPFS FIRE SMOKE DAMPER Element type: Symbol	Mechanical: DMPPOD PNEUMATIC DAMPER Element type: Symbol	Mechanical: DMPSMK SMOKE DAMPER Element type: Symbol

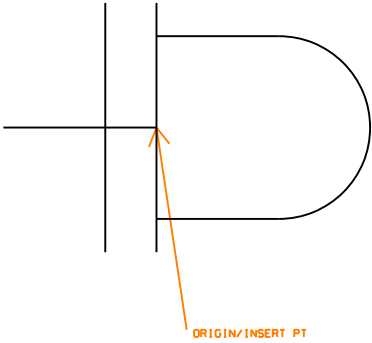
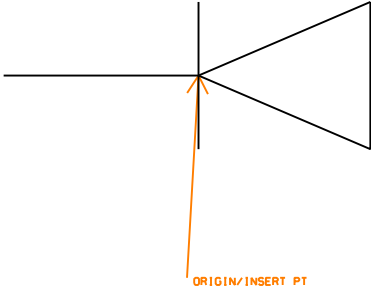
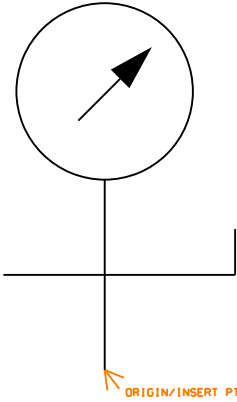
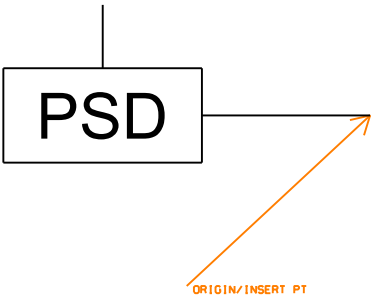
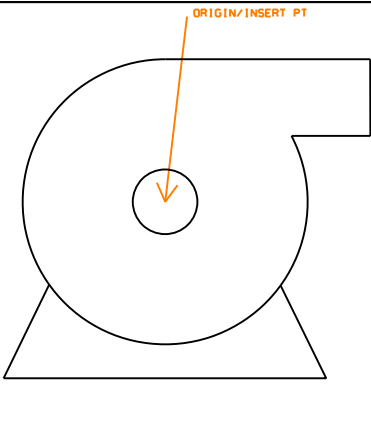
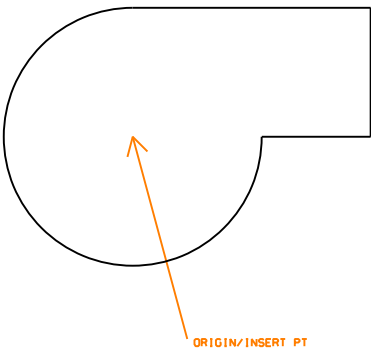
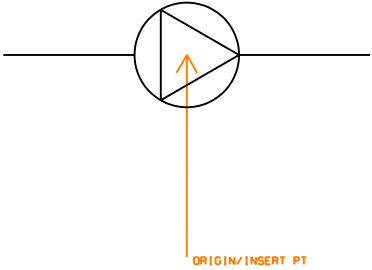
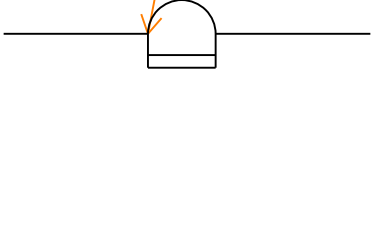
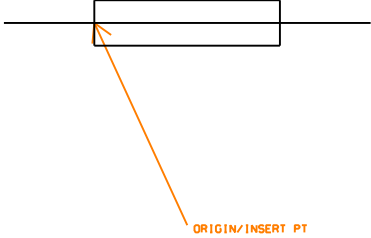
		
Mechanical: DPRSD DUCT PRESSURE CLASS DOWN Element type: Symbol	Mechanical: DPRSH DUCT PRESSURE HORIZONTAL Element type: Symbol	Mechanical: DPRSL DUCT PRESSURE LEFT Element type: Symbol
		
Mechanical: DPRSR DUCT PRESSURE RIGHT Element type: Symbol	Mechanical: DPRSU DUCT PRESSURE CLASS UP Element type: Symbol	Mechanical: DPRSV DUCT PRESSURE CLASS VERT Element type: Symbol
		
Mechanical: DRIER DRIER Element type: Symbol	Mechanical: EEQ2X2 ELEC. EQUIP 2X2 MARK Element type: Symbol	Mechanical: EEQ2X3 ELEC. EQUIP 2X3 MARK Element type: Symbol

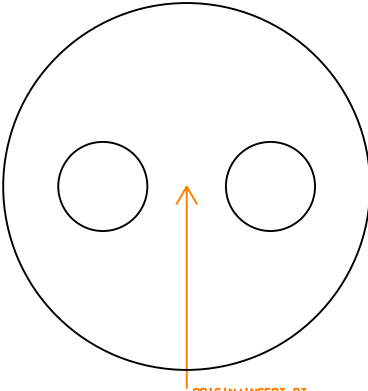
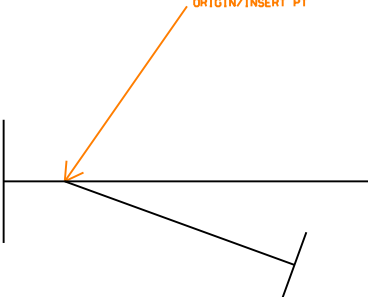
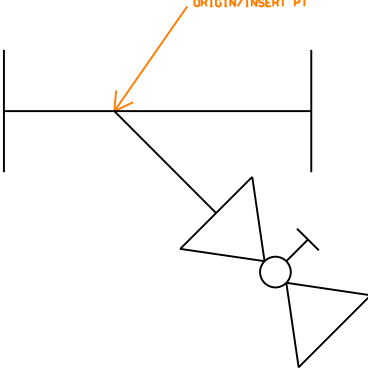
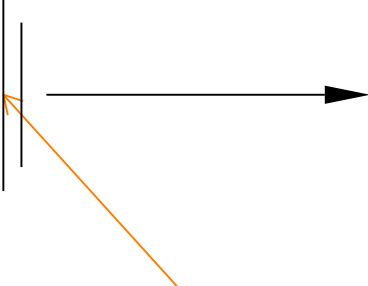
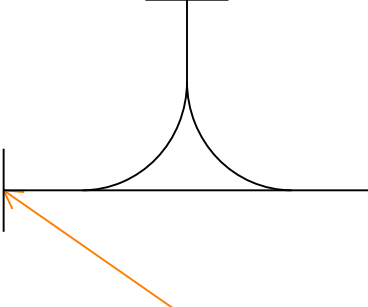
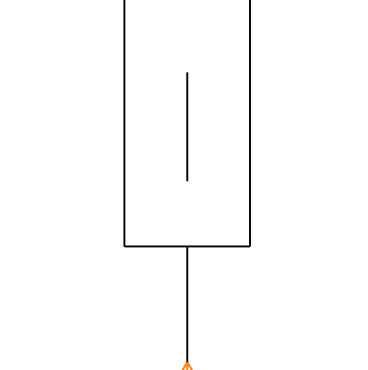
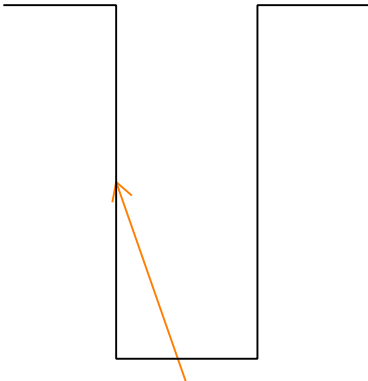
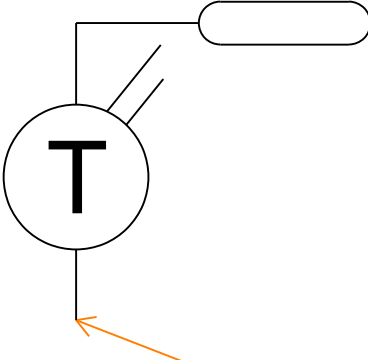
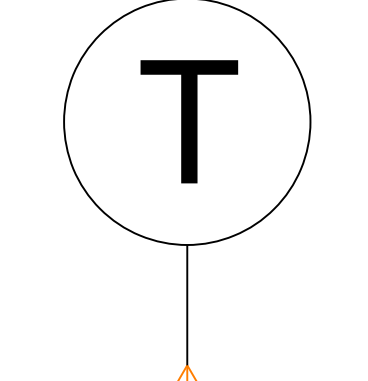
		
Mechanical: EEQ2X4 ELEC EQUIP 2X4 MARK Element type: Symbol	Mechanical: EEQ3X2 ELEC EQUIP 3X2 MARK Element type: Symbol	Mechanical: EEQ3X3 ELEC EQUIP 3X3 MARK Element type: Symbol
		
Mechanical: EEQ3X4 ELEC EQUIP 3X4 MARK Element type: Symbol	Mechanical: EL45SC 45 DEGREE ELBOW Element type: Symbol	Mechanical: EL90SC 90 DEGREE ELBOW Element type: Symbol
		
Mechanical: ELBSC BASE ELBOW Element type: Symbol	Mechanical: ELDBSC DOUBLE BRANCH ELBOW Element type: Symbol	Mechanical: ELLRSC LONG RADIUS ELBOW Element type: Symbol

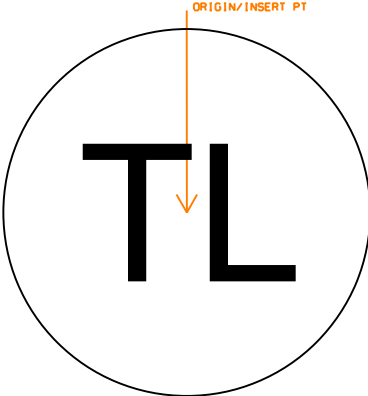
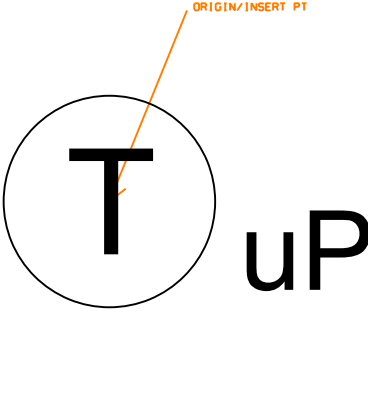
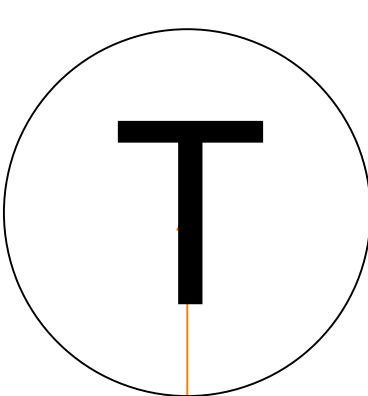
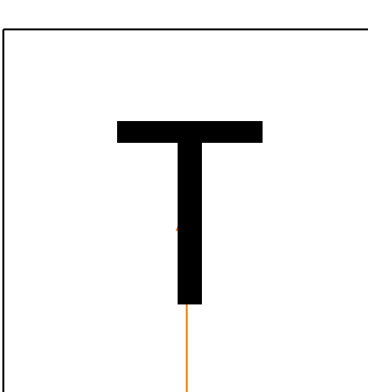
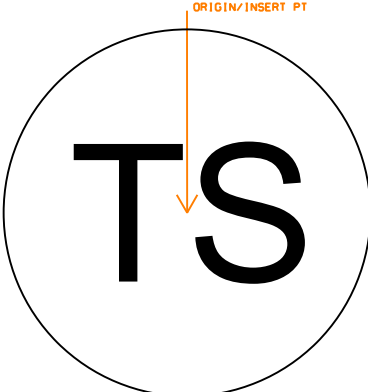
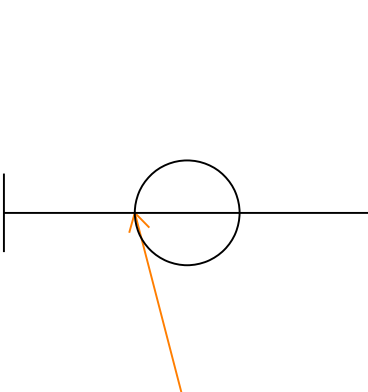
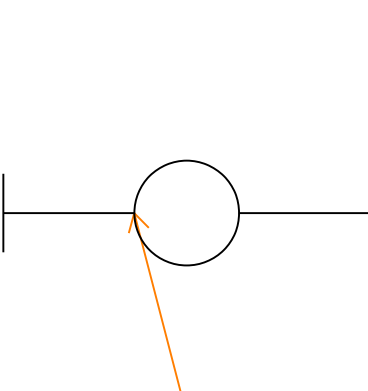
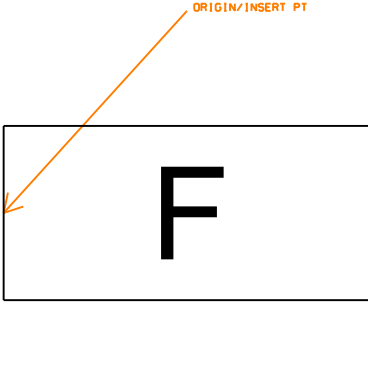
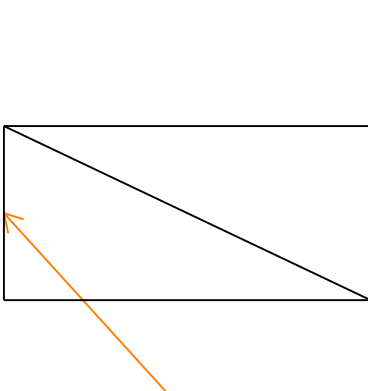
		
Mechanical: ELODSC ELBOW SIDE OUTLET DOWN Element type: Symbol	Mechanical: ELOUSC ELBOW SIDE OUTLET UP Element type: Symbol	Mechanical: ELSTRT STREET ELBOW Element type: Symbol
		
Mechanical: ELTDSC TURNED DOWN ELBOW Element type: Symbol	Mechanical: ELTUSC TURNED UP ELBOW Element type: Symbol	Mechanical: EREDSC ECCENTRIC REDUCER Element type: Symbol
		
Mechanical: EXPJNT EXPANSION JOINT Element type: Symbol	Mechanical: FANERV EXHAUST ROOF VENT FAN Element type: Symbol	Mechanical: FANLRV LOUVERED ROOF VENT FAN Element type: Symbol

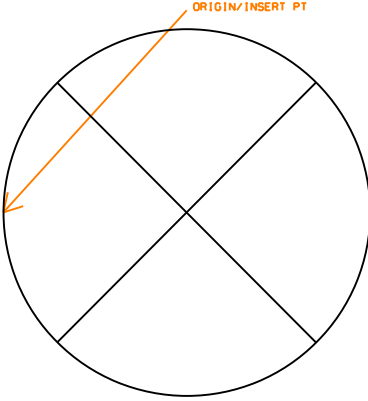
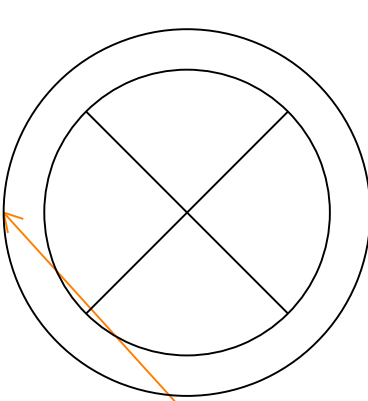
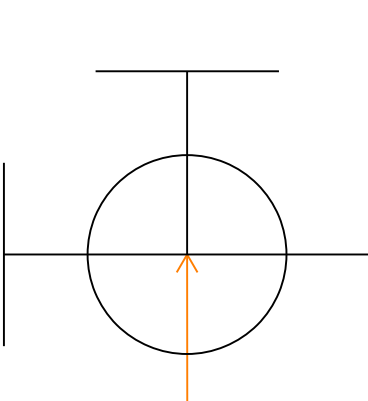
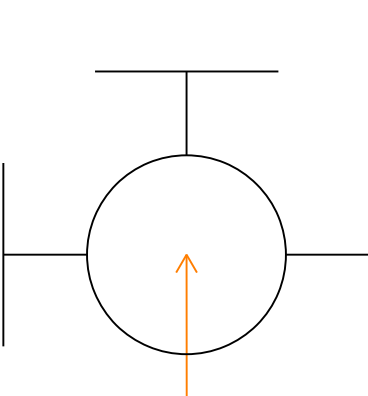
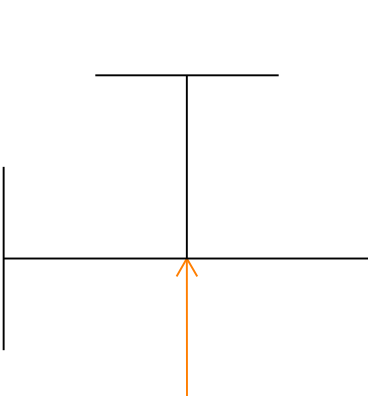
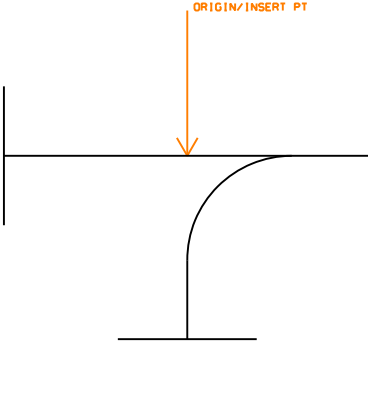
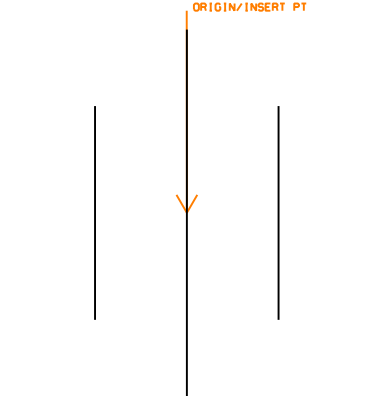
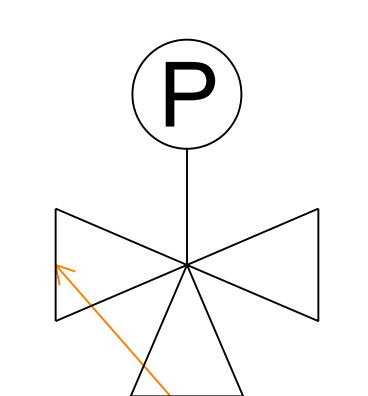
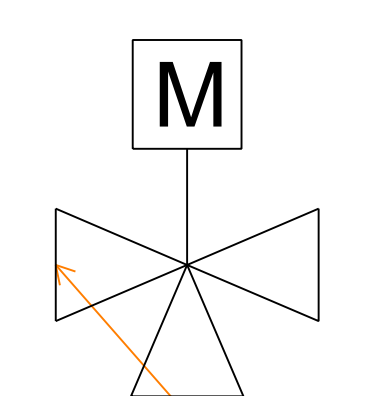
		
Mechanical: FANSRV INTAKE ROOF VENT FAN Element type: Symbol	Mechanical: FLBLND BLIND FLANGE Element type: Symbol	Mechanical: FLOW2 FLOW ARROW Element type: Symbol
		
Mechanical: FLRPEN FLOOR PENETRATION ISO Element type: Symbol	Mechanical: FLXCON FLEXIBLE CONNECTOR Element type: Symbol	Mechanical: GAUGE GAUGE Element type: Symbol
		
Mechanical: GRILEX EXHAUST GRILLE Element type: Symbol	Mechanical: GRILSU SUPPLY GRILLE Element type: Symbol	Mechanical: HANGRD HANGER ROD Element type: Symbol

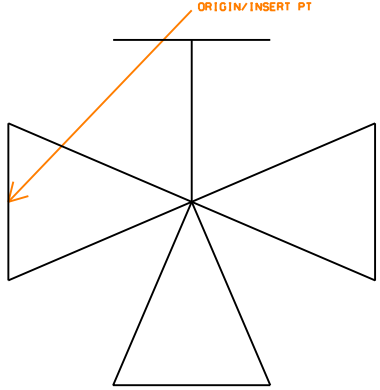
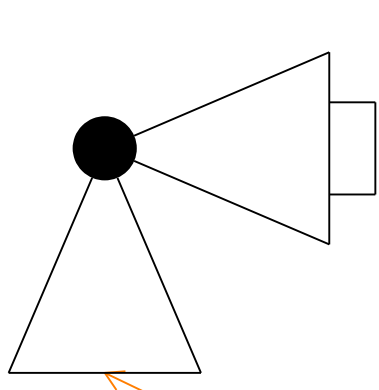
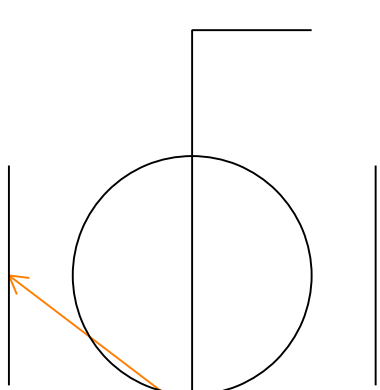
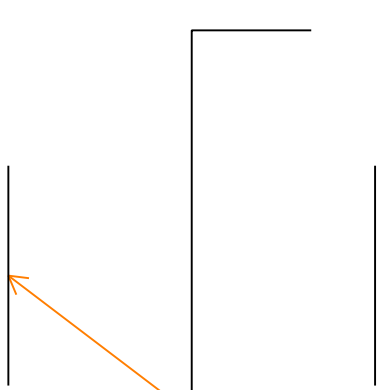
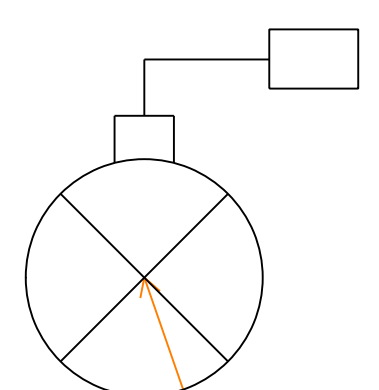
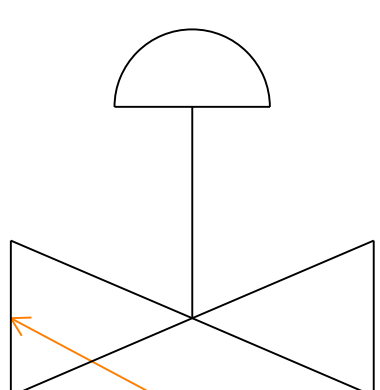
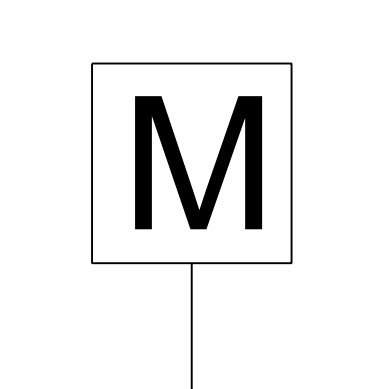
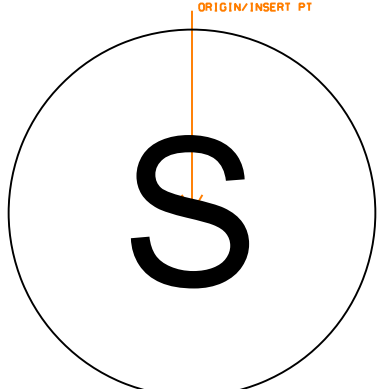
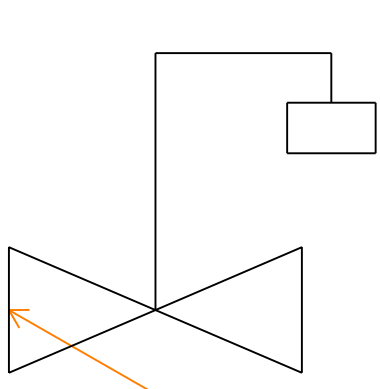
		
Mechanical: HANGSP HANGER SPRING Element type: Symbol	Mechanical: HSENS HUMIDITY SENSOR Element type: Symbol	Mechanical: HSTAT HUMIDISTAT Element type: Symbol
		
Mechanical: LNDIFF LINEAR DIFFUSER Element type: Symbol	Mechanical: LOOPL LEFT DIMENSION LOOP Element type: Symbol	Mechanical: LOOPR RIGHT DIMENSION LOOP Element type: Symbol
		
Mechanical: LOUOPN DOOR OR WALL LOUVER Element type: Symbol	Mechanical: PIDROP PITCH OR PIPE DROP Element type: Symbol	Mechanical: PIRISE PITCH OR PIPE RISE Element type: Symbol

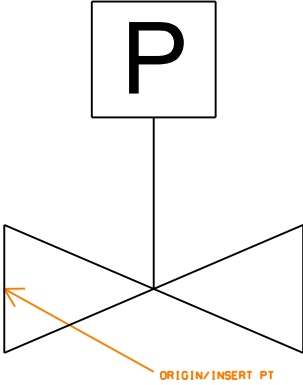
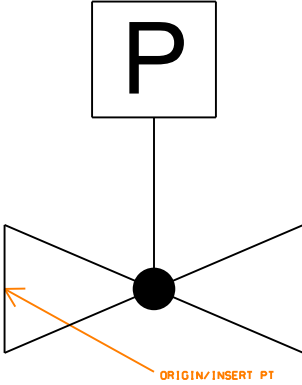
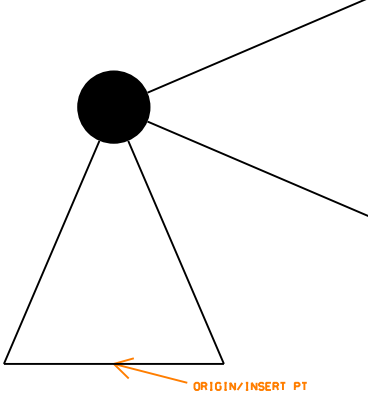
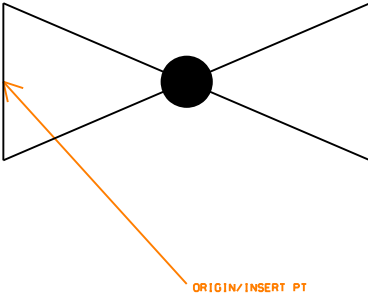
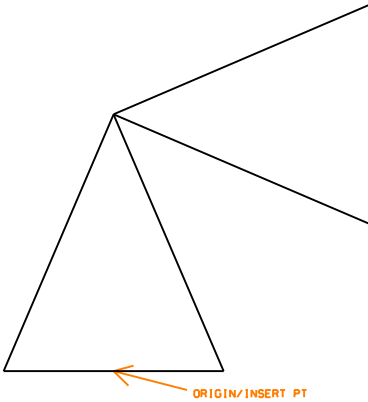
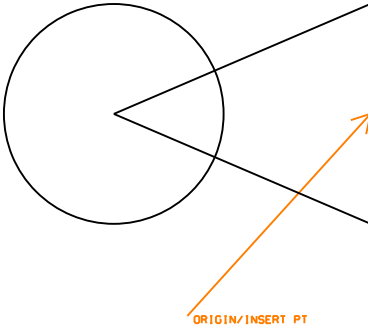
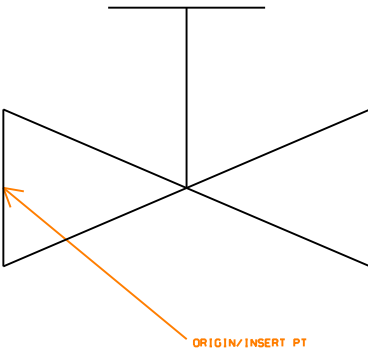
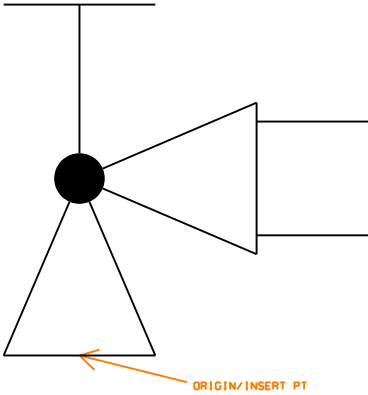
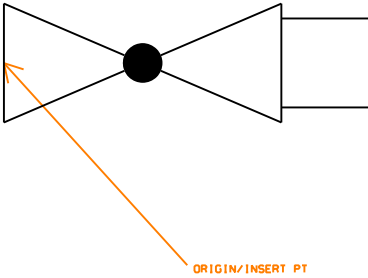
		
Mechanical: PLGBFL BULL PLUG FLANGED Element type: Symbol	Mechanical: PLGPSC PIPE PLUG Element type: Symbol	Mechanical: PRGGCO PRESSURE GAGE AND COCK Element type: Symbol
		
Mechanical: PSDIFF PUMP SUCTION DIFFUSER Element type: Symbol	Mechanical: PUMP PUMP Element type: Symbol	Mechanical: PUMPP PUMP SCHEMATIC Element type: Symbol
		
Mechanical: PUMPS INLINE PUMP Element type: Symbol	Mechanical: SCALET SCALE TRAP Element type: Symbol	Mechanical: SLEEVE SLEEVE Element type: Symbol

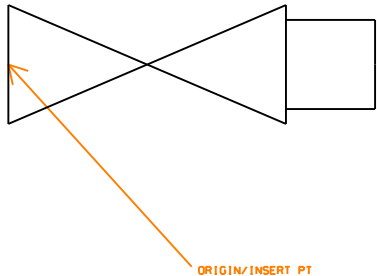
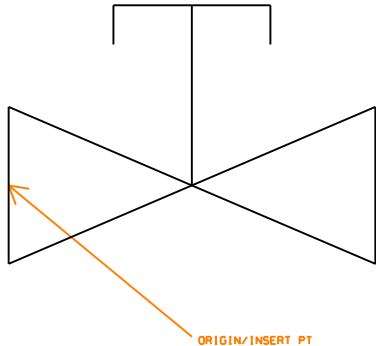
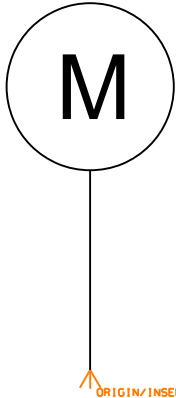
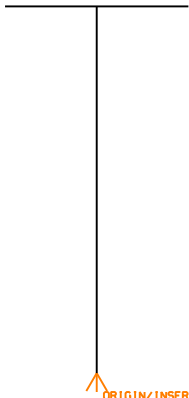
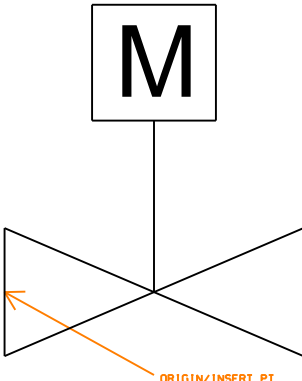
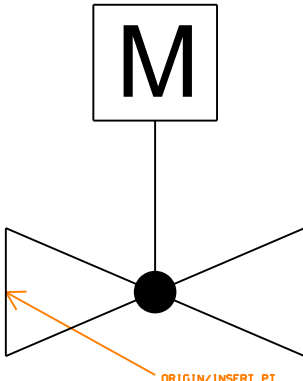
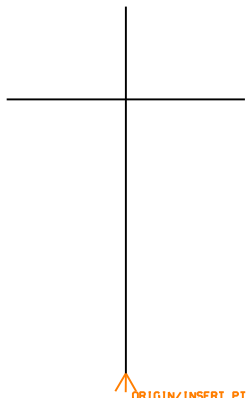
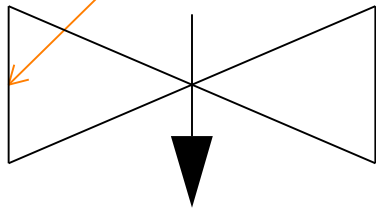
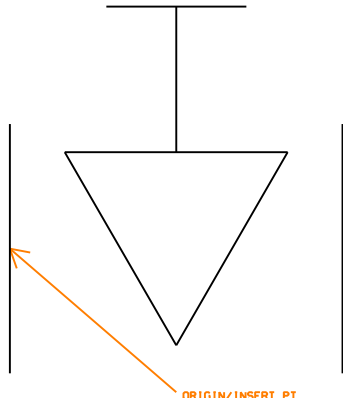
		
Mechanical: STGLAS SIGHT GLASS Element type: Symbol	Mechanical: STRAIN STRAINER Element type: Symbol	Mechanical: STRBLO BLOW OFF STRAINER Element type: Symbol
		
Mechanical: SUPOINT SUPPLY OUTLET WALL SUPPLY Element type: Symbol	Mechanical: TDSSC DOUBLE SWEEP TEE Element type: Symbol	Mechanical: THERM THERMOMETER Element type: Symbol
		
Mechanical: THERMW THERMOMETER WELL Element type: Symbol	Mechanical: THHRB THERMOSTAT REMOTE BULB Element type: Symbol	Mechanical: THHSC THERMOSTAT SELFCONTAINED Element type: Symbol

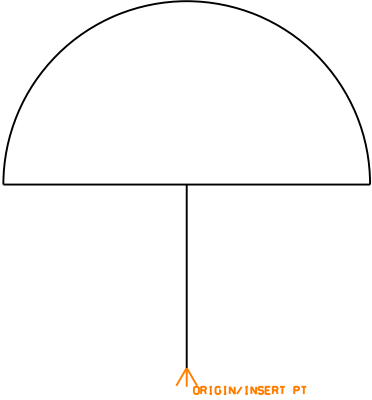
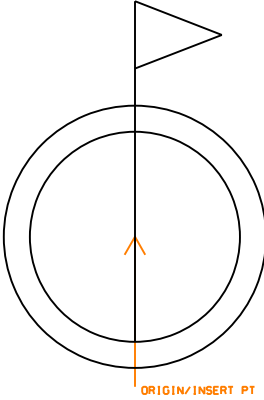
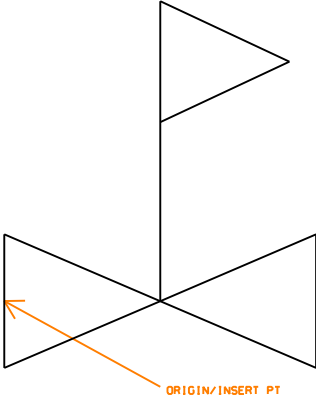
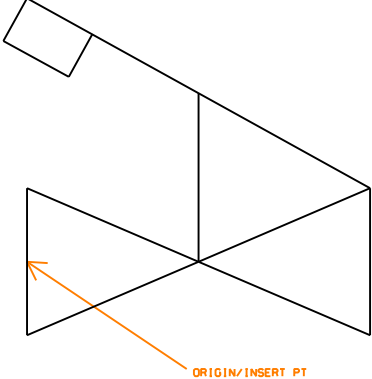
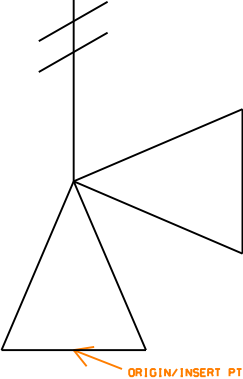
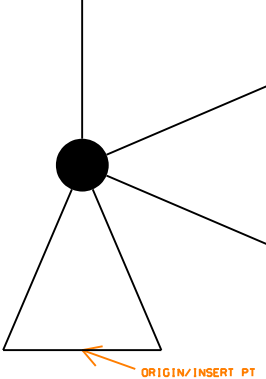
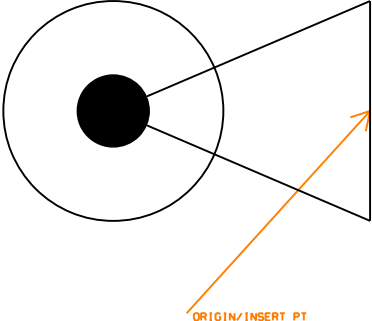
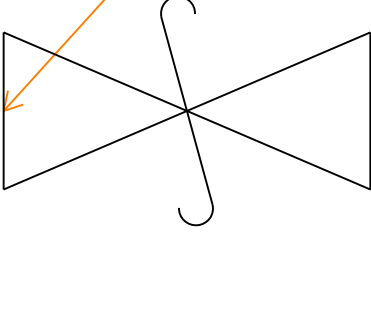
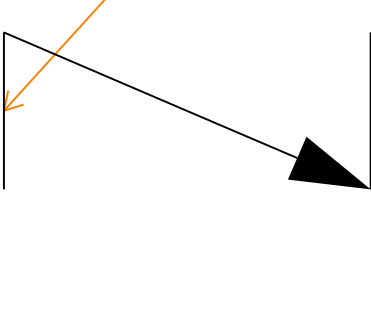
		
Mechanical: THLPRS THERMOSTAT LOW PRESSURE Element type: Symbol	Mechanical: THMCP MICROPROCESSOR THERMOSTAT Element type: Symbol	Mechanical: THPELE THERMOSTAT ELECTRIC Element type: Symbol
		
Mechanical: THPPNE THERMOSTAT PNEUMATIC PIPE Element type: Symbol	Mechanical: TMPSEN TEMPERATURE SENSOR Element type: Symbol	Mechanical: TODSC TEE OUTLET DOWN Element type: Symbol
		
Mechanical: TOUSC TEE OUTLET UP Element type: Symbol	Mechanical: TRAPFL FLOAT TRAP Element type: Symbol	Mechanical: TRAPFT FLOAT THERMOSTATIC TRAP Element type: Symbol

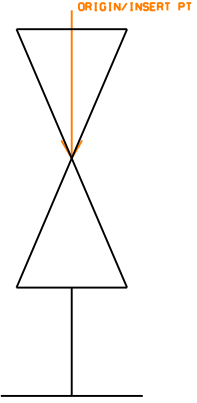
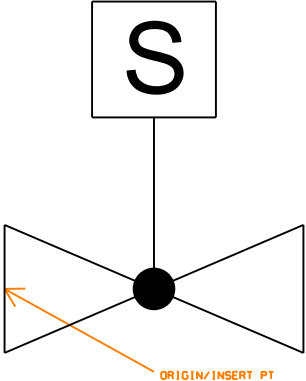
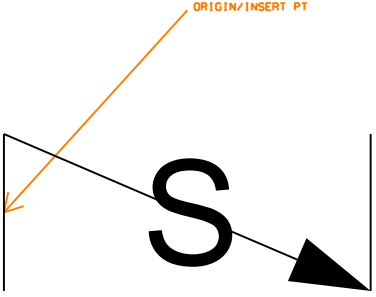
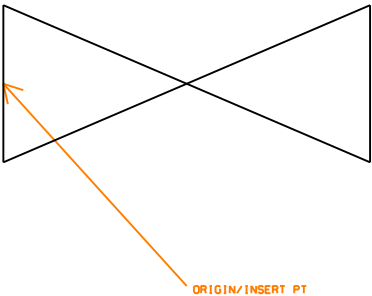
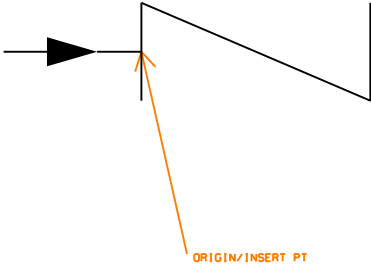
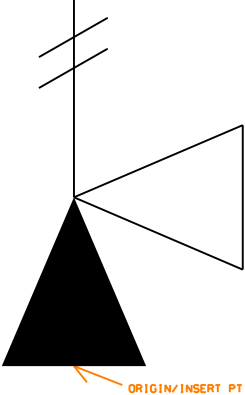
		
Mechanical: TRAPST STEAM TRAP Element type: Symbol	Mechanical: TRAPT THERMOSTATIC BLAST TRAP Element type: Symbol	Mechanical: TSODSC TEE SIDE OUTLET DOWN Element type: Symbol
		
Mechanical: TSOU TEE SIDE OUTLET UP Element type: Symbol	Mechanical: TSSC TEE Element type: Symbol	Mechanical: TSSWSC SINGLE SWEEP TEE Element type: Symbol
		
Mechanical: UNIO UNION Element type: Symbol	Mechanical: VA3WAM 3WAY AIRMOTOR CONTROLLER Element type: Symbol	Mechanical: VA3WEM 3WAY ELECTROMOTOR CONTRLE Element type: Symbol

		
Mechanical: VA3WM 3 WAY MANUAL VALVE Element type: Symbol	Mechanical: VAAHOS ANGLE HOSE VALVE Element type: Symbol	Mechanical: VABALL BALL VALVE PLAN Element type: Symbol
		
Mechanical: VABFLY BUTTERFLY VALVE Element type: Symbol	Mechanical: VACWR CONDENSATER VALVE Element type: Symbol	Mechanical: VADISC DIAPHRAGM VALVE Element type: Symbol
		
Mechanical: VAEMTR PNEUMATIC MOTOR Element type: Symbol	Mechanical: VAESOL SOLENOID VALVE ACTUATOR Element type: Symbol	Mechanical: VAFLSC FLOAT VALVE Element type: Symbol

		
Mechanical: VAGAMC PNEUMATIC CTRLD GATE VALVE Element type: Symbol	Mechanical: VAGLAM PNEUMATIC CTRLD GLOBE VLV Element type: Symbol	Mechanical: VAGLE ANGLE GLOBE VALVE Element type: Symbol
		
Mechanical: VAGLSE GLOBE VALVE Element type: Symbol	Mechanical: VAGSE ANGLE GATE VALVE Element type: Symbol	Mechanical: VAGSP ANGLE GATE VALVE PLAN Element type: Symbol
		
Mechanical: VAGTSE GATE VALVE Element type: Symbol	Mechanical: VAHASC GATE VALVE PLAN Element type: Symbol	Mechanical: VAHGLS HOSE GLOBE VALVE Element type: Symbol

		
Mechanical: VAHGSC HOSE GATE VALVE Element type: Symbol	Mechanical: VALSSC LOCK SHIELD VALVE Element type: Symbol	Mechanical: VAMAGS MAGNETIC STOP VALVE Element type: Symbol
		
Mechanical: VAMNNS VLV ACTUA MAN NONRISINGSTEM Element type: Symbol	Mechanical: VAMOGS MOTOR OPERATD GATE VALVE Element type: Symbol	Mechanical: VAMOLS MOTOR OPERATD GLOBE VALVE Element type: Symbol
		
Mechanical: VAMOSY VLV ACTOR MAN OUTSTEM Element type: Symbol	Mechanical: VANEED NEEDLE VALVE Element type: Symbol	Mechanical: VAPLUG PLUG VALVE Element type: Symbol

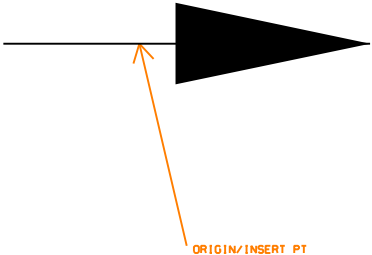
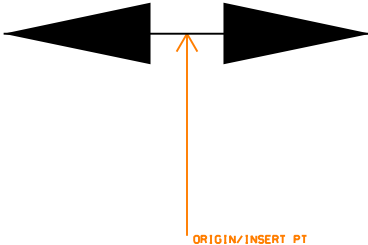
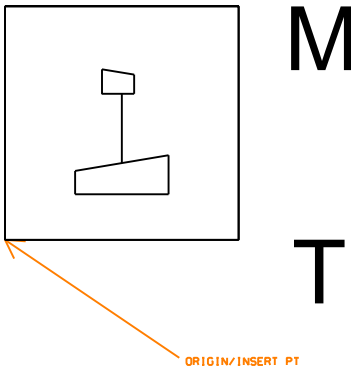
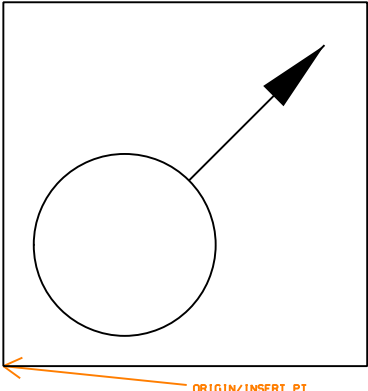
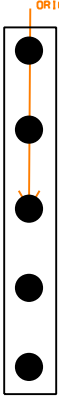
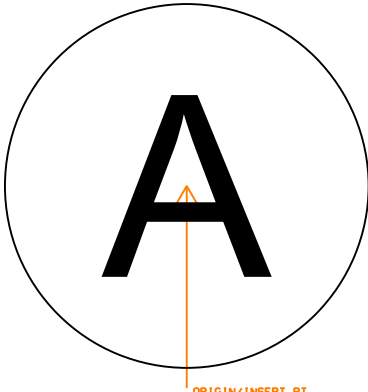
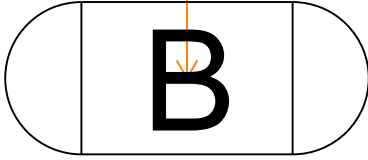
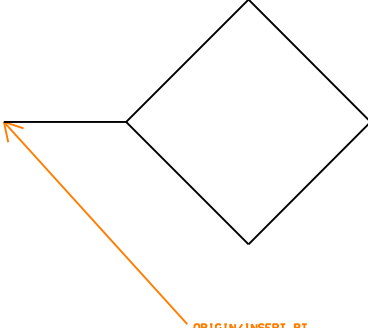
		
Mechanical: VAPMTD VALVE ACTUATOR PNEUMOT Element type: Symbol	Mechanical: VAPRED PRESSURE REDUCING VALVE Element type: Symbol	Mechanical: VAPRRD PRESSURE REDUCING VALVE Element type: Symbol
		
Mechanical: VAQOSC QUICK OPENING VALVE Element type: Symbol	Mechanical: VARELF RELIEF OR SAFETY VALVE Element type: Symbol	Mechanical: VASCE ANGLE GLOBE VALVE Element type: Symbol
		
Mechanical: VASCP ANGLE GLOBE VALVE PLAN Element type: Symbol	Mechanical: VASFSC SAFETY VALVE Element type: Symbol	Mechanical: VASGCH SWING GATE CHECK VALVE Element type: Symbol

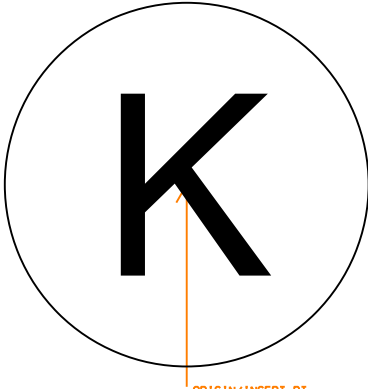
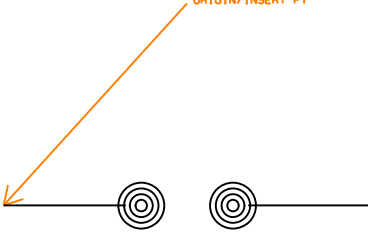
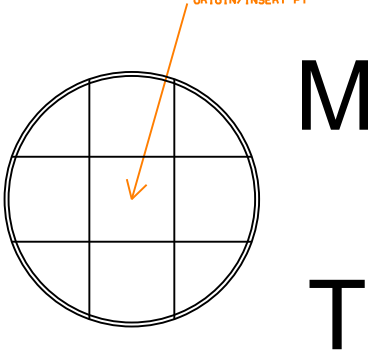
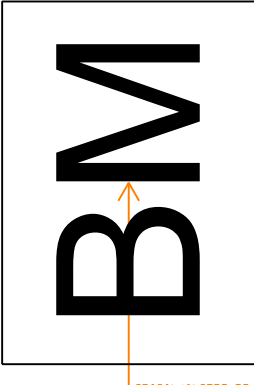
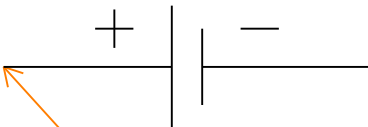
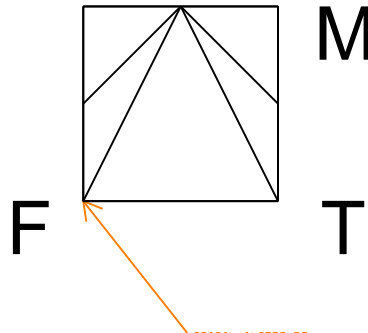
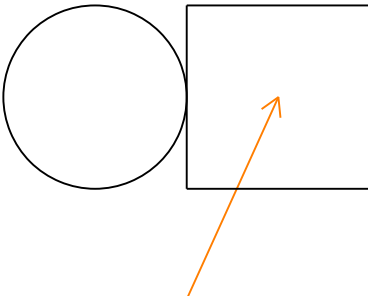
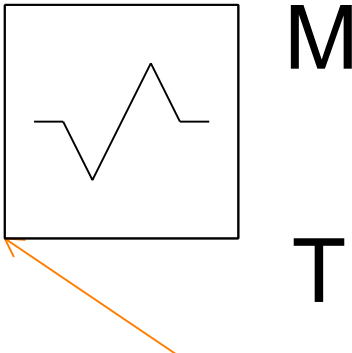
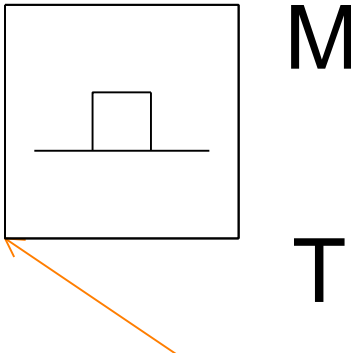
		
Mechanical: VASNAP SNAP ACTION VALVE Element type: Symbol	Mechanical: VASOLN SOLENOID VALVE Element type: Symbol	Mechanical: VASPCH SPRING CHECK VALVE Element type: Symbol
		
Mechanical: VASTSC GATE VALVE Element type: Symbol	Mechanical: VASWSC STRAIGHT WAY CHECK VALVE Element type: Symbol	Mechanical: VATPR TEMP PRESSURE RELIEF VALVE Element type: Symbol

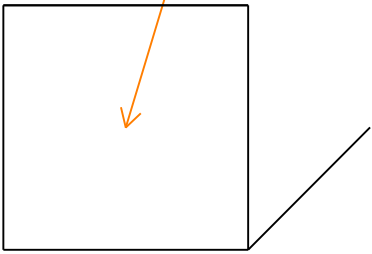
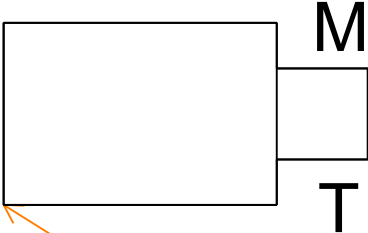
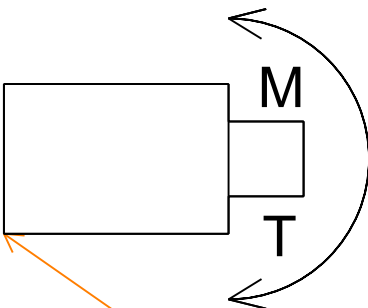
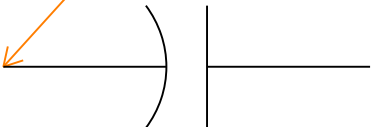
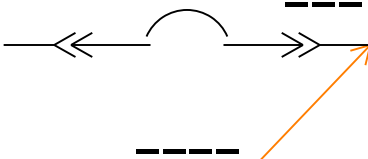
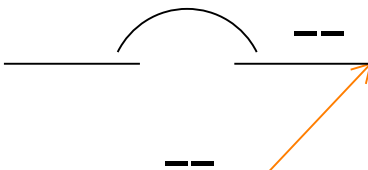
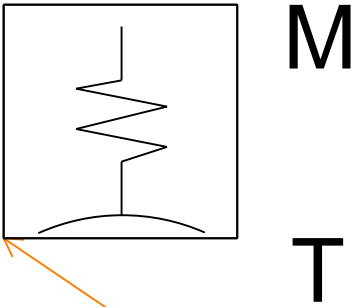
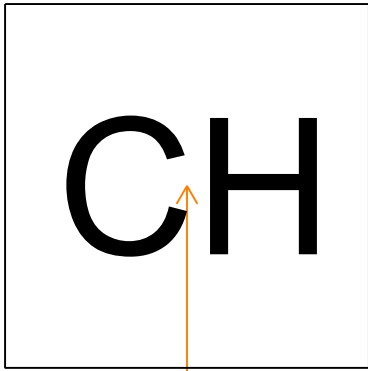
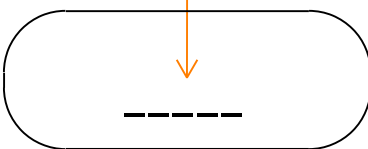
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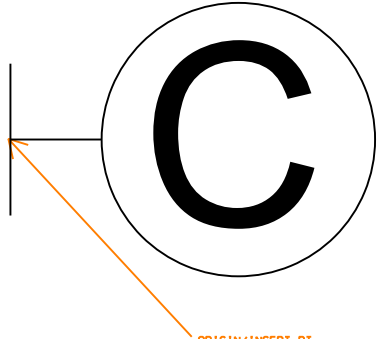
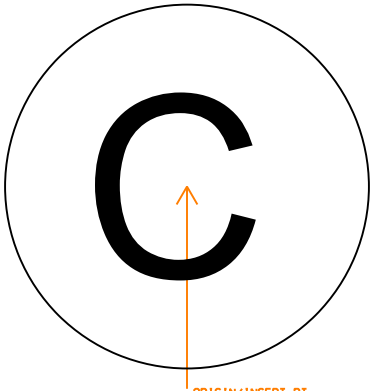
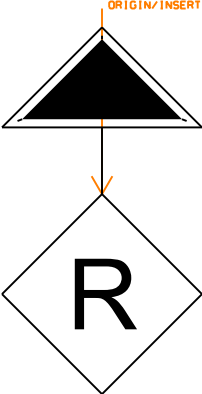
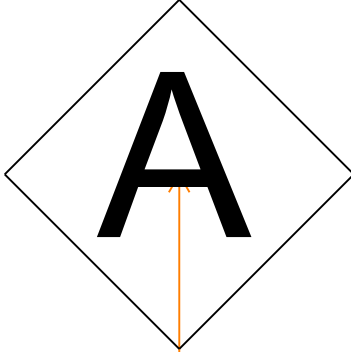
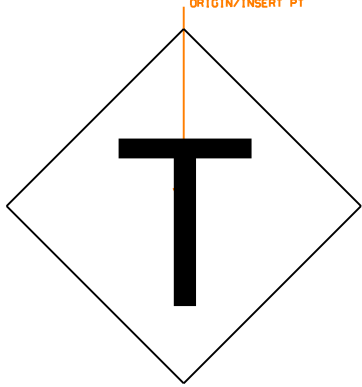
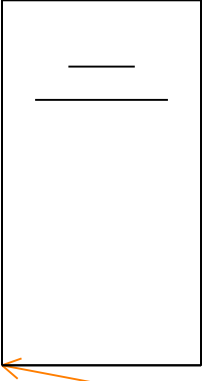
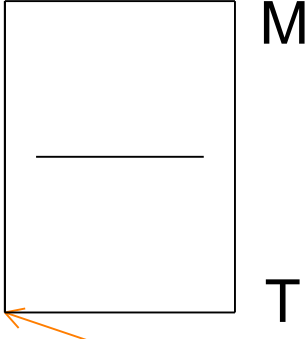
15 Electrical Symbols Library

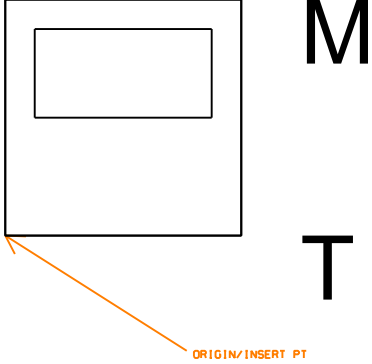
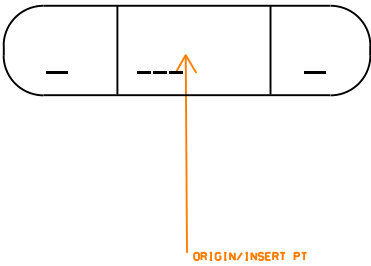
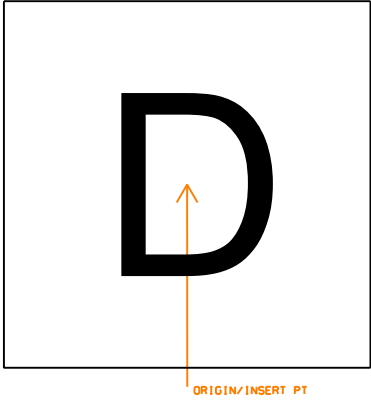
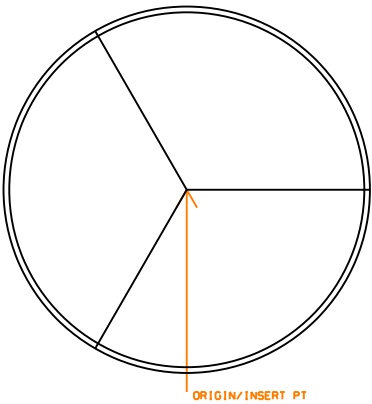
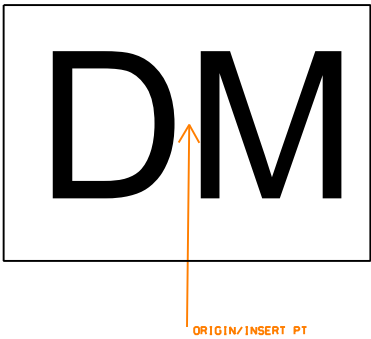
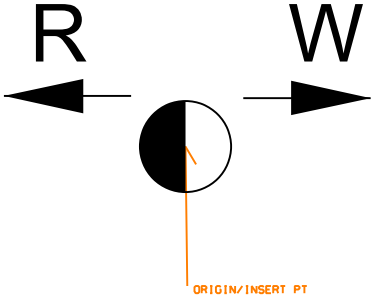
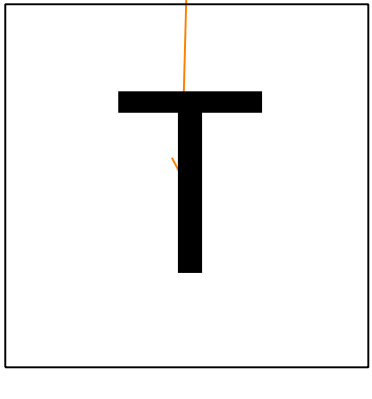
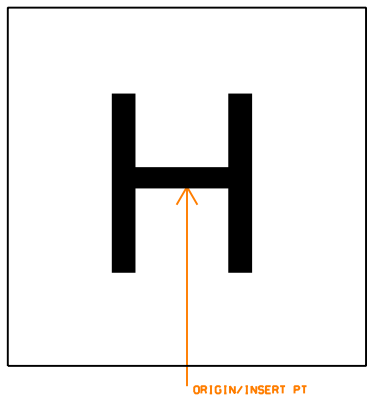
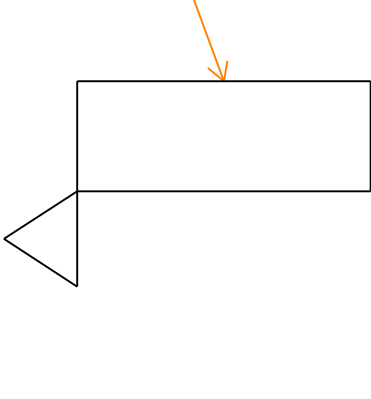
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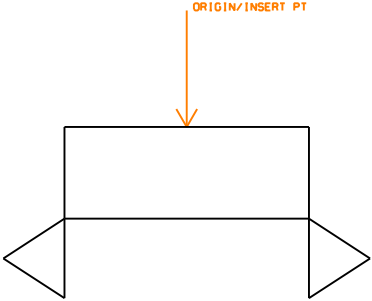
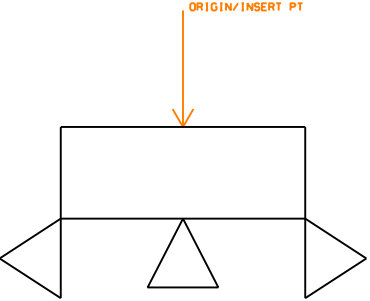
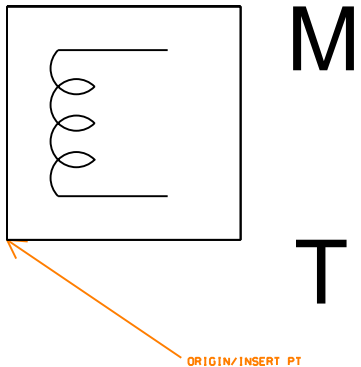
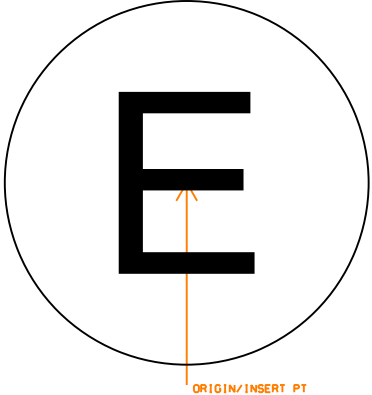
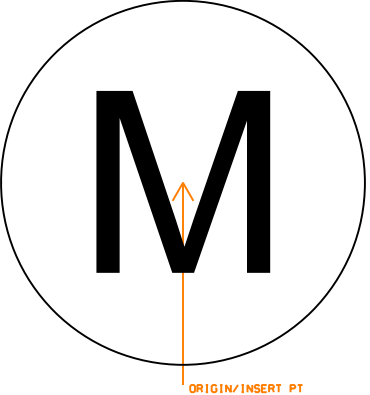
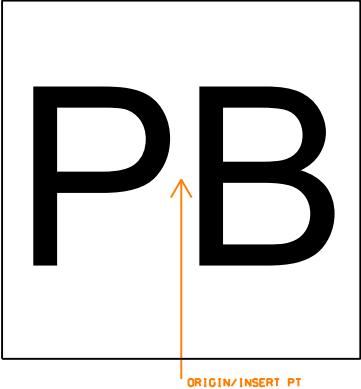
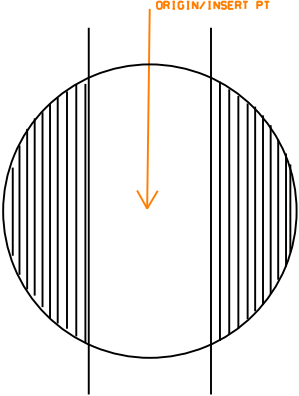
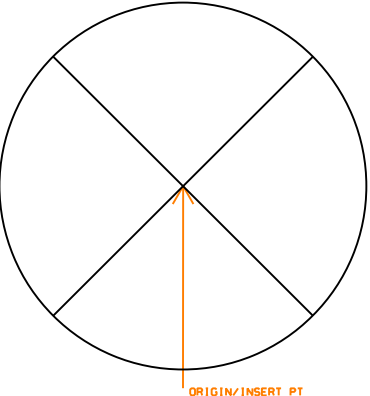
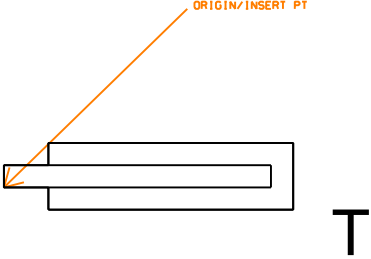
		
Electrical: 1DIR DIRECTION ARROW Element type: Symbol	Electrical: 2DIR DOUBLE DIRECTION ARROW Element type: Symbol	Electrical: 2WAYMC 2-WAY RADIO MICROPHONE Element type: Symbol
		
Electrical: ACCBIO BIOMETRIC ACCESS CONTROL Element type: Symbol	Electrical: ACLLEL APPROACH LIGHTBAR_ELEVATED Element type: Symbol	Electrical: ACLLSF APPROACH LIGHTBAR_SEMIFLUSH Element type: Symbol
		
Electrical: AEROD AERIAL ROD Element type: Symbol	Electrical: AFBCN AIRFIELD BEACON Element type: Symbol	Electrical: ANNUN ANNUNCIATOR Element type: Symbol

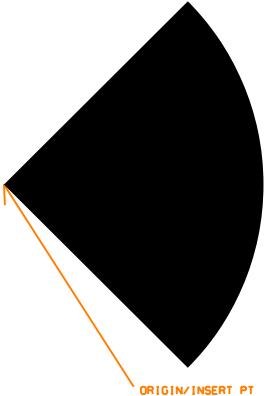
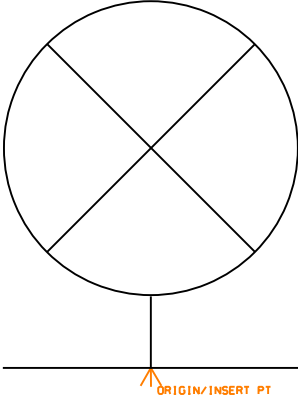
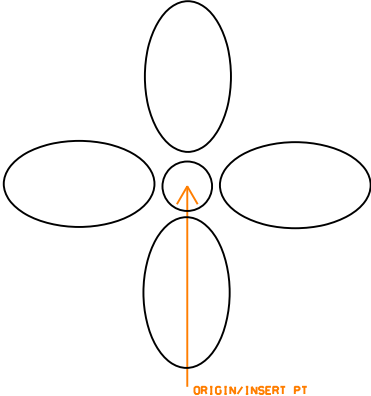
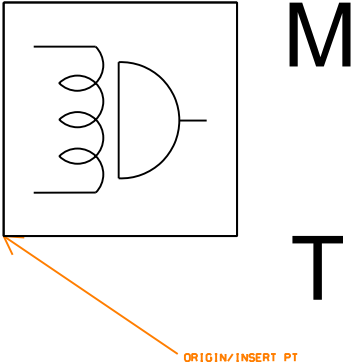
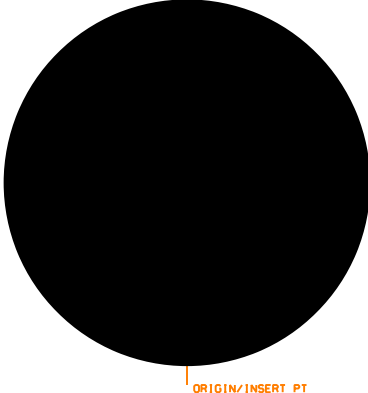
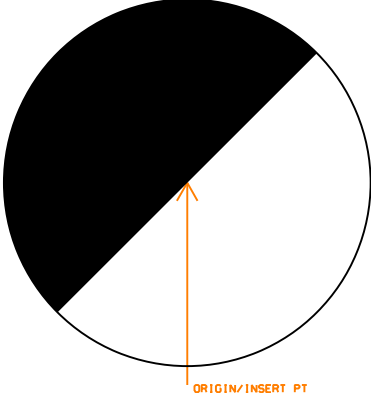
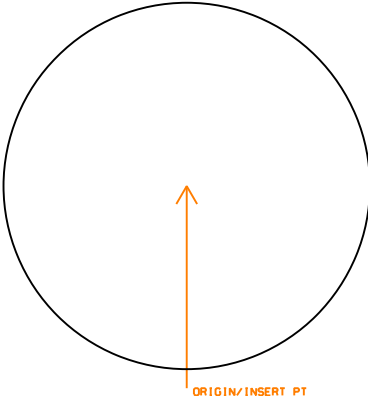
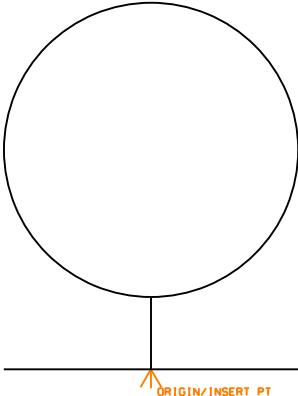
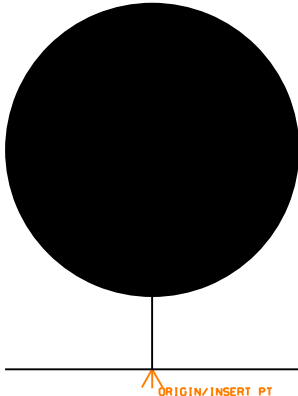
		
Electrical: ANNUNT LOCAL CONTROL ANNUNCIATION UNIT Element type: Symbol	Electrical: ARREST LIGHTNING ARRESTOR Element type: Symbol	Electrical: AUDIO AUDIO DEVICE Element type: Symbol
		
Electrical: BARMKR BARRIER MARKER Element type: Symbol	Electrical: BATTY BATTERY Element type: Symbol	Electrical: BEAM BI-STATIC BEAM SENSOR Element type: Symbol
		
Electrical: BELL BELL Element type: Symbol	Electrical: BIORDR BIOMETRICS ACCESS CONTROL DEVICE Element type: Symbol	Electrical: BUTTON PUSH BUTTON Element type: Symbol

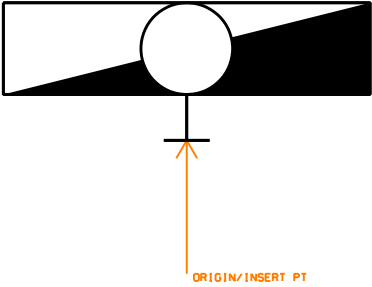
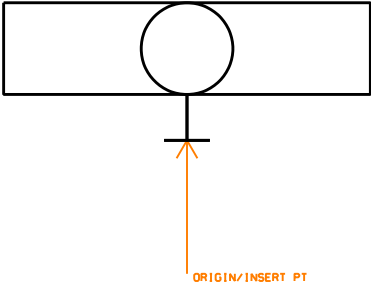
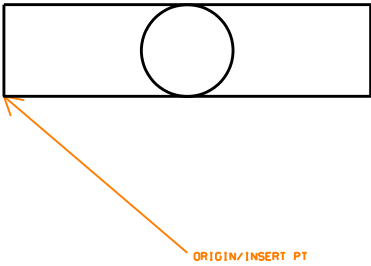
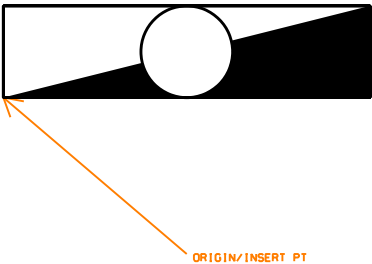
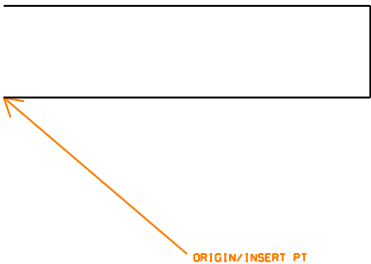
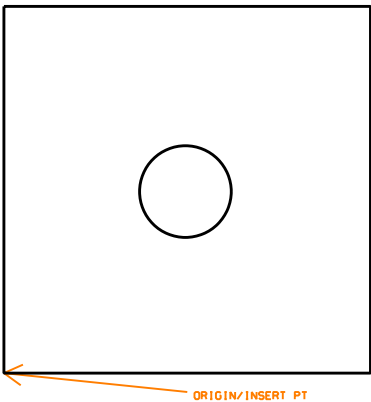
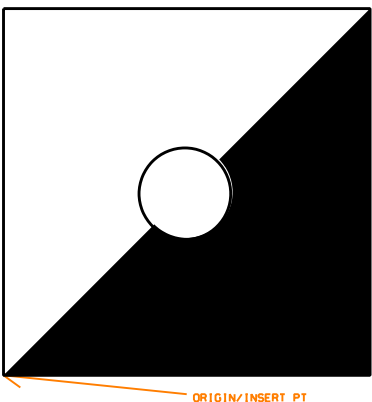
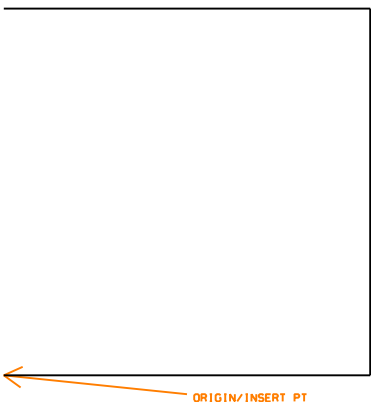
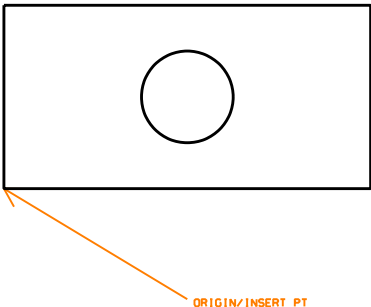
		
Electrical: BUZZER BUZZER Element type: Symbol	Electrical: CAMFXD CAMERA Element type: Symbol	Electrical: CAMPTZ CAMERA WITH PAN/TILT/ZOOM Element type: Symbol
		
Electrical: CAPCTR CAPACITOR Element type: Symbol	Electrical: CBDOUT DRAWOUT CIRCUIT BREAKER Element type: Symbol	Electrical: CBMCAS MOLDED CASE CKT BREAKER Element type: Symbol
		
Electrical: CELLTX CELLULAR TRANSMITTER Element type: Symbol	Electrical: CHIME CHIME Element type: Symbol	Electrical: CKTID CIRCUIT ID SYMBOL Element type: Symbol

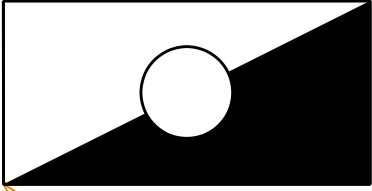
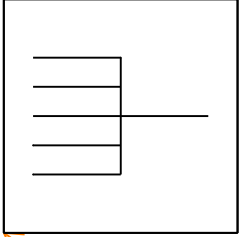
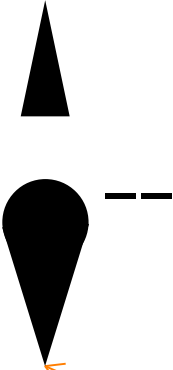
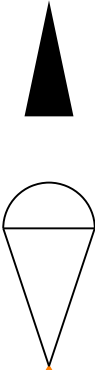
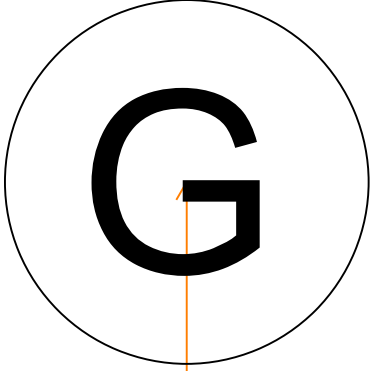
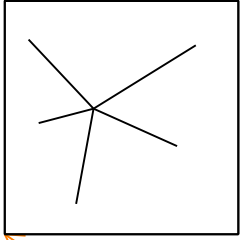
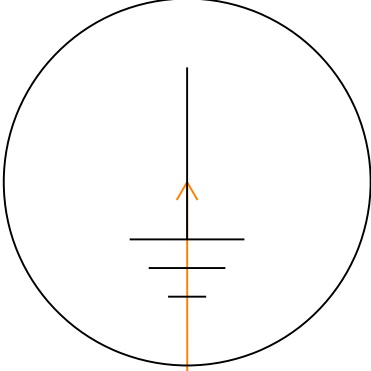
		
Electrical: CLOCKW CLOCK OUTLET WALL MOUNTED Element type: Symbol	Electrical: CMANH COMMUNICATION MANHOLE Element type: Symbol	Electrical: CMPANL COMMUNICATION PANEL Element type: Symbol
		
Electrical: CPLTM CKT LINE TERMINATOR Element type: Symbol	Electrical: CPREC2 CATHODIC PROTECTION RECTIFIER Element type: Symbol	Electrical: CPSAN CP SACRIFICIAL ANODE Element type: Symbol
		
Electrical: CPTST CATHODIC PROTECT TEST STATION Element type: Symbol	Electrical: CPU CENTRAL PROCESSING UNIT Element type: Symbol	Electrical: CRDRDR CARD ACCESS READER Element type: Symbol

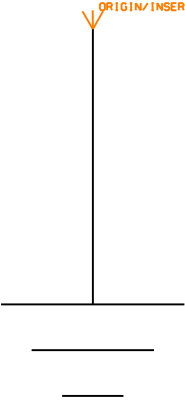
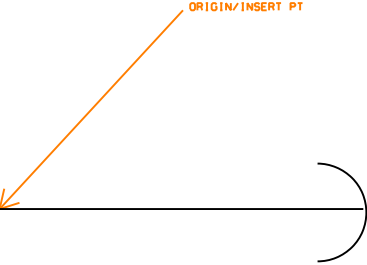
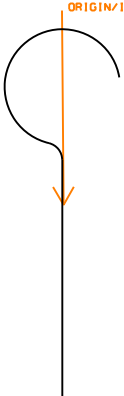
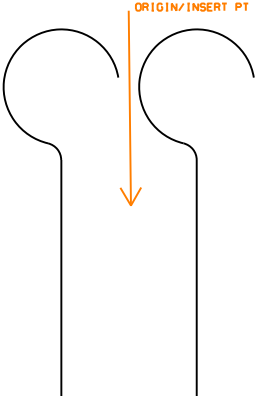
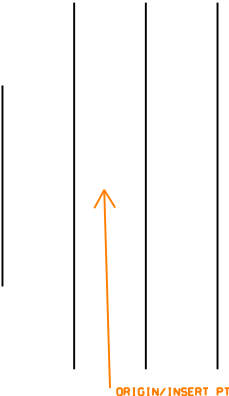
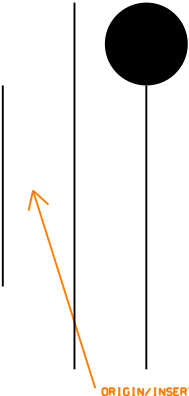
		
Electrical: CTRLPL CONTROL PANEL Element type: Symbol	Electrical: DBID DUCTBANK ID SYMBOL Element type: Symbol	Electrical: DOROPN ELECTRIC DOOR OPENER Element type: Symbol
		
Electrical: DORREV REVOLVING DOOR Element type: Symbol	Electrical: DSTMKR RW DISTANCE MARKER Element type: Symbol	Electrical: DTHL DISPLACE THRESHOLD LIGHT Element type: Symbol
		
Electrical: DXFMR TRANSFORMER, PLAN VIEW Element type: Symbol	Electrical: EHANDH ELECTRICAL HANDHOLE Element type: Symbol	Electrical: ELBP1L 1LAMP EMRGNCY LGHTBTTRY PWR Element type: Symbol

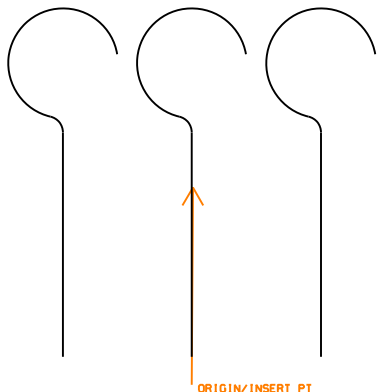
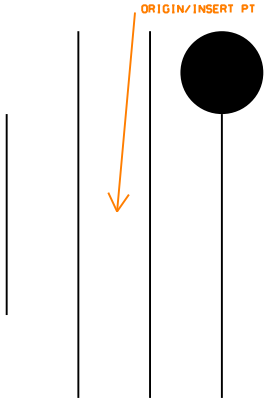
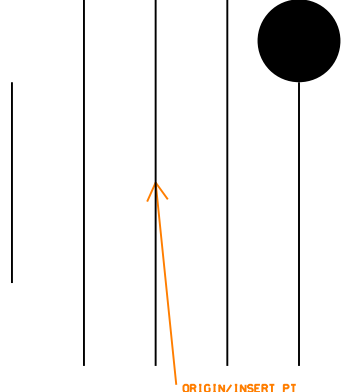
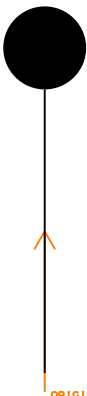
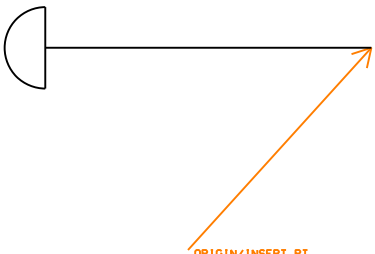
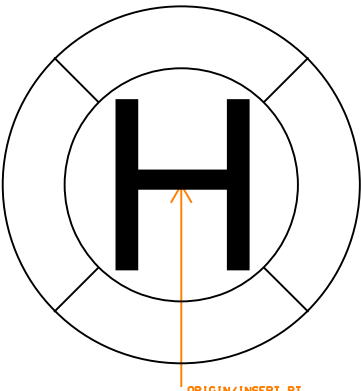
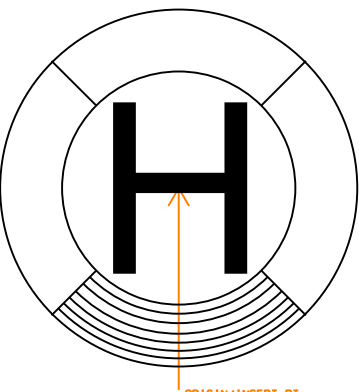
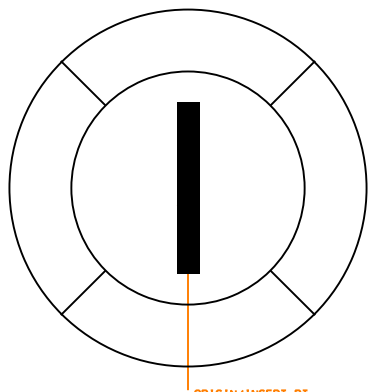
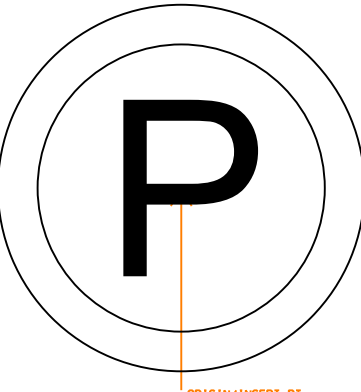
		
Electrical: ELBP2L 2LAMP EMRGNCY LGHTBTTRY PWR Element type: Symbol	Electrical: ELBP3L 3LAMP EMRGNCY LGHTBTTRY PWR Element type: Symbol	Electrical: ELLOCK ELECTRONIC LOCK Element type: Symbol
		
Electrical: EMANH ELECTRICAL MANHOLE Element type: Symbol	Electrical: EMETER ELECTRICAL METER Element type: Symbol	Electrical: EPULLB ELECTRICAL PULLBOX Element type: Symbol
		
Electrical: ERECT EMERGENCY RECEPTACLE Element type: Symbol	Electrical: EXITCM CEILING MNTD EXITSIGN LIGHT Element type: Symbol	Electrical: EXITDV EXIT DEVICE Element type: Symbol

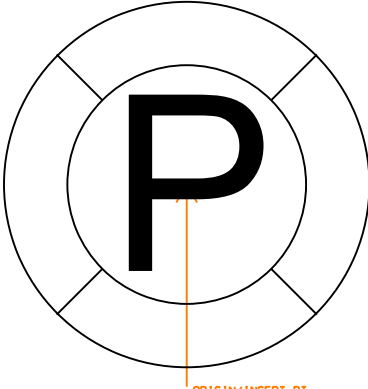
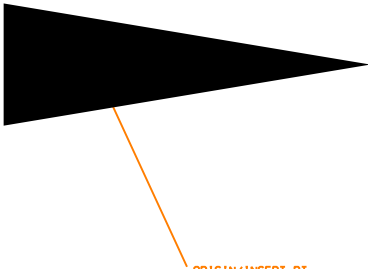
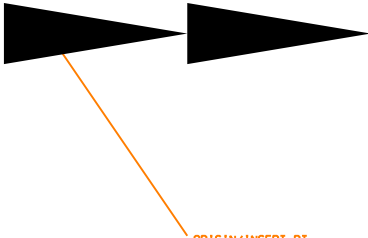
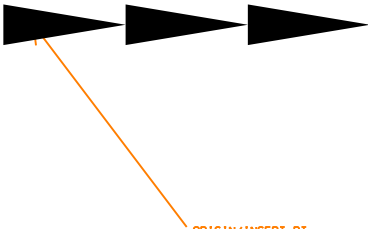
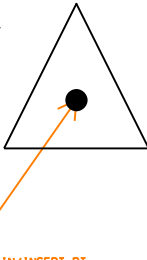
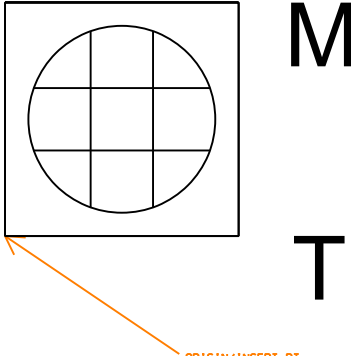
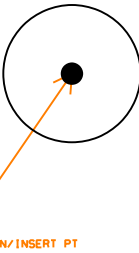
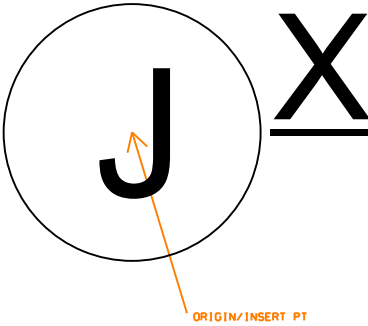
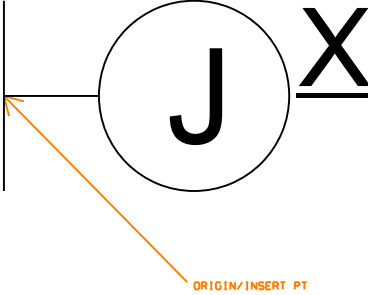
		
Electrical: EXITLF EXIT SIGN LIGHTED FACE Element type: Symbol	Electrical: EXITWM WALL MOUNTD EXIT SIGN LIGHT Element type: Symbol	Electrical: FAN CEILING FAN Element type: Symbol
		
Electrical: FIBMOD FIBER OPTIC MODULE Element type: Symbol	Electrical: FIXSPB PENDANT BATTERY FIXTURE Element type: Symbol	Electrical: FIXSPQ PENDANT QUARTZ RESTRIKE Element type: Symbol
		
Electrical: FIXSPR PENDANT FIXTURE Element type: Symbol	Electrical: FIXWM WALL MOUNTED FIXTURE Element type: Symbol	Electrical: FIXWMB WALL MOUNTED BATTERY FIXTURE Element type: Symbol

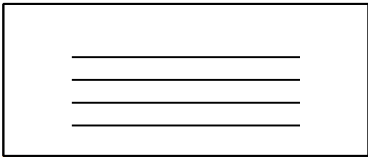
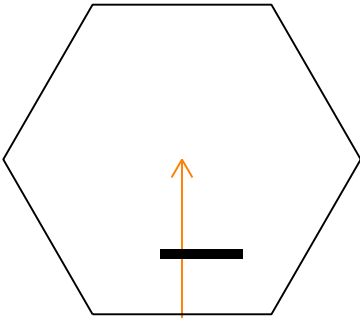
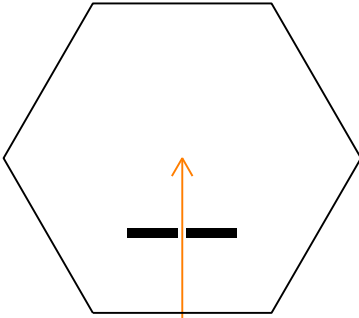
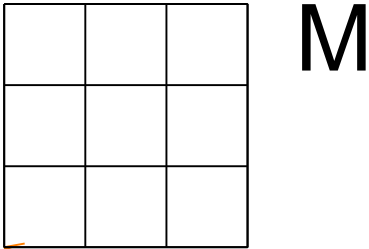
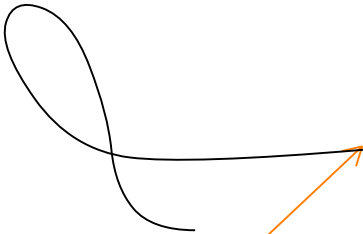
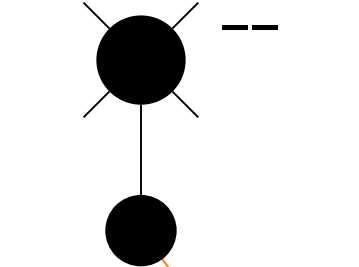
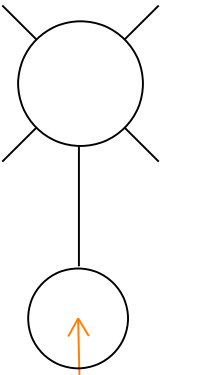
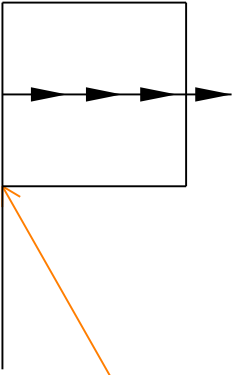
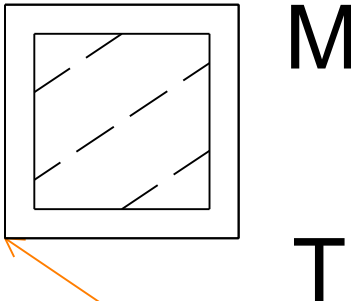
		
Electrical: FL14WB 1X4 WALL MNT FIXT W BATTERY Element type: Symbol	Electrical: FL14WM 1X4 WALL MNT FIXTURE Element type: Symbol	Electrical: FL1X4 1X4 LIGHT FIXTURE Element type: Symbol
		
Electrical: FL1X4B 1X4 LIGHT FIXTURE W BATTERY Element type: Symbol	Electrical: FL1X4C 1X4 LIGHT CONTINUOUS Element type: Symbol	Electrical: FL2X2 2X2 LIGHT FIXTURE Element type: Symbol
		
Electrical: FL2X2B 2X2 LIGHT FIXTURE W BATTERY Element type: Symbol	Electrical: FL2X2C 2X2 LIGHT CONTINUOUS Element type: Symbol	Electrical: FL2X4 2X4 LIGHT FIXTURE Element type: Symbol

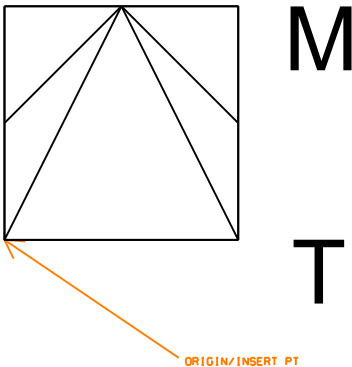
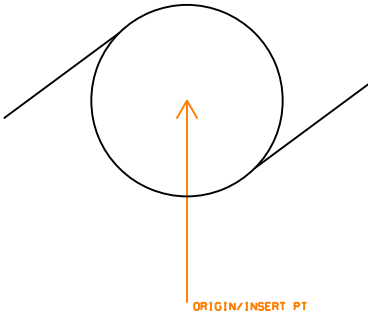
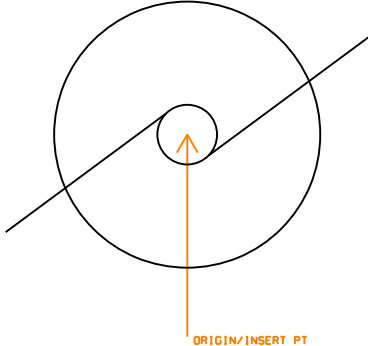
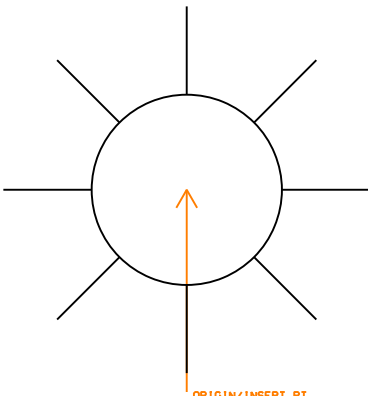
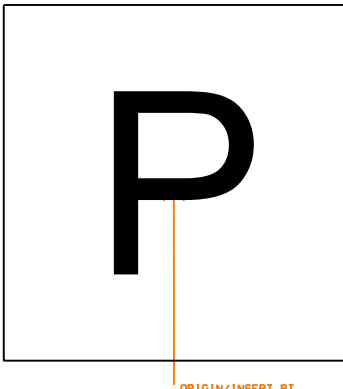
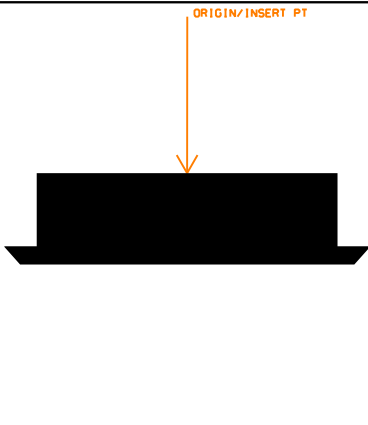
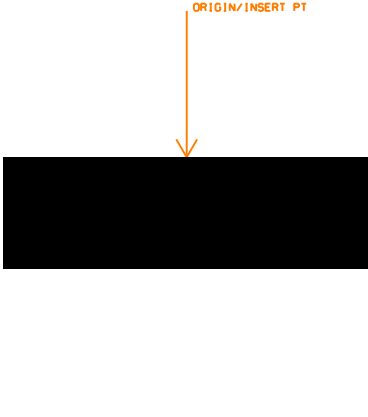
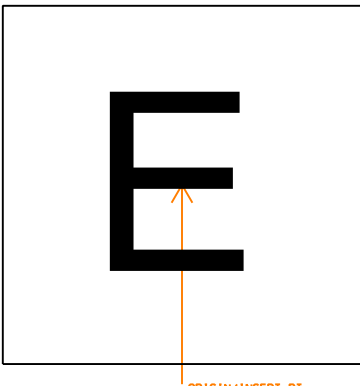
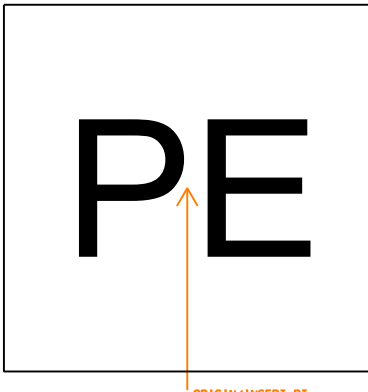
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 M T ORIGIN/INSERT PT
Electrical: FL2X4B 2X4 LIGHT FIXTURE W BATTERY Element type: Symbol	Electrical: FL2X4C 2X4 LIGHT CONTINUOUS Element type: Symbol	Electrical: FLDPNL FIELD PANEL Element type: Symbol
 ORIGIN/INSERT PT	 ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Electrical: FLTN FLOODLIGHT, NEW Element type: Symbol	Electrical: FLTX FLOODLIGHT, EXISTING Element type: Symbol	Electrical: FUSRAT FUSE WITH RATING Element type: Symbol
 ORIGIN/INSERT PT	 M T ORIGIN/INSERT PT	 ORIGIN/INSERT PT
Electrical: GENRTR GENERATOR Element type: Symbol	Electrical: GLASBR GLASS BREAKAGE SENSOR Element type: Symbol	Electrical: GRDROD GROUNDING ROD Element type: Symbol

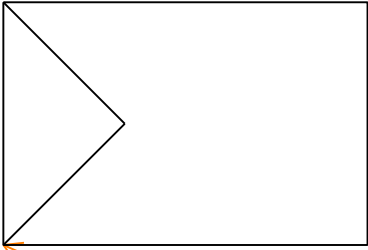
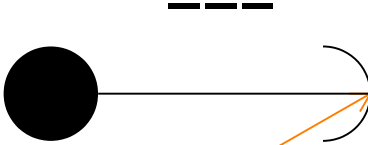
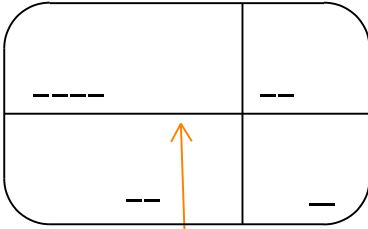
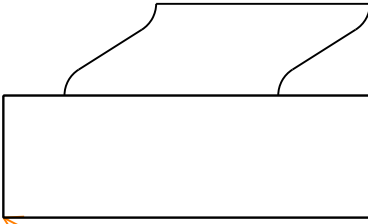
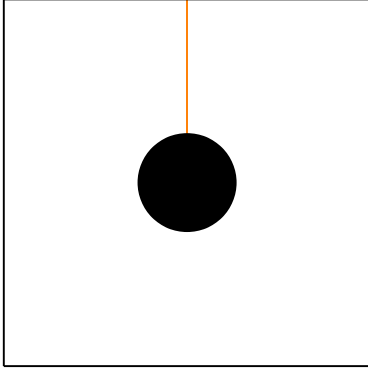
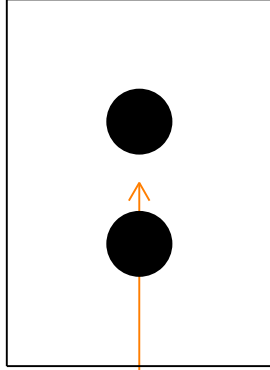
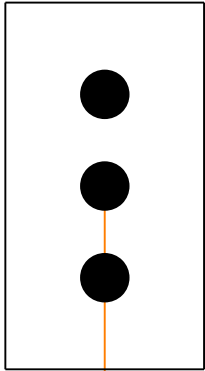
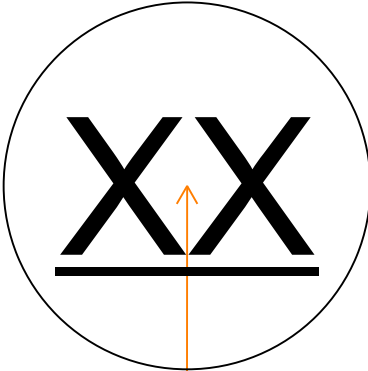
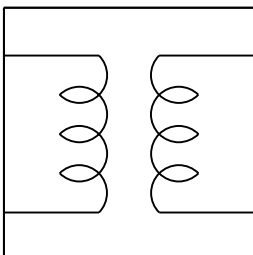
		
Electrical: GROUND EARTH GROUND Element type: Symbol	Electrical: GUYWR GUY WIRE Element type: Symbol	Electrical: HAS1H 1 HOT LEG Element type: Symbol
		
Electrical: HAS1N 1 NEUTRAL LEG Element type: Symbol	Electrical: HAS1S 1 SWITCH LEG Element type: Symbol	Electrical: HAS2H 2 HOT LEGS Element type: Symbol
		
Electrical: HAS2S 2 SWITCH LEGS Element type: Symbol	Electrical: HAS3HN 3 HOT 1 NEUT LEGS Element type: Symbol	Electrical: HAS3MK HOT NEUTRAL GROUND Element type: Symbol

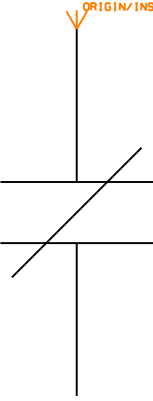
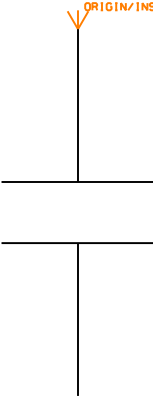
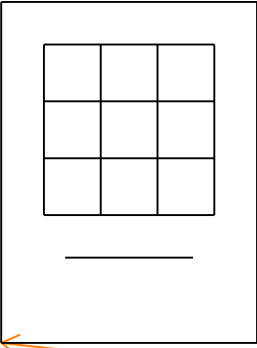
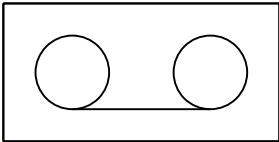
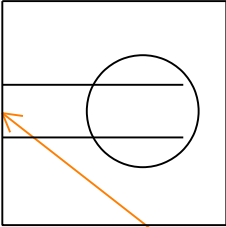
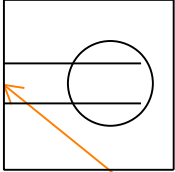
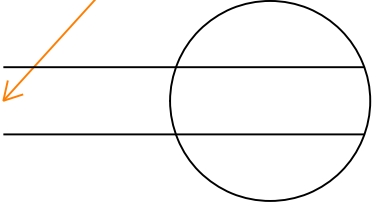
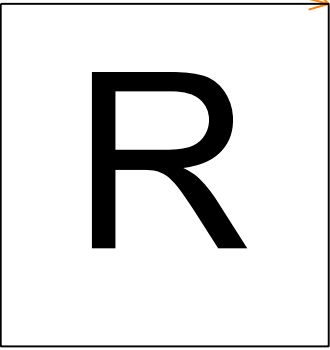
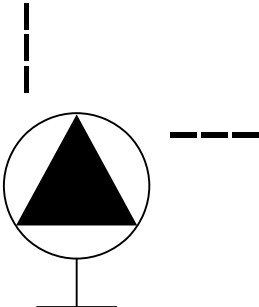
		
Electrical: HAS3S 3 SWITCH LEG Element type: Symbol	Electrical: HAS4MK 2 HOT NEUTRAL GROUND Element type: Symbol	Electrical: HAS5MK 3 HOT NEUTRAL GROUND Element type: Symbol
		
Electrical: HASGND 1 GROUND LEG Element type: Symbol	Electrical: HEDASW AERIAL SERVICE WEATHER HEAD Element type: Symbol	Electrical: HLL HOVERLANE Element type: Symbol
		
Electrical: HLLL HOVERLANE LIMIT LIGHT Element type: Symbol	Electrical: HPIL HELIPAD INSET LIGHT Element type: Symbol	Electrical: HPPELE HELIPAD PER LIGHT, ELEVATED Element type: Symbol

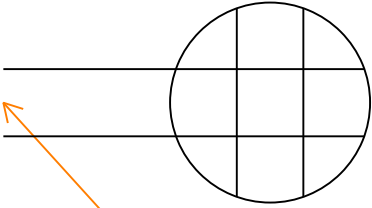
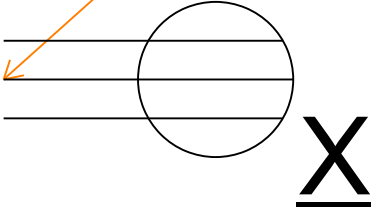
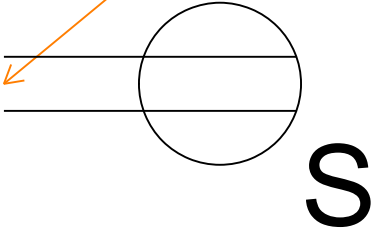
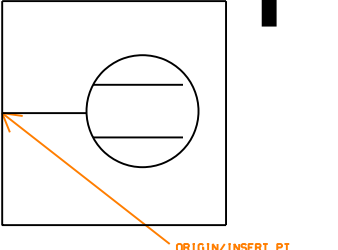
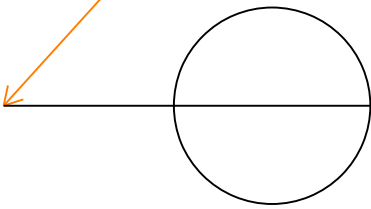
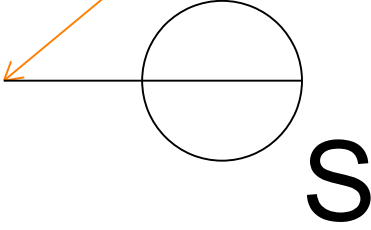
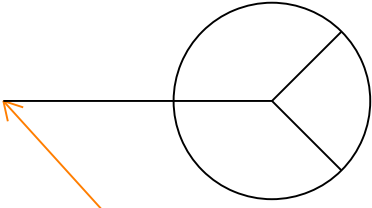
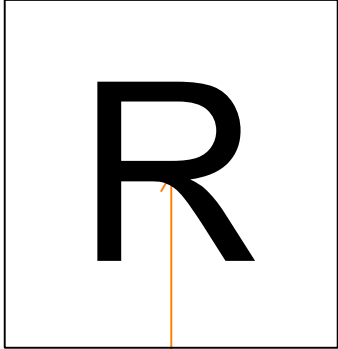
		
Electrical: HPPLSF HELIPAD PER LIGHT, SEMIFLUSH Element type: Symbol	Electrical: HRUN1 HOME RUN 1 Element type: Symbol	Electrical: HRUN2 HOME RUN 2 Element type: Symbol
	POCC 	
Electrical: HRUN3 HOME RUN 3 Element type: Symbol	Electrical: INTAG INTERCONNECTION W/SUBST, ABOVEGROUND Element type: Symbol	Electrical: INTCOM INTERCOM Element type: Symbol
POCC 		
Electrical: INTUG INTERCONNECTION W/SUBST, UNDERGROUND Element type: Symbol	Electrical: JNBX EXTERIOR UTIL JUNCTION BOX Element type: Symbol	Electrical: JNBXWM JUNCTION BOX WALL MT Element type: Symbol

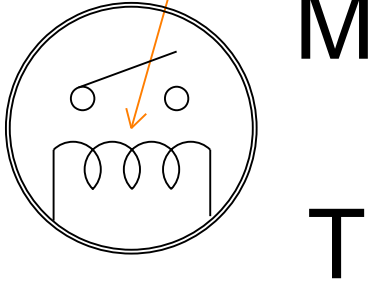
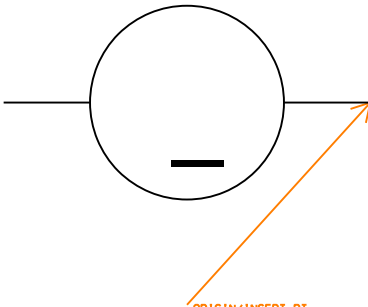
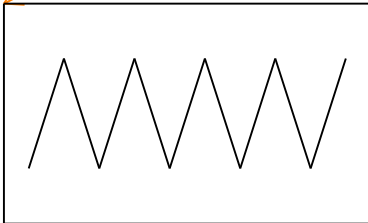
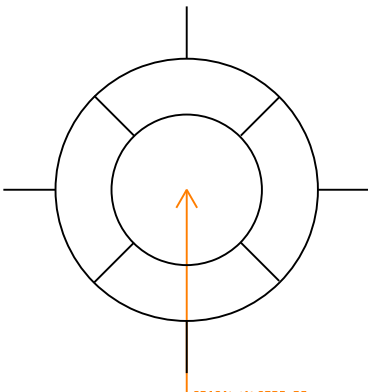
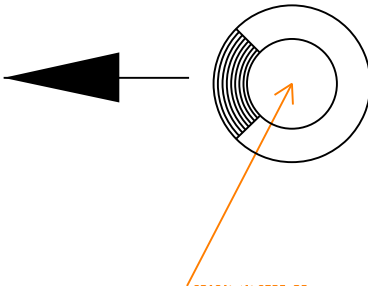
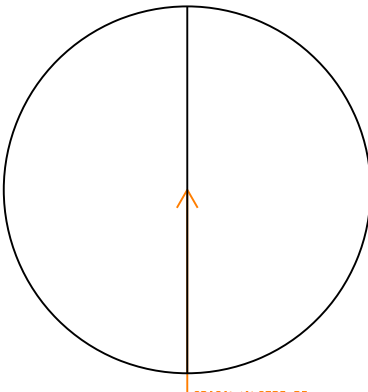
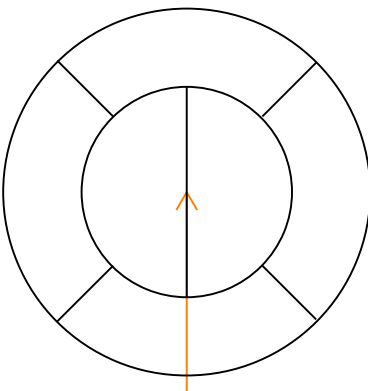
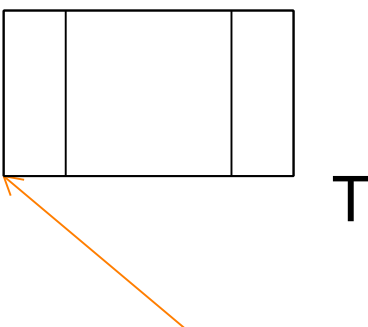
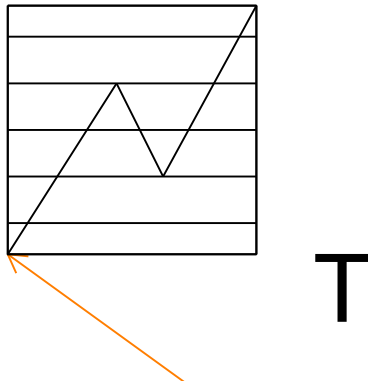
		
Electrical: KEYBRD KEYBOARD Element type: Symbol	Electrical: KEYN1 KEYNOTE INDICATOR Element type: Symbol	Electrical: KEYN2 KEYNOTE INDICATOR Element type: Symbol
		
Electrical: KEYPAD KEYPAD DEVICE Element type: Symbol	Electrical: LEADER LEADER LINE Element type: Symbol	Electrical: LTPLN LIGHT POLE, NEW Element type: Symbol
		
Electrical: LTPLX LIGHT POLE, EXISTING Element type: Symbol	Electrical: MICROW OUTDOOR MICROWAVE XMIT UNT Element type: Symbol	Electrical: MONITR MONITOR Element type: Symbol

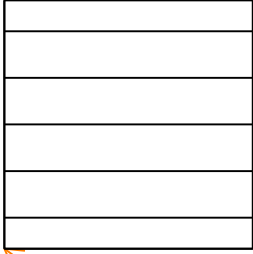
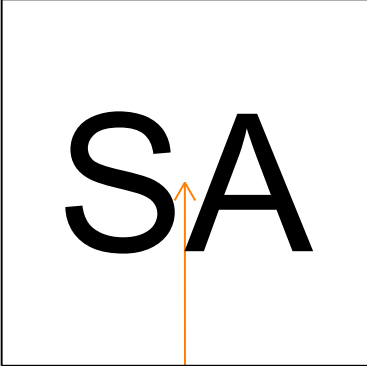
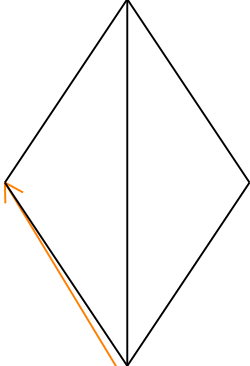
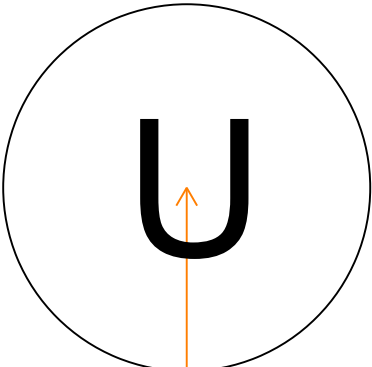
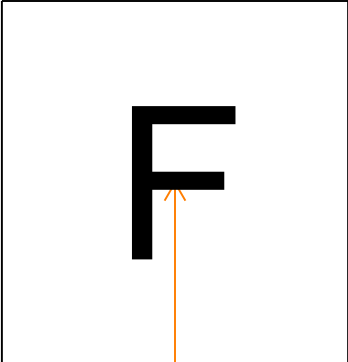
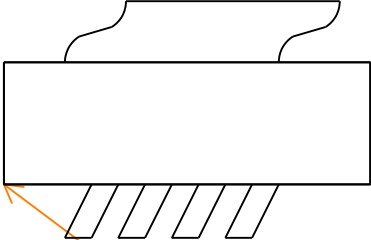
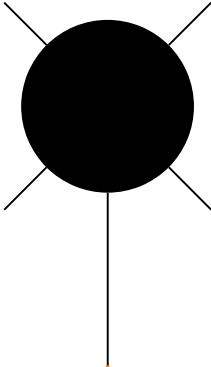
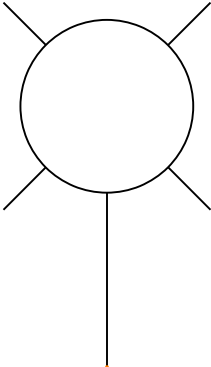
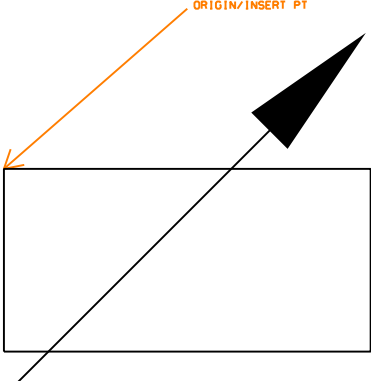
		
Electrical: MOTION MOTION DETECTOR Element type: Symbol	Electrical: MOTR1P MOTOR, SINGLE PHASE Element type: Symbol	Electrical: MOTR3P MOTOR, THREE PHASE Element type: Symbol
		
Electrical: OBSTRL OBSTRUCTION LIGHT Element type: Symbol	Electrical: PAPI PAPI LIGHT UNIT Element type: Symbol	Electrical: PBFMC FLUSH MNTD PANELBRD CABINET Element type: Symbol
		
Electrical: PBSMC SURFACE MNTD PANELBRD CAB Element type: Symbol	Electrical: PHANDH PRIMARY ELECTRICAL HANDHOLE Element type: Symbol	Electrical: PHOTO PHOTOELECTRIC RELAY Element type: Symbol

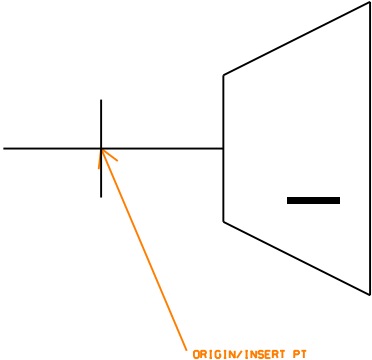
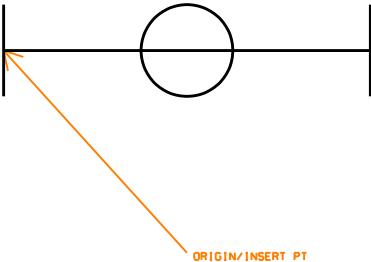
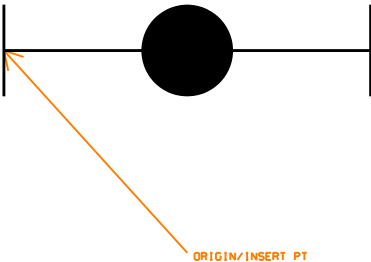
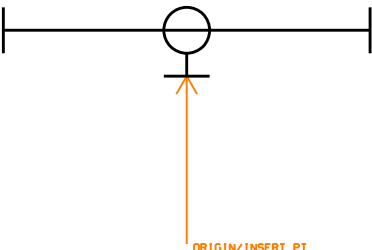
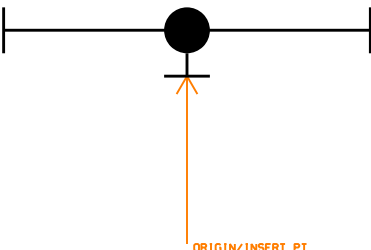
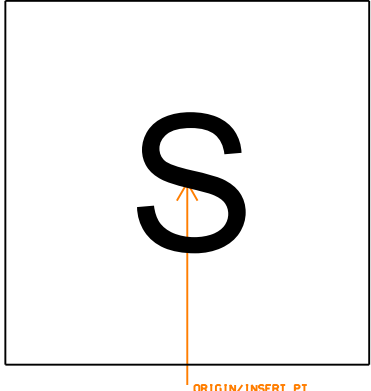
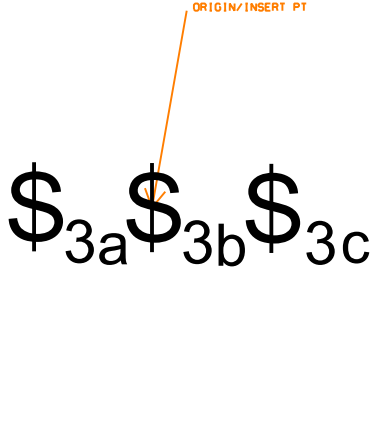
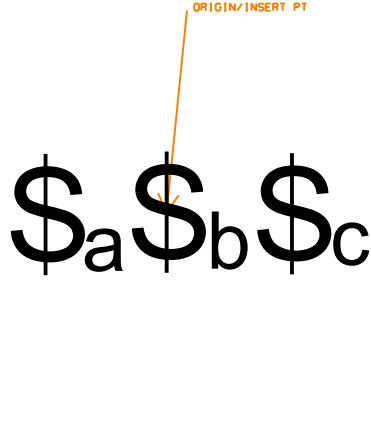
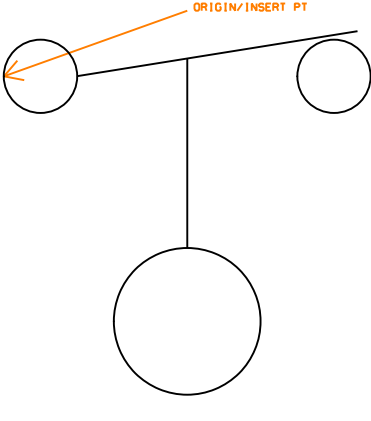
		
Electrical: PHOTOV PHOTOVOLTAIC POWER Element type: Symbol	Electrical: POLEAR AERIAL POLE W GUYING Element type: Symbol	Electrical: POLEID POLE IDENT. SYMBOL Element type: Symbol
		
Electrical: PRINTR PRINTER Element type: Symbol	Electrical: PSHST1 ONE PUSHBUTTON STATION Element type: Symbol	Electrical: PSHST2 TWO PUSHBUTTON STATION Element type: Symbol
		 T
Electrical: PSHST3 THREE PUSHBUTTON STATION Element type: Symbol	Electrical: PWRDVC POWER SYSTEM DEVICE ANSI Element type: Symbol	Electrical: PWRSPY POWER SUPPLY Element type: Symbol

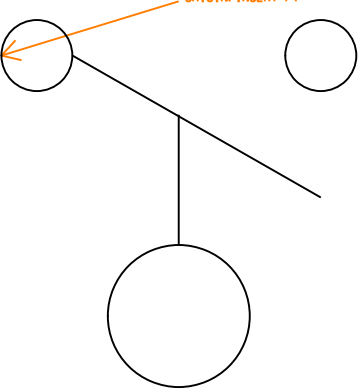
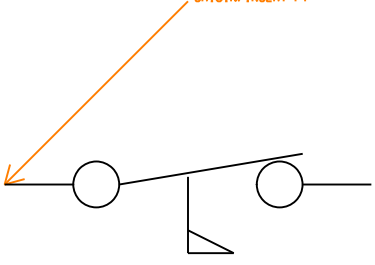
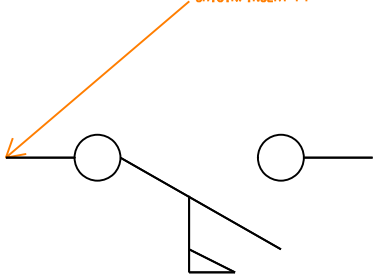
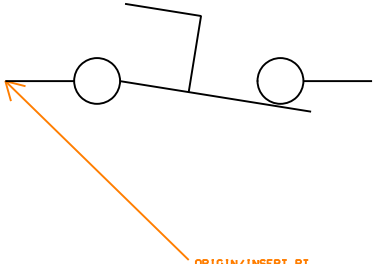
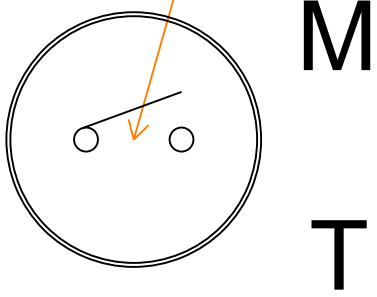
		
Electrical: RCNC NORMALLY CLSD RELAY CONTACT Element type: Symbol	Electrical: RCNO NORMALLY OPEN RELAY CONTACT Element type: Symbol	Electrical: RDRKPD CARD READER WITH KEYPAD Element type: Symbol
		
Electrical: RECDER RECORDER Element type: Symbol	Electrical: RECDFM DOUBLEFLUSHMOUNTFLOOROUTLET Element type: Symbol	Electrical: RECDSM DOUBLESURFMOUNTFLOOROUTLET Element type: Symbol
		
Electrical: RECDUP DUPLEX RECEPTACLE Element type: Symbol	Electrical: RECLOS RECLOSER AERIAL AUTOMATIC Element type: Symbol	Electrical: RECPT2 SPECIAL RECEPTACLE Element type: Symbol

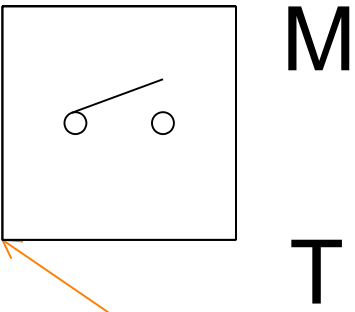
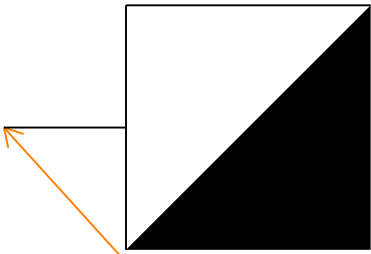
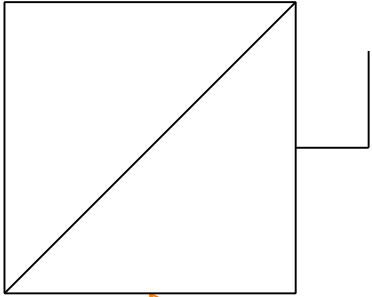
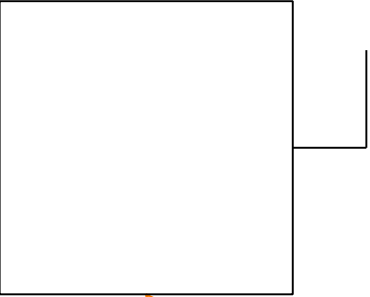
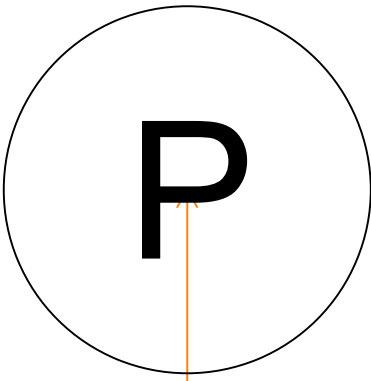
		
Electrical: RECQUA QUADRAPLEX RECEPTACLE Element type: Symbol	Electrical: RECRAN RECEPTACLE RANGE Element type: Symbol	Electrical: RECSDP SWITCHED DUPLEX RECEPTACLE Element type: Symbol
		
Electrical: RECSFM SINGLE FLUSH MOUNT FLR OUTL Element type: Symbol	Electrical: RECSIN SINGLE RECEPTACLE Element type: Symbol	Electrical: RECSNS SNGL RECEPTACLE WITH SWITCH Element type: Symbol
		
Electrical: RECSPR SPECIAL PURPOSE RECEPTACLE Element type: Symbol	Electrical: RECSSM SINGLESURFMOUNTFLOOROUTLET Element type: Symbol	Electrical: REIL REIL LIGHT UNIT Element type: Symbol

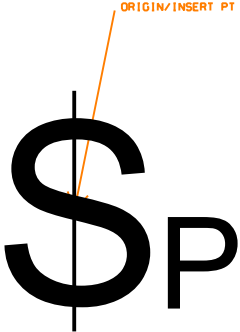
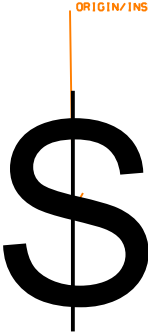
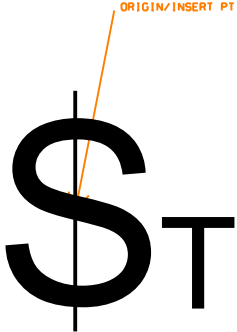
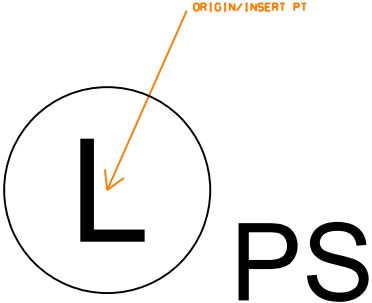
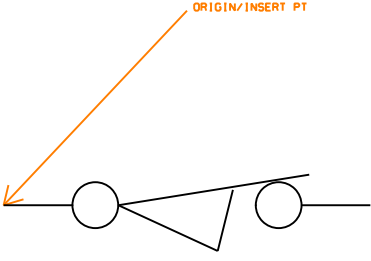
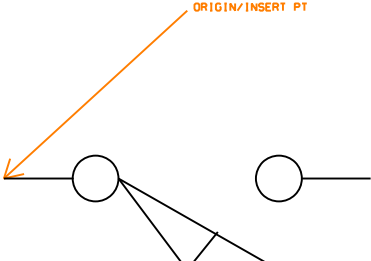
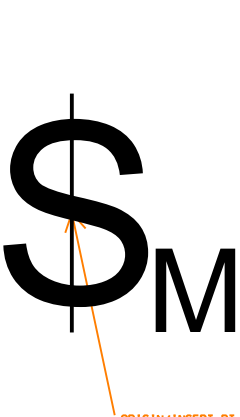
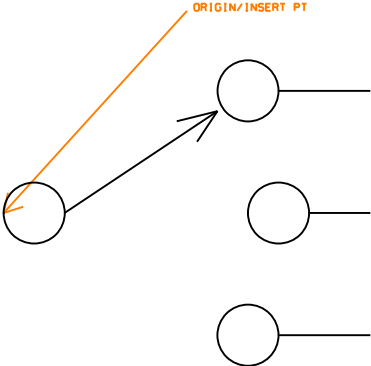
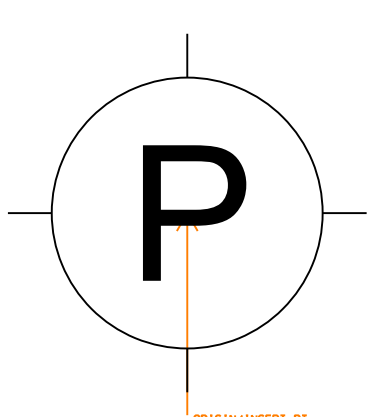
		
Electrical: RELAY RELAY SWITCH Element type: Symbol	Electrical: RELYOP RELAY OP COIL Element type: Symbol	Electrical: RESHTR ELECTRIC RESISTANCE HEATER Element type: Symbol
		
Electrical: RWCLL RW CENTERLINE LIGHT Element type: Symbol	Electrical: RWEL RW END LIGHT Element type: Symbol	Electrical: RWLEL RW EDGE LIGHT ELEVATED Element type: Symbol
		
Electrical: RWLSF RW EDGE LIGHT SEMIFLUSH Element type: Symbol	Electrical: SCRDEV SCREENING DEVICE Element type: Symbol	Electrical: SECSA SECURITY SCREEN WITH ALARM Element type: Symbol

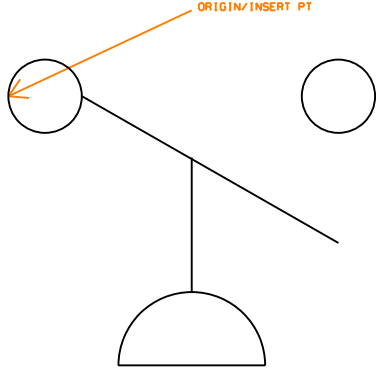
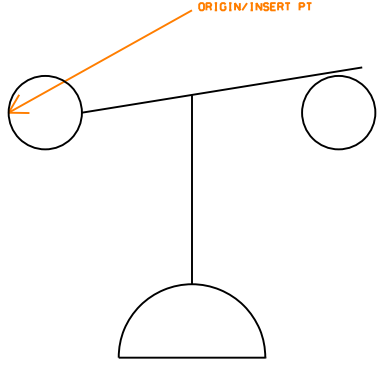
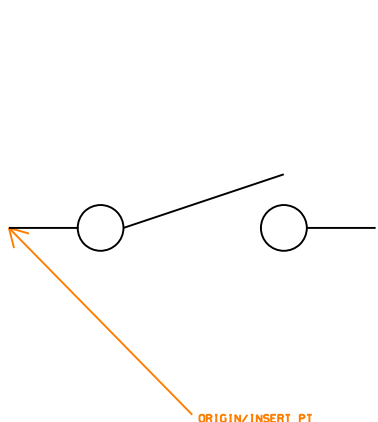
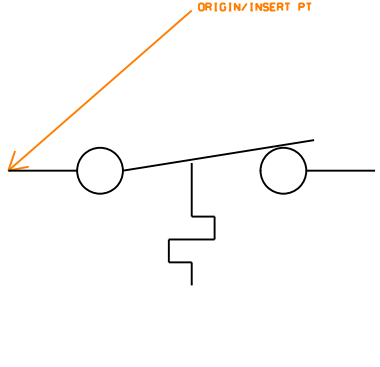
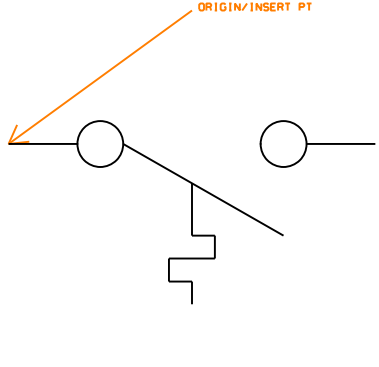
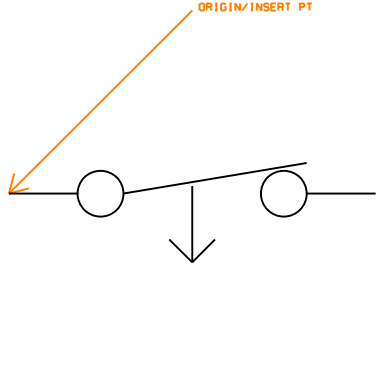
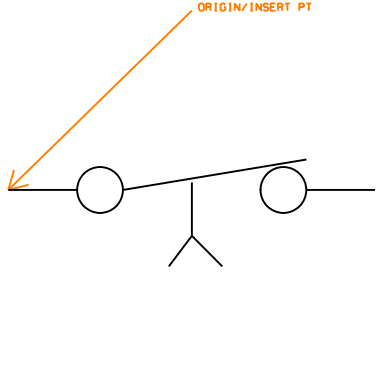
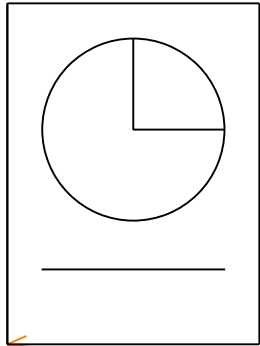
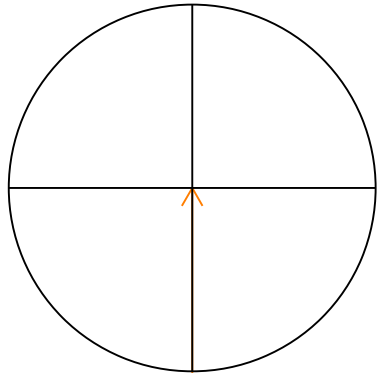
		
Electrical: SECSW SECURITY WINDOW SCREEN Element type: Symbol	Electrical: SECTAA SECTIONALIZER AERIAL AUTO Element type: Symbol	Electrical: SENG GENERIC VOLUMETRIC SENSOR Element type: Symbol
		
Electrical: SENULS ULTRASONIC SENSOR Element type: Symbol	Electrical: SFL SEQUENCED FLASHER LIGHT Element type: Symbol	Electrical: SHREDR DOCUMENT DESTROYER Element type: Symbol
		
Electrical: SLLN STREETLIGHT LUMINAIRE, NEW Element type: Symbol	Electrical: SLLX STREETLIGHT LUMINAIRE, EXISTING Element type: Symbol	Electrical: SLREG CONSTNT CURRENT TRANSFORMER Element type: Symbol

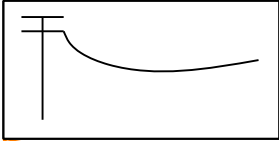
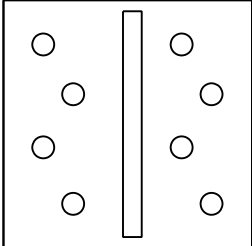
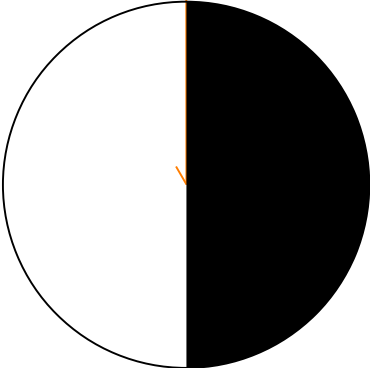
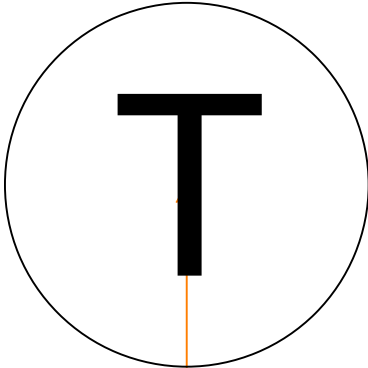
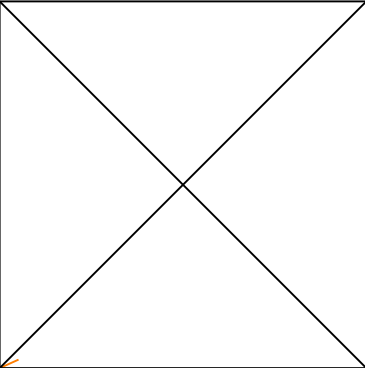
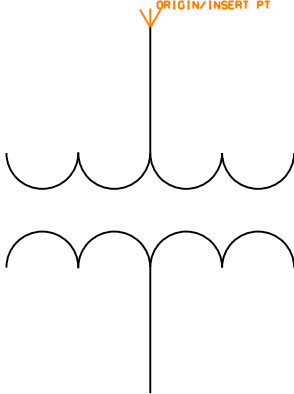
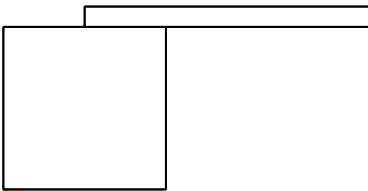
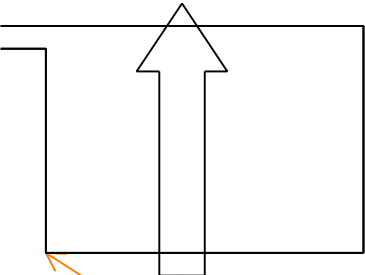
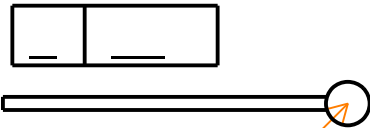
		
Electrical: SOUNDS SOUND SYSTEM INDICATE USE Element type: Symbol	Electrical: STP14 SURFACE REC 1X4 STRP Element type: Symbol	Electrical: STP14B SURFACE 1X4 STRIP BATTERY Element type: Symbol
		
Electrical: STP18 SURFACE REC 1X8 STRP Element type: Symbol	Electrical: STP18B SURFACE 1X8 STRIP BATT Element type: Symbol	Electrical: SUBSTA SUBSTATION Element type: Symbol
		
Electrical: SW3ABC 3 THREE WAY SWITCHES Element type: Symbol	Electrical: SWABC THREE SINGLE SWITCHES Element type: Symbol	Electrical: SWFLNC NORMALLY CLOSED FLOAT SWITCH Element type: Symbol

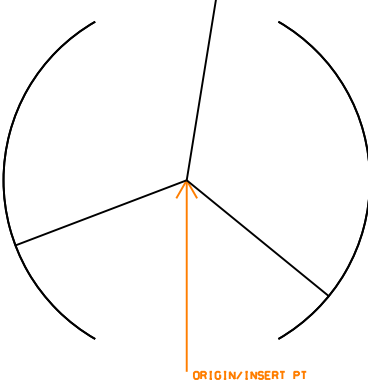
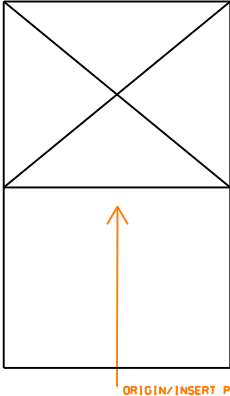
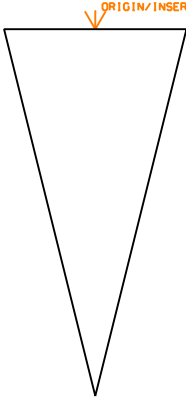
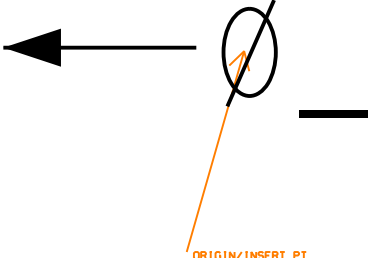
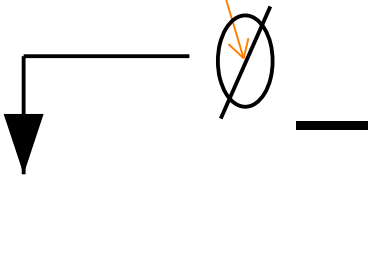
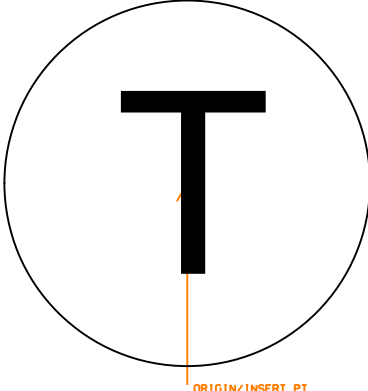
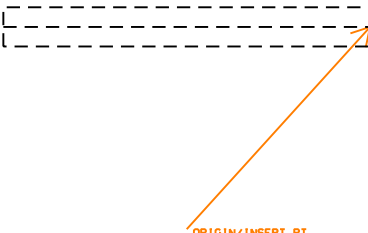
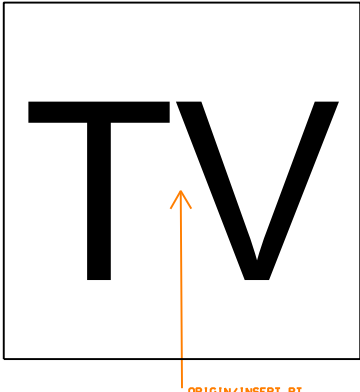
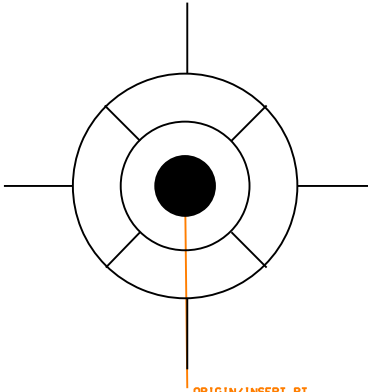
		
Electrical: SWFLNO NORMALLY OPEN FLOAT SWITCH Element type: Symbol	Electrical: SWFNC NORMALLY CLOSED FLOW SWITCH Element type: Symbol	Electrical: SWFNO NORMALLY OPEN FLOW SWITCH Element type: Symbol
		
Electrical: SWFONC NORM CLSD FOOT OPRTD SWITCH Element type: Symbol	Electrical: SWI2WY DOUBLE POLE SWITCH Element type: Symbol	Electrical: SWI3WY THREE WAY SWITCH Element type: Symbol
		
Electrical: SWI4WY FOUR WAY SWITCH Element type: Symbol	Electrical: SWICB CIRCUIT BREAKER Element type: Symbol	Electrical: SWICHA AUTOMATIC MONITORING SWITCH Element type: Symbol

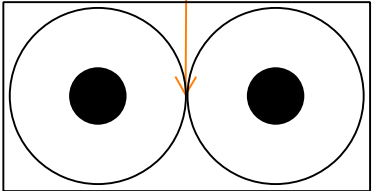
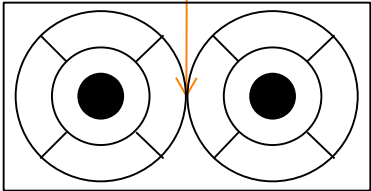
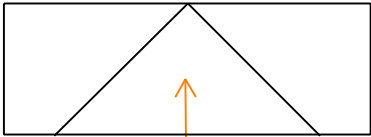
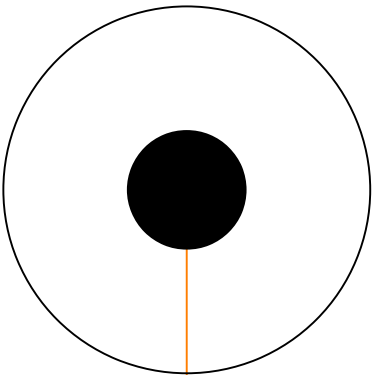
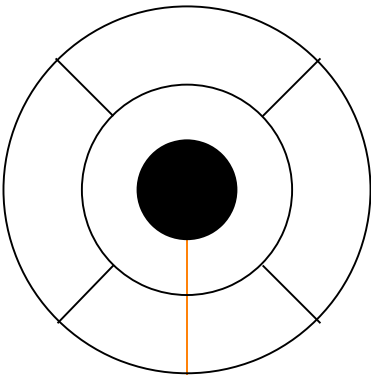
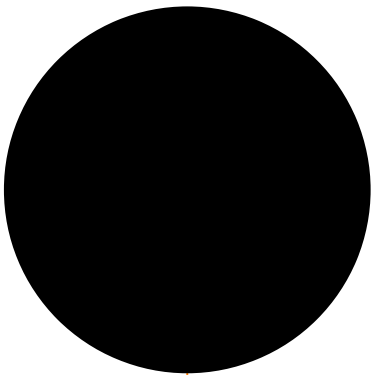
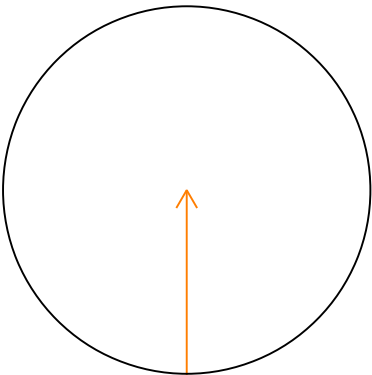
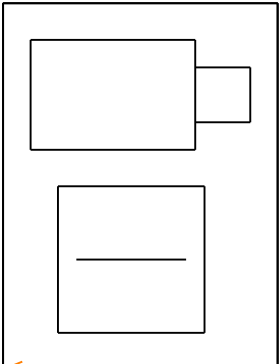
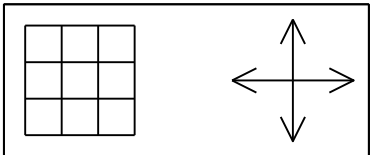
		
Electrical: SWICHM MANUALLY OPERATED SWITCH Element type: Symbol	Electrical: SWIDM1 DIMMER Element type: Symbol	Electrical: SWIDM2 DIMMER SWITCH Element type: Symbol
		
Electrical: SWIDSF DISCONNECT SWITCH, FUSED Element type: Symbol	Electrical: SWIDSU DISCONNECT SWITCH, UNFUSED Element type: Symbol	Electrical: SWIDUR DURESS SWITCH Element type: Symbol
		
Electrical: SWIFUS FUSED SWITCH Element type: Symbol	Electrical: SWIKEY KEY OPERATED SWITCH Element type: Symbol	Electrical: SWILVM LOW VOLTAGE MASTER SWITCH Element type: Symbol

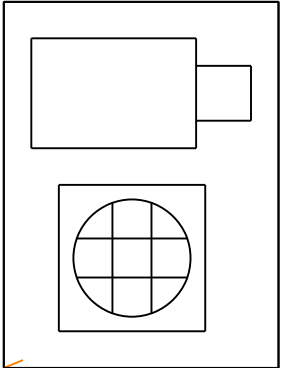
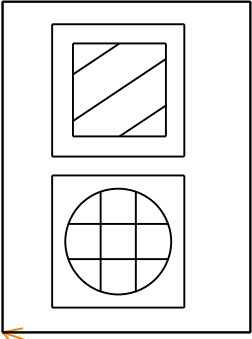
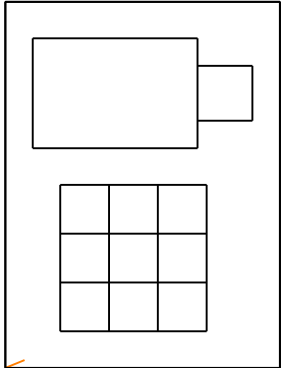
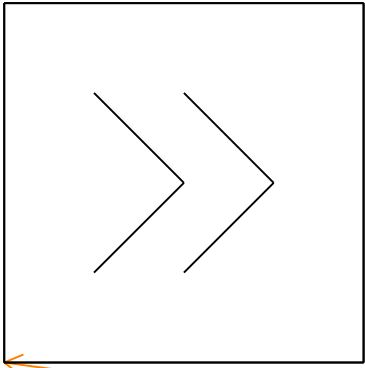
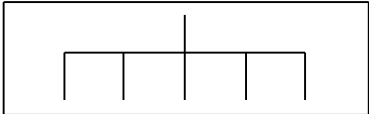
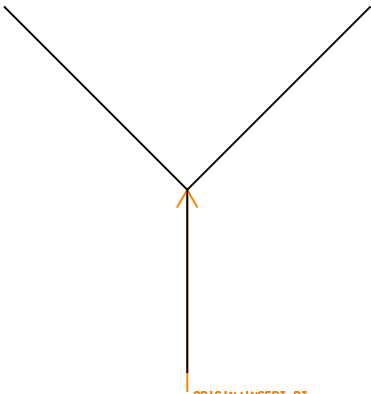
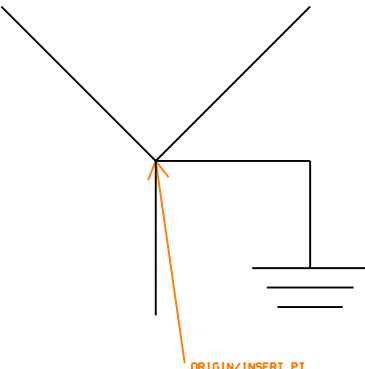
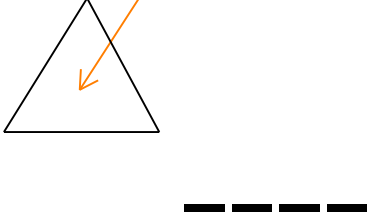
		
Electrical: SWIPLT SWITCH W/PILOT LIGHT Element type: Symbol	Electrical: SWITCH SINGLE POLE SWITCH Element type: Symbol	Electrical: SWITIM TIMER OPERATED SWITCH Element type: Symbol
		
Electrical: SWLAMP LAMP HOLDER POLE SWITCH Element type: Symbol	Electrical: SWLNC NORMALLY CLOSED LIMIT SWITCH Element type: Symbol	Electrical: SWLNO NORMALLY OPEN LIMIT SWITCH Element type: Symbol
		
Electrical: SWMOTR MOTOR SWITCH Element type: Symbol	Electrical: SWMULT MULTIPOSITION SWITCH Element type: Symbol	Electrical: SWPCM CEILING MOUNTED PULL SWITCH Element type: Symbol

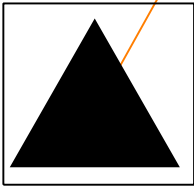
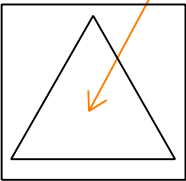
		
Electrical: SWPCOI PRES SWCH CLSE ON INCREASE Element type: Symbol	Electrical: SWPOOI PRESS SWCH OPN ON INCREASE Element type: Symbol	Electrical: SWSBRK SINGLE BREAK SWITCH Element type: Symbol
		
Electrical: SWTANC NORMCLSDTEMPACTIVATEDSWCH Element type: Symbol	Electrical: SWTANO NORMOPNTEMPACTIVATEDSWCH Element type: Symbol	Electrical: SWTDNC NORM CLSD TIME DELAY SWITCH Element type: Symbol
		
Electrical: SWTDNO NORM OPEN TIME DELAY SWITCH Element type: Symbol	Electrical: TARDR CARD READER w/TIME AND ATTENDANCE Element type: Symbol	Electrical: TDZL TOUCHDOWN ZONE LIGHT Element type: Symbol

 M T	 T	
Electrical: TELEDL TELEPHONE DIALER Element type: Symbol	Electrical: THINGE POWER TRANSFER HINGE Element type: Symbol	Electrical: THL THRESHOLD LIGHT Element type: Symbol
		
Electrical: TMANH TELEPHONE MANHOLE Element type: Symbol	Electrical: TOWER TRANSMISSION TOWER Element type: Symbol	Electrical: TRANSF TRANSFORMER, CURRENT Element type: Symbol
		
Electrical: TRFARM TRAFFIC ARM Element type: Symbol	Electrical: TRFCLP VEHICLE LOOP DETECTOR Element type: Symbol	Electrical: TRFSIG TRAFFIC SIGNAL MAST ARM Element type: Symbol

		
Electrical: TRNSTL TURNSTILE Element type: Symbol	Electrical: TSCTRL TR SIGNAL CONTROLLER Element type: Symbol	Electrical: TSHEAD TRAFFIC SIGNAL HEAD Element type: Symbol
		
Electrical: TSPHS TR SIGNAL PH NO THRU Element type: Symbol	Electrical: TSPHT TR SIGNAL PH NO TURN Element type: Symbol	Electrical: TSTAT THERMOSTAT Element type: Symbol
		
Electrical: TSVLDT TR SIGNAL VEH LOOP DETECTOR Element type: Symbol	Electrical: TVOUT TELEVISION OUTLET Element type: Symbol	Electrical: TWCLL TW CENTERLINE LIGHT Element type: Symbol

		
Electrical: TWLEL TW END LIGHT_ELEVATED Element type: Symbol	Electrical: TWLSF TW END LIGHT_SEMIFLUSH Element type: Symbol	Electrical: TWGSGN TW GUIDANCE SIGN Element type: Symbol
		
Electrical: TWLEL TW EDGE LIGHT_ELEVATED Element type: Symbol	Electrical: TWLSF TW EDGE LIGHT_SEMIFLUSH Element type: Symbol	Electrical: UTPLN POLE_NEW Element type: Symbol
		
Electrical: UTPLX POLE_EXISTING Element type: Symbol	Electrical: VIDCR CAMERA W/CARD READER Element type: Symbol	Electrical: VIDCTL VIDEO CONTROL KEYBOARD Element type: Symbol

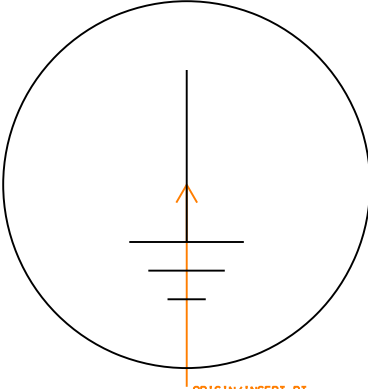
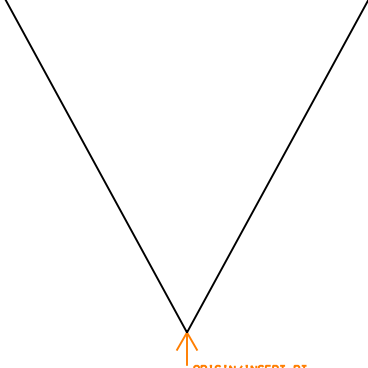
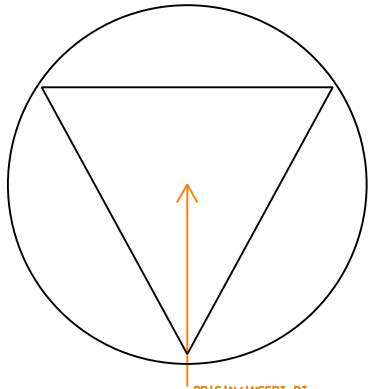
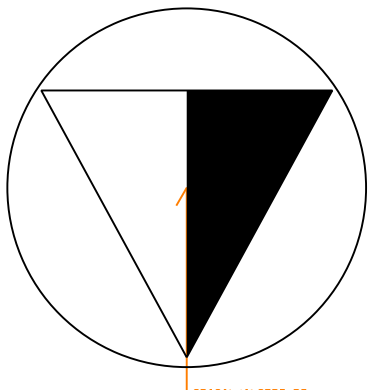
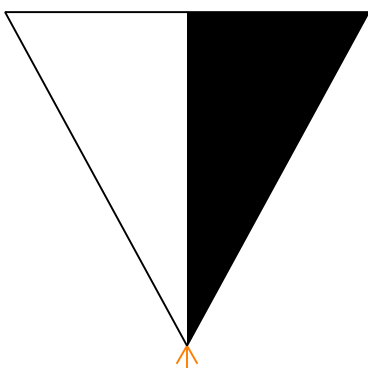
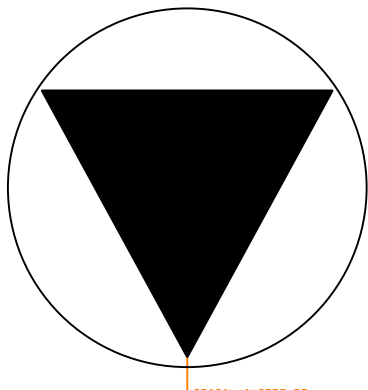
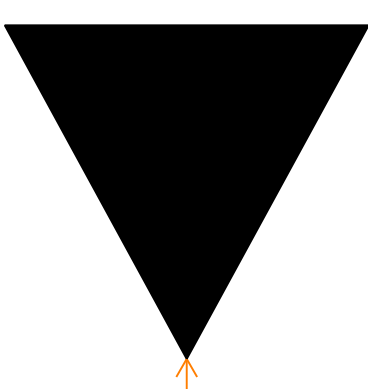
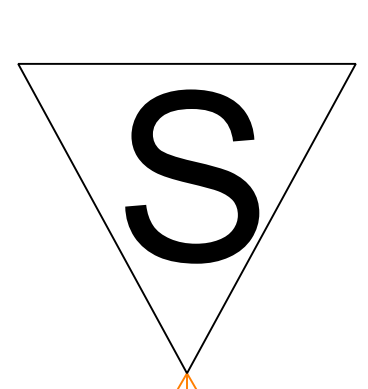
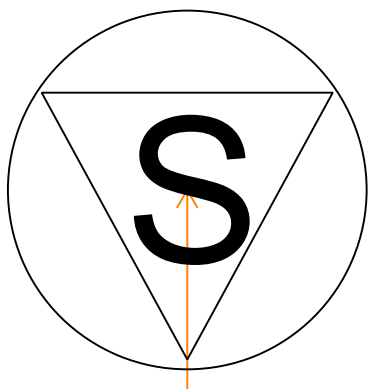
		
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Electrical: VIDMTN VIDEO MOTION DETECTOR Element type: Symbol	Electrical: VIDMUX VIDEO MULTIPLEXER Element type: Symbol	Electrical: WYECON XFMR WYE CONNECTION Element type: Symbol
		
Electrical: WYEXGC XFMR GROUNDED CONNECTION Element type: Symbol	Electrical: XFRPLN XFMR_POLE_NEW Element type: Symbol	Electrical: XFRPLX XFMR_POLE_EXIST Element type: Symbol

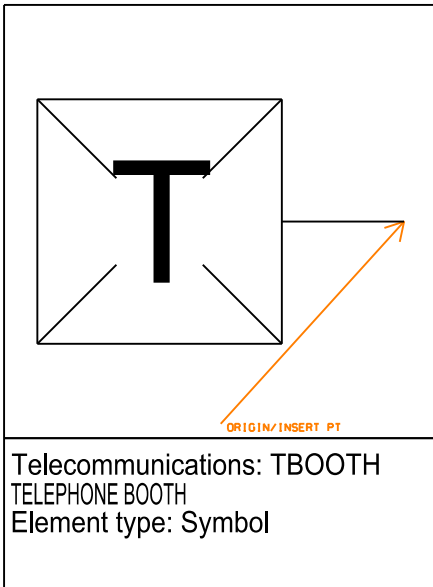
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Electrical: XFRPMN XFMR_PAD_NEW Element type: Symbol	Electrical: XFRPMX XFMR_PAD_EXIST Element type: Symbol

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16 Telecommunications Symbols Library

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Telecommunications: GRDROD GROUNDING ROD Element type: Symbol	Telecommunications: RECDC DATACOMM RECEPTACLE Element type: Symbol	Telecommunications: RECDCF DATACOMM FLOOR RECEPTACLE Element type: Symbol
		
Telecommunications: RECTDF TELEPHONE/DATA FLOOR RECEPTACLE Element type: Symbol	Telecommunications: RECTDW TELEPHONE/DATA RECEPTACLE Element type: Symbol	Telecommunications: RECTEF TELEPHONE FLOOR RECEPTACLE Element type: Symbol
		
Telecommunications: RECTEL TELEPHONE RECEPTACLE Element type: Symbol	Telecommunications: SIPR SIPRNet RECEPTACLE Element type: Symbol	Telecommunications: SIPRF SIPRNet FLOOR RECEPTACLE Element type: Symbol



REPORT DOCUMENTATION PAGE				Form Approved OMB No. 0704-0188	
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14. ABSTRACT The A/E/C CAD Standard has been developed by the CAD/BIM Technology Center (Center) for Facilities, Infrastructure, and Environment to eliminate redundant Computer-Aided Design (CAD) standardization efforts within the Department of Defense (DoD) and the Federal Government. The manual is part of an initiative to develop a nonproprietary CAD standard that incorporates existing industry, national, and international standards and to develop data standards that address the entire life cycle of facilities within the DoD. The CAD drafting standards addressed in the A/E/C CAD standard include presentation graphics, level/layer assignments, electronic file naming, and standard symbology. The Center's primary goal is to develop a CAD standard that is generic enough to operate under various CAD software packages (such as Bentley's MicroStation and Autodesk's AutoCAD) and incorporate existing industry standards when possible.					
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