

CHAPTER 5. AIRPORT DATA FEATURES

The following paragraphs list the airport feature descriptions defining the specifications for each feature group and class. Utilize the specifications defined to ensure the data delivered is accurate and meets standards. Each feature is described by geometry type, feature group, information assurance level, requirements, positional accuracy, data capture rule, and the attributes required to provide the data to the FAA.

5.1. FEATURE DOCUMENTATION MINIMUMS

In addition to the general feature documentation outlined in paragraphs [1.5.2](#) and [1.5.3](#), certain features require additional or expanded documentation. Where required for a feature, the additional requirements are identified in the Documentation and Submission section of the feature description.

5.2. MULTIPLE INSTANCES OF FEATURES

5.3. FEATURE CLASS DESCRIPTION LEGEND

The following table identifies how each feature description is setup and provides information on what is contained within the section.

5.3.1. Paragraph Number and FeatureClassName

Definition: <i>Definition of feature.</i>				
Feature Group	<i>The Feature Group of the element.</i>			
Feature Class Name	<i>The proper name of the Feature Class.</i>			
Feature Type	<i>The compliant geometry of element.</i>			
CADD Standard Requirements				
Layer/Level	Description			
<i>Compliant layer name.</i>	<i>Compliant layer description. [Siting]</i>			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	<i>Color code AutoCAD</i>	<i>Line type required</i>	<i>Line weight AutoCAD</i>	<i>Symbol type is user defined</i>
MicroStation Standards	<i>Color code MicroStation</i>		<i>Line weight MicroStation</i>	
Information Assurance Level	<i>Security level credential</i>			
Equivalent Standards	AIXM	<i>AIXM equivalent of feature.</i>		
	FGDC	<i>FGDC equivalent of feature.</i>		
	SDSFIE	<i>SDSFIE equivalent of feature.</i>		
Documentation and Submission Requirements	The required documentation for feature class elements. Minimum requirements are defined in paragraphs 1.5.2 and 1.5.3 . Additional or expanded documentation requirements are located here.			
Related Features				
Data Capture Rules:	<i>Description of proper collection limits and requirements for feature class element.</i>			
Monumentation	<i>Monumentation requirements.</i>			
Survey Point Location	Horizontal		Vertical	
	<i>Description of specific HSP location.</i>		<i>Description of specific VSP location.</i>	

Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	<i>Accuracy requirement</i>	<i>Accuracy requirement</i>	<i>Accuracy requirement</i>
Resolution	Geographic Coordinates	Distances and Elevations	
	<i>Coordinate resolution requirement</i>	<i>Coordinate resolution requirement</i>	
Feature Attributes			
Attribute (Datatype)	Description		
<i>Name of attribute field</i>	<i>Description of attribute specifications</i>		

5.4. Group: AIRFIELD

5.4.1. Aircraft Gate Stand

Definition: Geographic position of painted stand positions on the stand guidance line usually marked by a yellow crossbar according to aircraft type (e.g., for B-747, A-340).				
Feature Group	Airfield			
Feature Class Name	AircraftGateStand			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-APRN-ACPK	Aircraft gate/stand parking area			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1 MM	User Defined
MicroStation Standards	5			
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>ApronElement</i>		Core
	FGDC	<i>AircraftGateStand</i>		
	SDSFIE	<i>airfield_surface_site</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			

Related Features			
<p>Data Capture Rules: <i>Collect the aircraft gate stand as individual points with a separate feature for each defined location. If a generic location is defined, ensure the length and wingspan attributes cover all the appropriate aircraft expected to use the location.</i></p>			
 <p>The image shows an aerial view of an airport tarmac. A yellow circle is placed on the ground. An arrow points from a white box labeled 'Aircraft Gate Stand' to a specific structure on the tarmac.</p>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	N/A	N/A	
Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 3 ft	± 5 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2(50))		The name of the feature.	
description (String 255)		Description of the feature.	
gateStandType (Enumeration: codeGateStandType)		The type of aircraft gate/stand.	
Status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
wingspan (Number)		The quantity representing the maximum wingspan which can be accommodated at the aircraft gate stand.	
length (Number)		The overall length of the aircraft gate stand.	
width (Number)		The overall width of the aircraft gate stand.	
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
pavementClassificationNumber		A number which expresses the relative load carrying capacity of a pavement in terms of a standard single wheel load. [Source: AC 150/5335-5]	

jetwayAvailability (boolean)	Indicates if a jetway or passenger loading bridge is available for use at the designated location.
towingAvailability (boolean)	Indicates if towing is available at the designated location.
dockingAvailability (boolean)	Indicates if docking light system is available at the designated location.
groundPowerAvailability (boolean)	Indicates the availability of ground power at the designated location.
surfaceType (Enumeration: codeSurfaceType)	A classification of airfield pavement surfaces for Airport Obstruction Charts [Source: NGS]
surfaceCondition (Enumeration: codeSurfaceCondition)	A description of the serviceability of the pavement [Source: NFDC]
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.4.2. Aircraft Non Movement Area

Definition: Taxiways and apron (ramp) areas not under the control of air traffic.				
Feature Group	Airfield			
Feature Class Name	AircraftNonMovementArea			
Feature Type	Line			
CADD Standard Requirements				
Layer/Level	Description			
C-APRN-ANOM-	Aircraft non-movement area			
C-AIRF-DSRF-NMOV	Aircraft non-movement area			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	7	Continuous	1 MM	User Defined
MicroStation Standards	0			
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>NonMovementArea</i>		Core
	FGDC	<i>AircraftNonMovementArea</i>		
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	None			

Related Features				
<p>Data Capture Rules: <i>The non-movement area is an area where aircraft are not under the direct control of Air Traffic Control and are responsible for their own separation from aircraft, vehicles and objects. Two parallel yellow lines located side by side delineate the area. One line is dashed and the other is solid. The dashed side is the movement area and the solid side is the non-movement area. Compile this line as a single line drawn mid-way between the solid and dashed lines. If using symbolized line note direction of line in data capture to ensure solid side of line is on Non-movement area.</i></p> 				
Aircraft non-movement area boundary line.				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)			Description	
name (VARCHAR2(50))			The name of the feature.	
description (String 255)			Description of the feature.	
status (Enumeration: codeStatus)			A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
userFlag (String 254)			An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Number(2))			Discriminator used to tie features of a plan or proposal together into a version.	

5.4.3. Air Operations Area

<p>Definition: Air Operations Area is where security measures are enforced as specified in the airport security program. This area includes aircraft movement areas, aircraft parking areas, loading ramps, and safety areas and any adjacent areas (such as general aviation areas) not separated by adequate security systems, measures, or procedures. [Source: 49 CFR Part 1542, Airport Security]</p>	
Feature Group	Airfield
Feature Class Name	AirOperationsArea
Feature Type	Polygon
CADD Standard Requirements	
Layer/Level	Description
C-AIRF-AHOA-	Air Operations Area

	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1 MM	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	AirOperationsArea		Extension
	FGDC	AirOperationsArea		
	SDSFIE	None		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect a closed polygon to the greatest horizontal extents as defined by the airport security plan.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2(50))		The name of the feature.		
description (String 255)		Description of the feature		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.4.4. Airfield Light

Definition: Any lighting located within or near an airport boundary that provides guidance for airborne and ground maneuvering of aircraft [Source: AIM, AC 150/5345 Series of ACs]			
Feature Group	Airfield		
Feature Class Name	AirfieldLight		
Feature Type	Point		
CADD Standard Requirements			
Layer/Level	Description	Layer/Level	Description
E-LITE-APPR-	Approach lights	V-LITE-RUNW-	Runway lights
E-LITE-DIST-	Distance and arresting gear markers and lights	V-LITE-TAXI-	Taxiway lights
E-LITE-LANE-	Hoverlane, taxilane, and helipad lights	V-LITE-THRS-	Threshold lights
E-LITE-OBST-	Obstruction lights	V-LITE-RUNW-TDZN	Runway Touchdown Zone lights

E-LITE-RUNW-EDGE	Runway edge lights	V-LITE-RUNW-CNTL	Runway Centerline lights	
E-LITE-SIGN-	Taxiway guidance signs	E-LITE-RUNW-TDZN	Runway Touchdown Zone lights	
E-LITE-TAXI-CNTL	Taxiway centerline lights	E-LITE-RUNW-CNTR	Runway Centerline lights	
E-LITE-THRS-	Threshold lights	E-LITE-RUNW-DTGS1	Runway Distance to go lights	
V-LITE-APPR-	Approach lights	E-LITE-TAXI-EDGE	Taxiway edge lights	
V-LITE-LANE-	Hoverlane, taxilane, and helipad lights	E-LITE-RNWX-GARD	Runway guard lights	
V-LITE-OBST-	Obstruction lights			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Point	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>LightElementExtension</i>		Extension
	FGDC	<i>AirfieldLight</i>		Extension
	SDSFIE	<i>airfield_light_point</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect a point in the center of the object at the highest point. Other lights on the airfield such as apron lights, roof mounted lights etc. used for general illumination should be captured using the feature type UtilityPoint and delineated using the attribute codeUtilityType.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2(50))		Use this attribute to identify the use of the light such as Runway Edge Light, Taxiway Edge Light, Taxiway Centerline Light, etc.		
description (String 255)		Description of the feature		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
lightingType (Enumeration: codeLightingConfigurationType)		A description of the lighting system. Lighting system classifications are Approach; Airport; Runway; Taxiway; and Obstruction		
color (Enumeration: codeColor)		The color of the airfield light.		
luminescence (Integer)		The luminescence of the airfield light specified in candellas (cd).		

pilotControlFrequency (Real)	The radio frequency used by pilots to control various airport lighting systems
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.4.5. ArrestingGear

Definition: Location of the arresting gear cable across the runway [Source: RTCA DO-272]				
Feature Group	Airfield			
Feature Class Name	ArrestingGear			
Feature Type	Line			
CADD Standard Requirements				
Layer/Level	Description			
C-RUNW-ARST-	Runway Arresting Gear Location			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>ArrestingGear</i>		Core
	FGDC	<i>ArrestingGear</i>		
	SDSFIE	<i>airfield_linear_safety_feature_line</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect the arresting gear location as individual line objects, connecting the two fixed points of the arresting gear cable on each side of the runway.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2(50))		The name of the feature.		
description (String 255)		Description of the feature		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
airportFacilityType (Enumeration: codeOperationsType)		Type of airfield.		

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
owner (Enumeration: codeOwner)	Owner of the facility.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.4.6. Frequency Area

Definition: Area specifying the designated part of the surface movement area where a specific frequency is required by ATC or ground control. If there is only one frequency area for the airport, the polygon must cover the total air operations area. [Source: RTCA DO-272]				
Feature Group	Airfield			
Feature Class Name	FrequencyArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-AIRF-FREQ-	Frequency Area			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>Frequency</i>		Core
	FGDC	<i>FrequencyArea</i>		
	SDSFIE	<i>communications_groundwave_polygon_area</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>Collect a closed polygon to its greatest extents.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2(50))	The name of the feature.			
description (String 255)	Description of the feature			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
station (String 30)	Service or Station assigned to primary frequency (e.g., ATC Tower, Ground Control) [Source: RTCA DO-272]			
frequency (Real)	Primary frequency used on frequency area (in MHZ). [Source: RTCA DO-272]			

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.4.7. Passenger Loading Bridge

Definition: A bridge for loading/unloading access to airplanes for passengers and crew.				
Feature Group	Airfield			
Feature Class Name	PassengerLoadingBridge			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-AIRF-JETB-	Airport Jetbridge			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>PassengerLoadingBridge</i>		Core
	FGDC	<i>PassengerLoadingBridge</i>		
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>Outline of the boarding Bridge with the vertical on the top of the bridge.</i>				
				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	

Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 3 ft	± 5 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2(50))	Name, code or identifier used to identify the loading bridge.		
description (String 255)	Description of the feature		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
loadingBridgeType (Enumeration: CodeLoadingBridgeType)	Code indicating the type of loading bridge.		
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.		

5.4.8. Runway Centerline

Definition: Continuous line along the painted centerline of a runway connecting the middle-points of the two outermost thresholds. Centerline is composed of many centerline points (see RunwayControlPoint). It is used to calculate grade and line-of-sight criteria. [Source: AC 150/5300-13]				
Feature Group	Airfield			
Feature Class Name	RunwayCenterline			
Feature Type	Line			
CADD Standard Requirements				
Layer/Level	Description			
C-RUNW-CNTR-	Runway Centerline			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	7	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>RunwayMarking</i>		Core
	FGDC	<i>RunwayCenterline</i>		
	SDSFIE	<i>airfield_surface_centerline</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: Determine the runway centerline as a continuous line along the centerline of the runway connecting the two runway end points.				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal	Vertical		
	N/A	N/A		

Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 1 ft	± 0.25 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Thousandth of arc second	Nearest tenth of a foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2(50))	The name of the feature.		
runwayDesignator (String 7)	Designator of the runway based on the magnetic bearing and position in relation to parallel runways (e.g. 33R/15L) [Source: AC 150/5340-1]		
description (String 255)	Description of the feature		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
isDerived (Boolean)	Indicates whether the centerline is derived or photo determined.		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.		

5.4.9. Runway Helipad Design Surface

Definition: A three-dimensional surface used in runway or heliport/helipad design [Source: AC 150/5300-13]				
Feature Group	Airfield			
Feature Class Name	RunwayHelipadDesignSurface			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-AIRF-DSRF-BLDR-	Building Restriction Line			
C-AIRF-DSRF-RSA-	Runway Safety Area			
C-AIRF-DSRF-RPZ-	Runway Protection Zone			
C-AIRF-DSRF-OFA-	Object Free Area			
C-AIRF-DSRF-OFZ-	Object Free Zone			
C-AIRF-DSRF-POFA-	Precision Object Free Area			
C-AIRF-DSRF-KEYH-	Key holes			
C-RUNW-CLRW-	Runway clearway			
C-HELI-DSRF-	Helipad design surface			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>RunwayFATODesignSurface</i>		Extension
	FGDC	<i>RunwayHelipadDesignSurface</i>		Extension
	SDSFIE	<i>airfield_imaginary_surface_area</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				

Data Capture Rules: N/A			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	N/A	N/A	
Accuracy Requirements (in feet)	Horizontal	Vertical	
	N/A	Orthometric	Ellipsoidal
		N/A	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Tenth of a foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2(50))	The name of the feature. [Source: SDSFIE Feature Table]		
description (String 255)	Description of the feature		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
designSurfaceType (Enumeration: codeDesignSurfaceType)	A description of the design surface		
zoneUse (String 50)	A description of the use of the zone.		
determination (String 255)	A formal declaration of the runway/helipad/heliport safety area condition with respect to standards and any requirement improvements [Source: FAA Order 5200.8 and AC 150/5390-2]		
determinationDate (Date)	The date the safety area determination was approved [Source: FAA Order 5200.8 and AC 150/5390-2B]		
zoneInnerWidth (Real)	The width of the narrow end of a trapezoidal shaped DesignSurface feature. This is normally the end that is closest to the landing surface [Source: AC 150/5300-13 and 150/5390-2B]		
zoneOuterWidth (Real)	The width of the wide end of a trapezoidal shaped DesignSurface feature. This is normally the end that is furthest from the landing surface.		
zoneLength (Real)	The length of a trapezoidal shaped DesignSurface feature.		
slope (Real)	The low to high gradient within the airspace.		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.		

5.4.10. Runway Intersection

Definition: The area of intersection between two or more runways [Source: RTCA DO-272]	
Feature Group	Airfield
Feature Class Name	RunwayIntersection
Feature Type	Polygon
CADD Standard Requirements	
Layer/Level	Description
C-RUNW-INTS	Runway intersection

	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>RunwayElement</i>		Core
	FGDC	<i>RunwayElement</i>		
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
<p>Data Capture Rules: <i>When two or more runways intersect, collect the area of overlap as an individual runway intersection polygon attached to the corresponding runway polygon(s) by way of shared lines. Define the polygon by the outer edge of the white runway edge marking or surface edge if no marking is present.</i></p> <p>The diagram illustrates a runway intersection. A horizontal runway (Runway 6) intersects with a diagonal runway (Runway 32). The intersection area is highlighted with a red outline. Labels include: STOPWAY (yellow and black chevron markings), THRESHOLD BAR (black bar with white chevrons), RUNWAY INTERSECTION (the overlapping area), RUNWAY LABEL (numbers 6, 27, 14, 32), and RUNWAY CENTERLINE (dashed lines).</p> <p>A second diagram shows a similar runway intersection but with a grid pattern in the intersection area, indicating a specific data capture or modeling approach. Labels include: RUNWAY INTERSECTION and RUNWAY CENTERLINE.</p>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Tenth of a foot	

Feature Attributes	
Attribute (Datatype)	Description
name (VARCHAR2(50))	The name of the feature.
description (String 255)	Description of the feature
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
runwayDesignator1 (String 7)	Designator of the 1st intersecting runway based on the magnetic bearing and position in relation to parallel runways (e.g. 33R/15L).
runwayDesignator2 (String 7)	Designator of the 2nd intersecting runway based on the magnetic bearing and position in relation to parallel runways (e.g. 33R/15L).
runwayDesignator3 (String 7)	Designator of the 3rd intersecting runway based on the magnetic bearing and position in relation to parallel runways (e.g. 33R/15L).
pavementClassificationNumber	A number which expresses the relative load carrying capacity of a pavement in terms of a standard single wheel load. [Source: AC 150/5335-5]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.4.11. Runway LAHSO

Definition: Markings installed on a runway where an aircraft is to stop when the runway is normally used as a taxiway or used for Land and Hold Short Operations (LAHSO) as identified in a letter of agreement with the Air Traffic Control Tower (ATCT). A runway should be considered as normally used for taxiing if there is no parallel taxiway and no ATCT. Otherwise, seek input from ATCT. [Source: Order 7110.118]				
Feature Group	Airfield			
Feature Class Name	RunwayLAHSO			
Feature Type	Line			
CADD Standard Requirements				
Layer/Level	Description			
C-RUNW-LAHS-	Runway land and hold short area			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>RunwayMarking</i>		Core
	FGDC	<i>RunwayLAHSO</i>		
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				

Data Capture Rules: *Collect the LAHSO line as individual line objects delineated by the outer edge of the second painted line farthest from the intersecting runway.*



Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	N/A	N/A	
Accuracy Requirements (in feet)	Horizontal	Vertical	
	± 3 ft	Orthometric	Ellipsoidal
		± 5 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Tenth of a foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2(50))	The name of the feature.		
description (String 255)	Description of the feature		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
protectedRunwayDesignator (String 7)	Unique runway identifier for the airport of the runway, if any, being protected by the LAHSO (when the LAHSO precedes a runway intersection). Example 17L/35R.		
markingFeatureType (Enumeration: codeMarkingFeatureType)	The type of the marking		
color (Enumeration: codeColor)	The color of the marking		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.		

5.4.12. Runway Element

Definition: A section of the runway surface. The runway surface can be defined by a set of non-overlapping RunwaySegment polygons for pavement management purposes. RunwayElements may overlap Runway and RunwayIntersection features. Use RunwayElement to model the physical runway pavement in terms of surface, material, strength and condition in greater detail than just as a single piece of pavement. [Source: AC 150/5335-5, AC 150/5320-12, AC 150/5320-17, AC 150/5320-6]

Feature Group	Airfield
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Feature Class Name	RunwayElement		
Feature Type	Polygon		
CADD Standard Requirements			
Layer/Level	Description		
C-RUNW-SEGM-	Runway Element		
	Color	Linetype	Line Weight
AutoDesk Standards	3	Continuous	1 MM
MicroStation Standards	2		7
Information Assurance Level	None		
Equivalent Standards	AIXM	<i>RunwayElementExtension</i>	
	FGDC	<i>RunwayElement</i>	
	SDSFIE	<i>None</i>	
Documentation and Submission Requirements	No documentation is required for this feature.		
Related Features			
Data Capture Rules:	<i>Collect runway elements as individual polygon objects. Where two or more runways intersect, identify, classify and report runway elements in the intersecting area only once.</i>		
Monumentation	No monumentation required.		
Survey Point Location	Horizontal		Vertical
	N/A		N/A
Accuracy Requirements (in feet)	Horizontal		Vertical
	± 3 ft		Orthometric
			Ellipsoidal
± 5 ft		N/A	
Resolution	Geographic Coordinates		Distances and Elevations
	Hundredth of arc second		Tenth of a foot
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2(50))	The name of the feature.		
description (String 255)	Description of the feature		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
runwayDesignator (String 7)	Specify runway designator.		
surfaceType (Enumeration: codeSurfaceType)	A classification of airfield pavement surfaces for Airport Obstruction Charts [Source: NGS]		
surfaceMaterial (Enumeration: CodeSurfaceMaterial)	A code indicating the composition of the related surface [Source: NFDC]		
pavementClassificationNumber	A number which expresses the relative load carrying capacity of a pavement in terms of a standard single wheel load. [Source: AC 150/5335-5]		
surfaceCondition (Enumeration: codeSurfaceCondition)	A description of the serviceability of the pavement [Source: NFDC]		
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.		

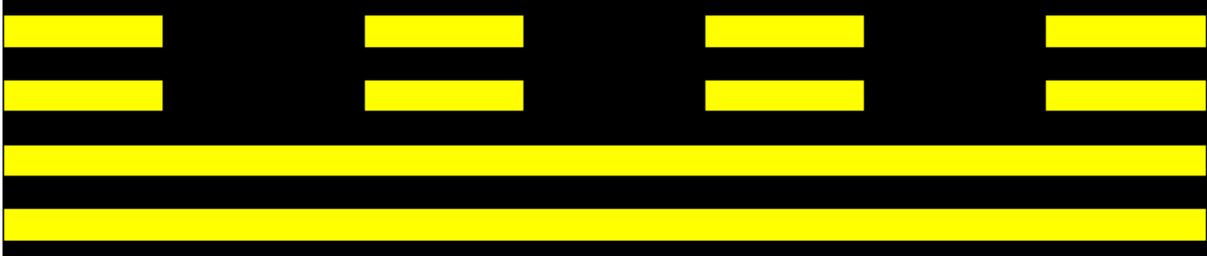
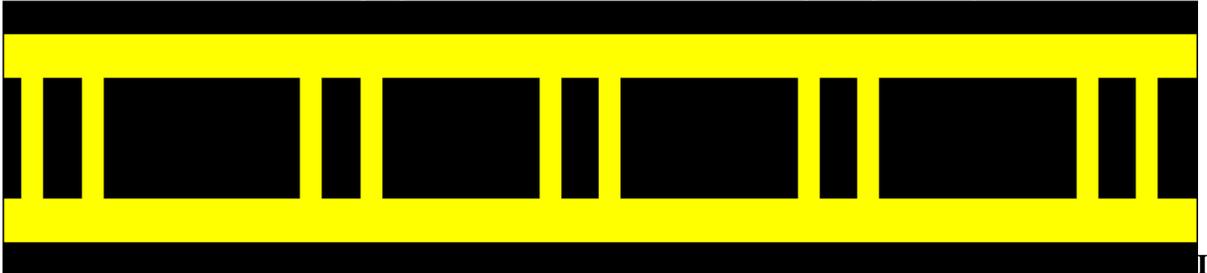
5.4.13. Stopway

Definition: An area beyond the takeoff runway, no less wide than the runway and centered upon the extended centerline of the runway, able to support the airplane during an aborted takeoff without causing structural damage to the airplane. It is designated by the airport authorities for use in decelerating the airplane during an aborted takeoff.				
Feature Group	Airfield			
Feature Class Name	Stopway			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-RUNW-STWY-	Runway stopway markings			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	Stopway		Extension
	FGDC	Stopway		Extension
	SDSFIE	None		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>Collect a closed polygon encompassing the entire area designated as stopway and connect it to associated runway by means of a shared line. Stopways do not have shoulders and can be wider than the associated runway. Pay special attention to the guidance on Runway end, Stopway end, and Displaced Threshold Identification for proper location of the Stopway.</i>				
<p>The diagram illustrates a runway intersection. A horizontal runway is shown with a stopway extending to the left. The stopway is marked with a yellow chevron pointing right and a black threshold bar. The runway intersection is marked with a black cross. The runway is labeled with '10' on the left, '28' on the right, '36' at the bottom, and '81' at the top. The stopway is labeled 'STOPWAY' and the runway intersection is labeled 'RUNWAY INTERSECTION'. The threshold bar is labeled 'THRESHOLD BAR' and the runway label '36' is labeled 'RUNWAY LABEL'.</p>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	

Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 3 ft	± 5 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Tenth of a foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2(50))	The name of the feature.		
description (String 255)	Description of the feature		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
length (Real)	The length of the designated stopway from the end of the runway		
width (Real)	The overall width of the feature		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
runwayEndDesignator (String 3)	Specify runwayEnd designator to identify which runway end the Stopway is on.		
surfaceType (Enumeration: codeSurfaceType)	A classification of airfield pavement surfaces for Airport Obstruction Charts [Source: NGS]		
surfaceMaterial (Enumeration: codeSurfaceMaterial)	A code indicating the composition of the related surface [Source: NFDC]		
surfaceCondition (Enumeration: codeSurfaceCondition)	A description of the serviceability of the pavement [Source: NFDC]		
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.		

5.4.14. Taxiway Holding Position

Definition: A designated position at which taxiing aircraft and vehicles will stop and hold position, unless otherwise authorized by the airport control tower [Source: RTCA DO-272]				
Feature Group	Airfield			
Feature Class Name	TaxiwayHoldingPosition			
Feature Type	line			
CADD Standard Requirements				
Layer/Level	Description			
C-TAXI-HOLD--	Holding Lines			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>TaxiHoldingPosition</i>		Core
	FGDC	<i>TaxiwayHoldingPosition</i>		
	SDSFIE	<i>None</i>		

Documentation and Submission Requirements	None			
Related Features				
<p>Data Capture Rules: <i>The painted markings extend across the taxiway and may consist of one of the following:</i></p> <ul style="list-style-type: none"> • <i>Runway holding position markings are a set of four yellow lines and three spaces.</i> • <i>The side with the two solid lines is the holding side.</i> 				
				
Runway Holding Position Marking.				
<p><i>ILS/MLS holding positions are marked using a set of two parallel yellow lines spaced four feet apart, in between these two lines and perpendicular to them there are sets of two parallel yellow lines.</i></p>				
				
ILS/MLS Holding Position Marking.				
<p><i>Collect taxiway holding position line as a line at the outer edge of the painted marking (stop bar) farthest away from the corresponding runway.</i></p>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Tenth of foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2(50))		The name of the feature.		
description (VARCHAR2(255))		A description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
runwayDesignator (String 7)		The designator for the approaching runway.		
taxiwayDesignator (String 4)		The designator for the taxiway.		
lowVisibilityCategory (Enumeration: codeLowVisibilityCategory)		Code describing the Low visibility operation category of the TaxiwayHoldingPosition.		

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.4.15. Airport Sign

Definition: Signs at an airport other than surface painted signs. [Source: AC 150/5340-18]				
Feature Group	Airfield			
Feature Class Name	AirportSign			
Feature Type	Point			
CADD Standard Requirements				
Layer/ Level	Description			
A-ELEV-SIGN-	Signage			
A-FLOR-SIGN-	Signage			
C-PVMT-SIGN-	Other signs			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	1	Continuous		User Defined
MicroStation Standards	3			
Layer/ Level	Description			
C-NGAS-SIGN-	Surface markers/signs			
V-LITE-DIST-	Distance and arresting gear markers			
V-STRM-SIGN-	Surface markers/signs			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous		User Defined
MicroStation Standards	2			
Layer/ Level	Description			
C-SSWR-SIGN-	Surface markers/signs			
C-APRN-SIGN-	Airfield signs on the apron			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	7	Continuous		User Defined
MicroStation Standards	0			
Layer/ Level	Description			
C-STRM-SIGN-	Surface markers/signs			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4	Continuous		User Defined
MicroStation Standards	7			
Layer/ Level	Description			
V-LITE-SIGN-	Taxiway guidance signs			
C-TAXI-SIGN-	Airfield signs on the taxiway such as taxiway designator, hold short and directional signs			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	5	Continuous		User Defined
MicroStation Standards	1			
Layer/ Level	Description			
E-SPCL-TRAF-	Traffic signal system			
V-NGAS-SIGN-	Surface markers/signs			
V-SPCL-TRAF-	Traffic signal system			

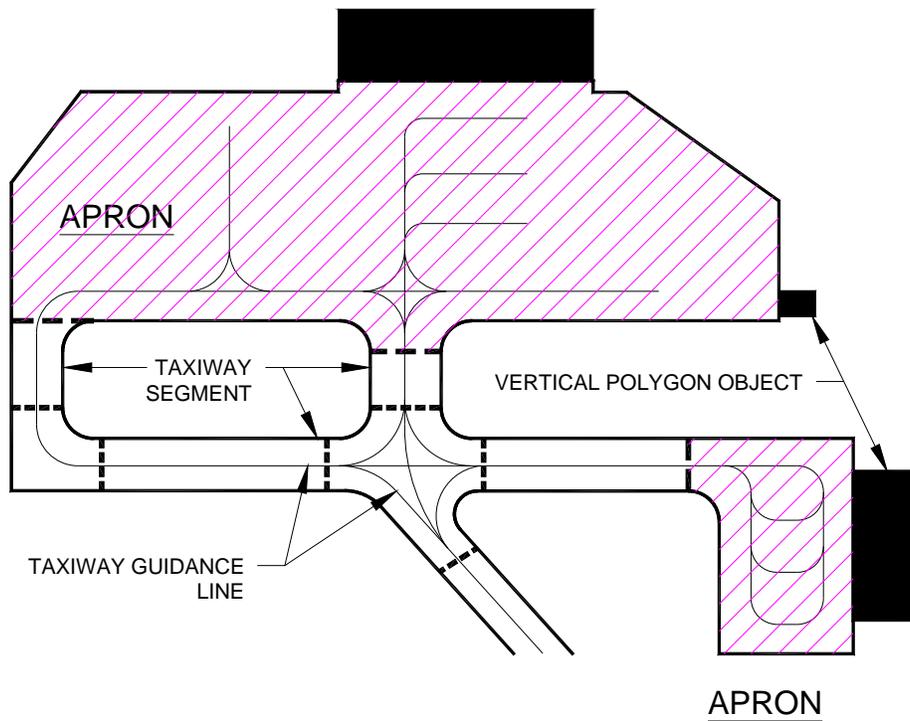
V-SSWR-SIGN-	Surface markers/signs			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1	User Defined
MicroStation Standards	4		3	
Layer/ Level	Description			
C-RUNW-SIGN-	Airfield signs on the runway such as distance remaining signs			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	8	Continuous		User Defined
MicroStation Standards	9			
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>AirportSign</i>		Extension
	FGDC	<i>AirportSign</i>		Extension
	SDSFIE	<i>general_improvement_feature_point</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules:	<i>Collect point at the highest point on the center of the sign structure. When completing the feature attribution or signs containing both location and direction information. Provide the data for the sign with the location information. If necessary or desired to provide the directional information also, provide as a separate feature.</i>			
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of sign structure		Top of sign structure at center	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Tenth of foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2(50))		The name of the feature.		
description (VARCHAR2(255))		A description of the improvement feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
signType (Enumeration: codeSignTypeCode)		The type of sign.		
height (Real)		The overall height of the feature.		
message (String 254)		The text message that appears on the sign.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.4.16. Apron

Definition: A defined area on an airport or heliport, paved or unpaved, intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance.

Feature Group	Airfield			
Feature Class Name	Apron			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-APRN-OTLN	Apron outline			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		3	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>ApronElementExtension</i>	Extension	
	FGDC	<i>Apron</i>	Extension	
	SDSFIE	<i>airfield_surface_type</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				

Data Capture Rules: *Collect a closed polygon to its greatest horizontal extents, encompassing apron areas.*



Illustrates the collection of the airport apron.

Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	N/A	N/A	
Accuracy Requirements (in feet)	Horizontal	Vertical	
	± 3 ft	Orthometric	Ellipsoidal
		± 5 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Tenth of foot	

Feature Attributes	
Attribute (Datatype)	Description
name (VARCHAR2(50))	The name of the feature.
description (String 255)	Description of the feature
apronType (Enumeration: CodeApronType)	A classification of the typical use for the apron
numberOfTiedowns (Integer)	The approximate number of tiedowns in the surface.
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
surfaceType (Enumeration: codeSurfaceType)	A classification of airfield pavement surfaces for Airport Obstruction Charts [Source: NGS]
surfaceMaterial (Enumeration: codeSurfaceMaterial)	A code indicating the composition of the related surface [Source: NFDC]
pavementClassificationNumber	A number that expresses the relative load-carrying capacity of a pavement in terms of a standard single wheel load [Source: AC 150/5335-5]
surfaceCondition (Enumeration: codeSurfaceCondition)	A description of the serviceability of the pavement [Source: NFDC]
fuel (Enumeration: codeFuel)	Code indicating the types of fuel available at the apron or deliverable to the apron.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

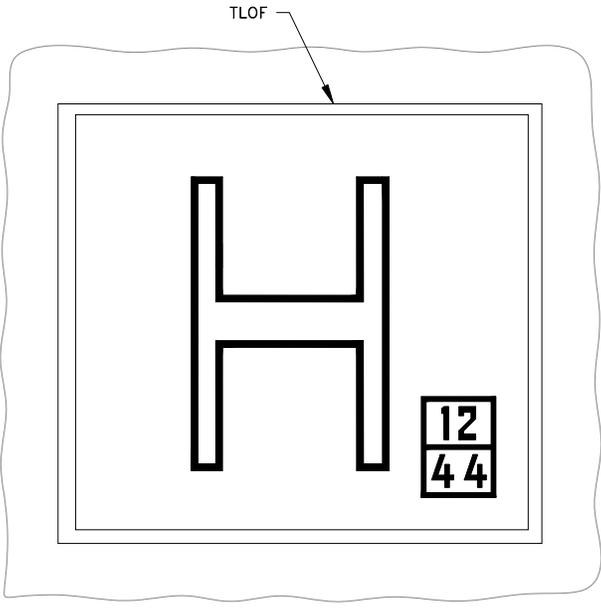
5.4.17. Deicing Area

Definition: An aircraft deicing facility is a facility where: (1) frost, ice, or snow is removed (deicing) from the aircraft in order to provide clean surfaces and/or (2) clean surfaces of the aircraft receive protection (anti-icing) against the formation of frost or ice and accumulation of snow or slush for a limited period of time [Source: AC 150/5300-13].				
Feature Group	Airfield			
Feature Class Name	DeicingArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-APRN-DEIC	Aircraft Deicing Area			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	7	Continuous	1	User Defined
MicroStation Standards	0		1	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>DeicingArea</i>		Core
	FGDC	<i>DeicingArea</i>		
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			

Related Features				
Data Capture Rules: <i>Deicing areas may consist of a single or multiple polygons, capture the outer edges of area(s). Deicing areas can be remote sites from the terminal buildings or in the terminal area.</i>				
Monumentation		No monumentation required.		
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Tenth of foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		The name of the feature.		
description (VARCHAR2(255))		A brief description of the area and any special characteristics.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.4.18. Touch Down Lift Off

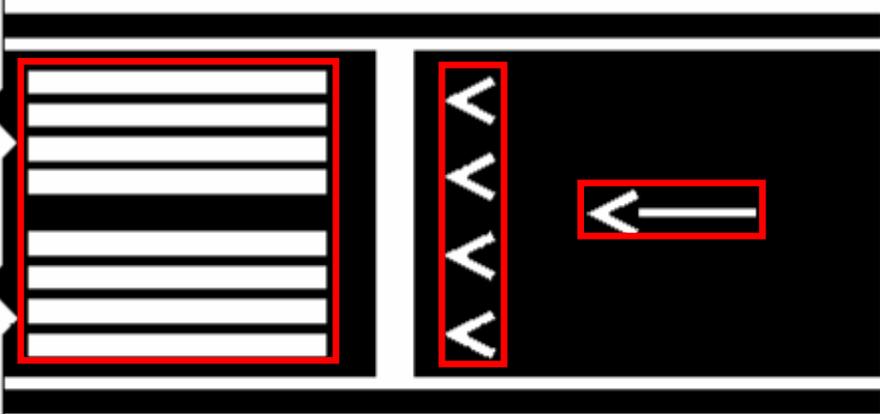
Definition: A load-bearing, generally paved area, normally centered in the Final Approach and Takeoff Area (FATO), on which a helicopter lands or takes off. The Touchdown and Lift-off Area (TLOF) is frequently called a helipad or helideck.				
Feature Group	Airfield			
Feature Class Name	TouchDownLiftOff			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level		Description		
C-HELI-TLOF		Helipad take off and landing area		
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1 MM	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>TouchDownLiftOff</i>		Core
	FGDC	<i>TouchDownLiftOff</i>		
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			

Related Features			
<p>Data Capture Rules: <i>Collect a closed polygon in the center of the white paint stripes along the outer edges of the TLOF as a solid line and labeled “HELIPAD.” Collect the outer edges of the TLOF pavement when there are no outer paint stripes. Collect all TLOFs located on the aircraft movement areas at compiler’s discretion.</i></p>			
			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	N/A	N/A	
Accuracy Requirements (in feet)	Horizontal	Vertical	
	± 1 ft	Orthometric	Ellipsoidal
		± 0.25 ft	± 0.20 ft
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest tenth of foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2(50))		The name of the feature.	
description (VARCHAR2(255))		A brief description of the area and any special characteristics.	
length (Real)		The overall length of the TLOF.	
width (Real)		The overall width of the TLOF.	
userFlag		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
surfaceType (Enumeration: codeSurfaceType)		A classification of airfield pavement surfaces for Airport Obstruction Charts [Source: NGS]	
surfaceMaterial (Enumeration: CodeSurfaceMaterial)		A code indicating the composition of the related surface [Source: NFDC]	
surfaceCondition (Enumeration: codeSurfaceCondition)		A description of the serviceability of the pavement [Source: NFDC]	

designHelicopter (String20)	A generic helicopter that reflects the maximum weight, maximum contact load/minimum contact area, overall length, rotor diameter, etc. of all helicopters expected to operate at the heliport. [Source: AC 150/5390-2]
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
gradient (real)	The gradient of the TLOF surface designed to provide positive drainage.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.4.19. Marking Area

Definition: Markings used on runway and taxiway surfaces to identify a specific runway, a runway threshold, a centerline, a hold line, etc. An element of marking whose geometry is a polygon. [Source: AC 150/5340-1 and RTCA DO-272]				
Feature Group	Airfield			
Feature Class Name	MarkingArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-HELI-IDEN-	Heliport numbers and letters			
C-RUNW-DIST-	Fixed distance markings			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	5	Continuous	1	User Defined
MicroStation Standards	1		7	
Layer/Level	Description			
C-HELI-TDZM-	Touchdown zone markers			
C-RUNW-NUMB-	Runway numbers and letters			
C-RUNW-TDZM-	Touchdown zone markers			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM			
	FGDC			
	SDSFIE	<i>airfield_surface_marking_area</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			

Related Features			
Data Capture Rules: <i>Collect the runway markings as closed polygons to encompass and delineate the individual markings.</i>			
			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	NA	NA	
Accuracy Requirements (in feet)	NA	NA	
	Horizontal	Vertical	
		Orthometric	Ellipsoidal
± 2 ft	± 3 ft	N/A	
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest tenth of foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2(50))		Name of the feature.	
description (VARCHAR2(255))		A description of the feature.	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
markingFeatureType (Enumeration: codeMarkingFeatureType)		The type of the marking	
color (Enumeration: codeColor)		The color of the marking	
userflag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.	

5.4.20. Marking Line

Definition: Markings used on runway and taxiway surfaces to identify a specific runway, a runway threshold, a centerline, a hold line, etc. An element of marking whose geometry is a line. [Source: AC 150/5340-1 and RTCA DO-272]	
Feature Group	Airfield
Feature Class Name	MarkingLine
Feature Type	3D Line

CADD Standard Requirements				
Layer/Level	Description	Layer/Level	Description	
C-APRN-CNTR-	Centerlines	C-PADS-OTLN-	Pad - outlines	
C-APRN-HOLD-	Holding position markings	C-RUNW-CNTR-MARK	Centerline markings	
C-APRN-MRKG-	Apron markings	C-RUNW-SHLD-	Shoulder markings	
C-APRN-SECU-	Security zone markings	C-RUNW-SHLD-	Runway Shoulder	
C-APRN-SHLD-	Shoulder stripes	C-RUNW-SIDE-	Side stripes	
C-HELI-BLST-	Helipad blast pad and stopway markings	C-TAXI-CNTR-MARK	Centerline markings	
C-HELI-CNTR-MARK	Centerline markings	C-TAXI-EDGE-	Edge markings	
C-HELI-DIST-	Fixed distance markings	C-TAXI-SHLD-	Shoulder transverse stripes	
C-HELI-SIDE-	Side stripes	V-PVMT-MRKG-	Pavement markings	
C-OVRN-CNTR-	Centerlines	C-PVMT-MRKG-WHIT	Roadway markings (white)	
C-OVRN-SHLD-	Shoulder markings	C-PVMT-MRKG-YELO	Roadway markings (yellow)	
C-PADS-CNTR-	Centerlines			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>MarkingElement</i>		Core
	FGDC	<i>Marking</i>		
	SDSFIE	<i>airfield_surface_marking_line</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules:	<i>Collect a line through the middle of the paint line.</i>			
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 2 ft		Orthometric	Ellipsoidal
			± 3 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest tenth of foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2(50))		Name of the feature.		
description (VARCHAR2(255))		A description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
markingFeatureType (Enumeration: codeMarkingFeatureType)		The type of the marking		

color (Enumeration: codeColor)	The color of the marking
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.4.21. Movement Area

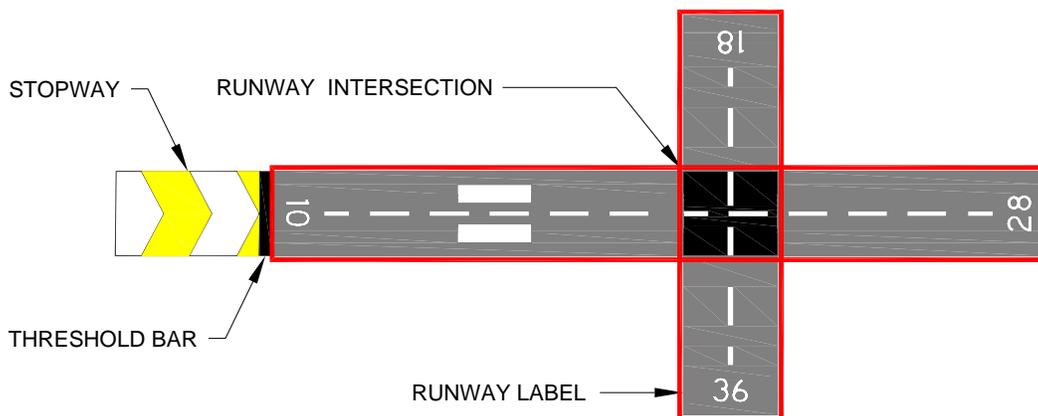
Definition: Runways, taxiways, and other areas of an airport used for taxiing or hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and aircraft parking areas [Source: 14 CFR Part 139]			
Feature Group	Airfield		
Feature Class Name	MovementArea		
Feature Type	Polygon		
CADD Standard Requirements			
Layer/Level	Description		
C-AFLD-SECR-SECA	Airfield security area		
	Color	Linetype	Line Weight
AutoDesk Standards	6	Continuous	1
MicroStation Standards	5		7
Information Assurance Level	Unclassified		
Equivalent Standards	AIXM		
	FGDC		
	SDSFIE	<i>airfield_surface_marking_area</i>	
Documentation and Submission Requirements	No documentation is required for this feature.		
Related Features			
Data Capture Rules: <i>Collect each portion of the movement area as a closed polygon to its greatest horizontal extents. Multiple non-overlapping polygons may be used to adequately model the areas.</i>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	NA	NA	
	NA	NA	
Accuracy Requirements (in feet)	Horizontal	Vertical	
	± 3 ft	Orthometric	Ellipsoidal
		± 5 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest tenth of foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2(50))	Name of the feature		
description (VARCHAR2(255))	Description of the feature		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.4.22. Runway

Definition: A defined rectangular area on an airport prepared for the landing and takeoff of aircraft. [AC 150/5300-13]				
Feature Group	Airfield			
Feature Class Name	Runway			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-RUNW-EDGE-	Airfield runway edges			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		3	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	Runway		Core
	FGDC	Runway		
	SDSFIE	airfield_surface_site		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				

Data Capture Rules: In addition to the requirements for runway end collection, capture the runway as a closed polygon limited by the outer edge of the runway edge paint (shoulder side), excluding runway shoulders or stopways. If there are no painted runway edge markings, capture and report the runway as a polygon at its narrowest dimension based on the existing pavement.



The red lines encompassing the runway illustrate the collection of the runways at an airport.

Monumentation	No monumentation required.	
Survey Point Location	Horizontal	Vertical
	N/A	N/A

Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 3 ft	± 5 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest tenth of foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2(50))	Name of the feature.		
description (String 255)	Description of the feature		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
runwayDesignator (String 7)	Designator of the runway based on the magnetic bearing and position in relation to parallel runways (e.g. 33R/15L) [Source: AC 150/5340-1]		
width (Real)	A perpendicular line to the surface centerline, extending to the edge of the runway pavement on both sides of the runway, through a runway end-point. If the runway width is less than 100 feet, the width is rounded up to the nearest 5 feet. If the runway width is more than 100 feet, the width is rounded to the nearest 10 feet. If the rounded width is different from the published width, NGS should be contacted for further advice. [Source: NGS]		
length (Real)	The straight line distance between runway end points. This line does not account for surface undulations between points. Official runway lengths are normally computed from runway end coordinates and elevations.		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
surfaceType (Enumeration: codeSurfaceType)	A classification of airfield pavement surfaces for Airport Obstruction Charts [Source: NGS]		
surfaceMaterial (Enumeration: CodeSurfaceMaterial)	A code indicating the composition of the related surface [Source: NFDC]		
pavementClassificationNumber	A number that expresses the relative load carrying capacity of a pavement in terms of a standard single wheel load [Source: AC 150/5335-5]		
surfaceCondition (Enumeration: codeSurfaceCondition)	A description of the serviceability of the pavement [Source: NFDC]		
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.		

5.4.23. Restricted Access Boundary

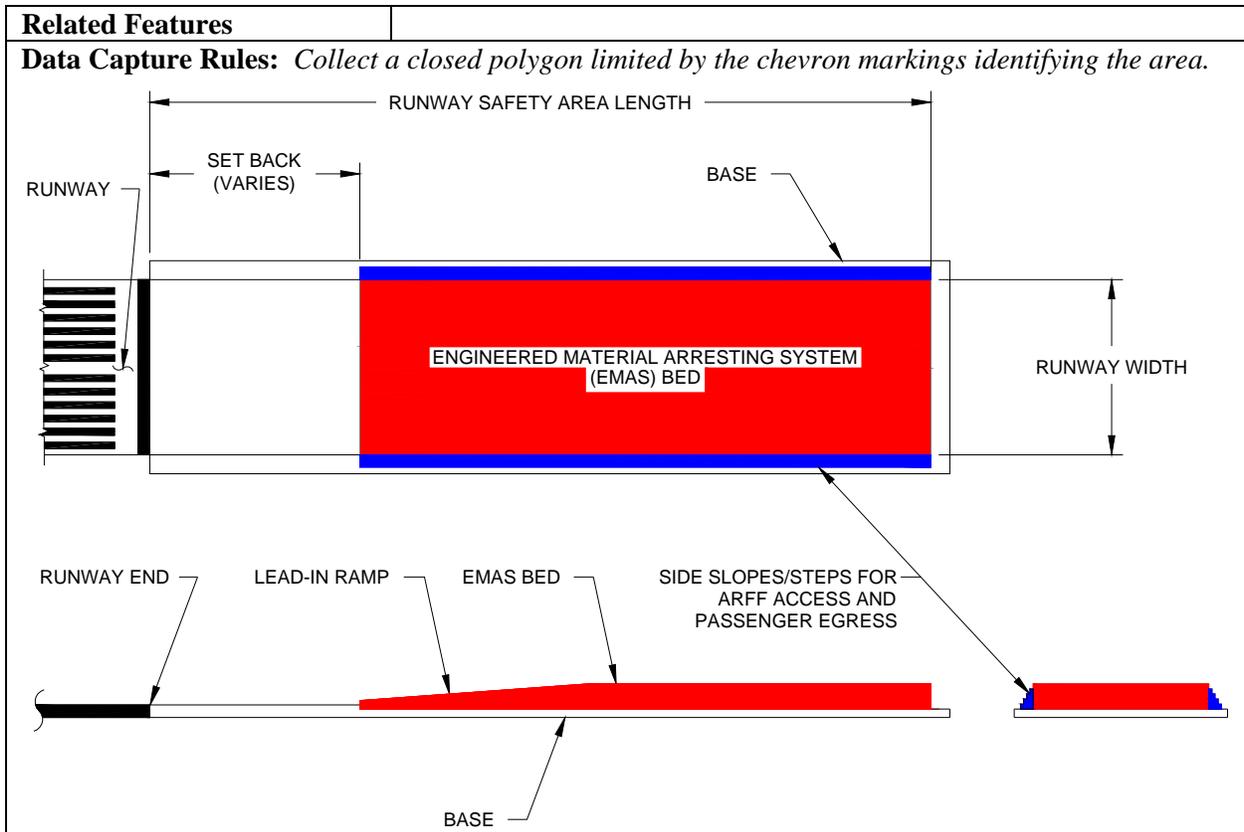
Definition: A restricted area boundary identifies areas strictly reserved for use by authorized personnel only.	
Feature Group	Airfield
Feature Class Name	RestrictedAccessBoundary
Feature Type	Line

CADD Standard Requirements			
Layer/Level	Description		
C-AIRF-SECR-RSTR	Restricted access boundary		
	Color	Linetype	Line Weight
AutoDesk Standards	5	Continuous	1
MicroStation Standards	1		7
Information Assurance Level	Confidential		
Equivalent Standards	AIXM	<i>SecurityElement</i>	Extension
	FGDC	<i>RestrictedAccessBoundary</i>	Extension
	SDSFIE	<i>Military_restricted_access_area</i>	
Documentation and Submission Requirements	No documentation is required for this feature.		
Related Features			
<p>Data Capture Rules: <i>Collect a line through the center of each marking to its greatest extents. Restricted access paint lines are either dashed white lines or alternating white/red/white solid lines.</i></p>			
Illustrates the collection of a restricted area boundary.			
Monumentation	No monumentation required		
Survey Point Location	Horizontal		Vertical
	NA		NA
Accuracy Requirements (in feet)	Horizontal		Vertical
	± 3 ft		Orthometric
			± 5 ft
Resolution	Geographic Coordinates		Distances and Elevations
	Hundredth of arc second		Nearest tenth of foot
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2(50))		A common name for the restricted area.	
description (VARCHAR2(255))		A description of the restricted area.	

status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.4.24. Runway Arresting Area

Definition: Any FAA-approved high energy absorbing material of a specific strength that will reliably and predictably bring an aircraft to a stop without imposing loads that exceed the aircraft's design limits, cause major structural damage, or impose excessive force on its occupants. [Source: AC 150/5220-22].				
Feature Group	Airfield			
Feature Class Name	RunwayArrestingArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-RUNW-ARSTC-RUNW-ARST-AIDS-CRIT				
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>ArrestingGear</i>		Core
	FGDC	<i>RunwayArrestingArea</i>		
	SDSFIE	<i>airfield_linear_safety_feature_line</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			



Illustrates the collection of the Runway Arresting Area.

Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoid
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest tenth of foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2(50))		A common name for the arresting area.		
description (VARCHAR2(255))		A description of the arresting area.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
length (Real)		The overall length of the feature.		
width (Real)		The overall width of the feature.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
surfaceMaterial (Enumeration: codeSurfaceMaterial)		A code indicating the composition of the related surface [Source: NFDC]		

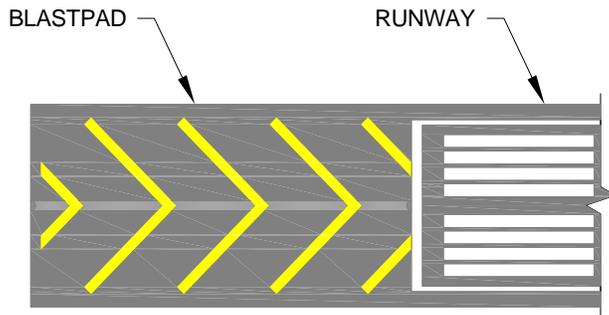
surfaceCondition (Enumeration: codeSurfaceCondition)	A description of the serviceability of the pavement [Source: NFDC]
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.
setback	The distance the EMAS begins beyond the end of the runway.

5.4.25. Runway Blast Pad

Definition: A specially prepared surface placed adjacent to the end of a runway to eliminate the erosive effect of the high wind forces produced by airplanes at the beginning of their takeoff rolls.

Feature Group	Airfield		
Feature Class Name	RunwayBlastPad		
Feature Type	Polygon		
CADD Standard Requirements			
Layer/Level	Description		
C-RUNW-BLST	Runway blast pad		
	Color	Linetype	Line Weight
AutoDesk Standards	4	Continuous	1
MicroStation Standards	7		3
Information Assurance Level	Restricted		
Equivalent Standards	AIXM	<i>RunwayBlastPad</i>	Core
	FGDC	<i>RunwayBlastPad</i>	
	SDSFIE	<i>airfield_linear_safety_feature_line</i>	
Documentation and Submission Requirements	No additional documentation is required.		
Related Features			

Data Capture Rules: *Collect a closed polygon to the extents of the chevrons marking the area.*



Illustrates the collection of a blast pad.

Monumentation	No monumentation is required.		
Survey Point Location	Horizontal		Vertical
	N/A		N/A
Accuracy Requirements (in feet)	Horizontal		Vertical
	± 2 ft	Orthometric	Ellipsoidal
		± 3 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations
	Hundredth of arc second		Nearest tenth of foot

Feature Attributes	
Attribute (Datatype)	Description
name (VARCHAR2(50))	Name of the feature.
description (VARCHAR2(255))	Description of the feature
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
length (Integer)	The length of clearway as measured. Compare the measure value to the value reported in the government flight information publications.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
pavementClassificationNumber	A number that expresses the relative load carrying capacity of a pavement in terms of a standard single wheel load [Source: AC 150/5335-5]
runwayEndDesignator (String 3)	Specify runwayEnd designator to identify which runway end the Blast Pad is on.
surfaceCondition (Enumeration: codeSurfaceCondition)	A description of the serviceability of the pavement [Source: NFDC]
surfaceMaterial (Enumeration: codeSurfaceMaterial)	A code indicating the composition of the related surface [Source: NFDC]
surfaceType (Enumeration: codeSurfaceType)	A classification of airfield pavement surfaces for Airport Obstruction Charts [Source: NGS]
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

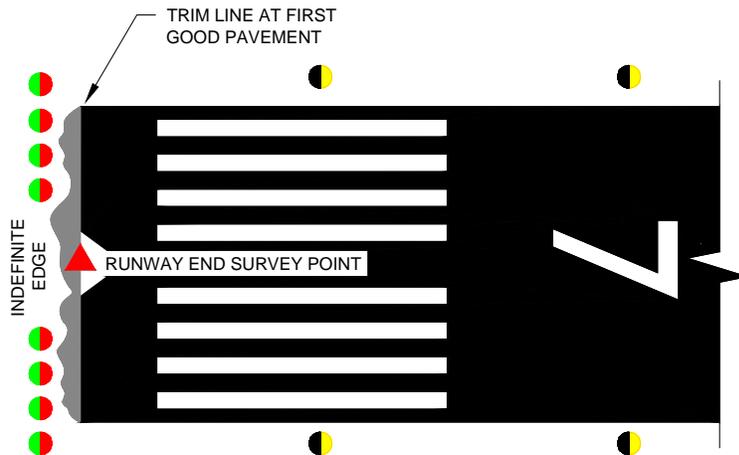
5.4.26. Runway End

Definition: The end of the runway surface suitable for landing or takeoff runs of aircraft. Runway Ends describe the approach and departure procedure characteristics of a runway threshold. The Runway End is the same as the runway threshold when the threshold is not displaced.				
Feature Group	Airfield			
Feature Class Name	RunwayEnd			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-RUNW-ENDP-	Runway endpoint			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	5	Continuous	1	User Defined
MicroStation Standards	1		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>RunwayDirectionExtension</i>		Extension
	FGDC	<i>RunwayEnd</i>		
	SDSFIE	<i>Airfield_surface_site</i>		
Documentation and Submission Requirements	<i>In addition to the requirements of paragraphs 1.5.2 and 1.5.3, document the selected location using four digital photographs:</i>			

	 <p>Photograph Type #1 (Eye Level). Photo taken from above the mark, showing an area around the mark about 1 meter in diameter.</p>	 <p>Photograph Type #2 (Approach). Photo showing tripod over the mark in foreground and approach in the background.</p>
	 <p>Photograph Type #3 (Across Runway). Photo taken from the side of the runway looking across the end of the runway, with a tripod or arrow indicating the end point; include any features used to identify the runway end.</p>	 <p>Photograph Type #4 (Close-in). Close-up photo depicting nail, washer and markings.</p>
<p>Related Features</p>		
<p>Data Capture Rule: <i>Establish the runway end on the runway centerline at the physical end, or specified location based on other supporting features. The area between the runway end and the displaced threshold should be marked with white arrows.</i></p>		
<p>Monumentation</p>	<p>When the ends of the runway surface have been determined, mark the positions using a nail and washer with the setting company’s name and year inscribed, chisel square, or paint if possible with a distinctive inscription to ensure future identification.</p>	
<p>Survey Point Location</p>	<p>Concrete Runway and No Aligned Taxiway Survey Point Locator is the limit of construction or the trim line at the first good pavement, unless these lines are located on the approach side of runway end lights. Supporting features include:</p> <ul style="list-style-type: none"> • Runway end lights near runway end • Threshold bar near runway end (usually present only if non-runway pavement is aligned with runway) • Threshold lights near runway end and usually in same fixture as runway end lights (if threshold not displaced) 	

- Runway number near runway end (if threshold not displaced)
- Runway edge lights (white or amber) extending to runway end

Comments: The limit of construction usually defines the survey point for the ends of concrete runways. A surface discontinuity defines the limit of construction. Do not confuse the runway end with the end of a blast pad, stopway, or other non-runway surface. Refer to the figure below for an example of this scenario.

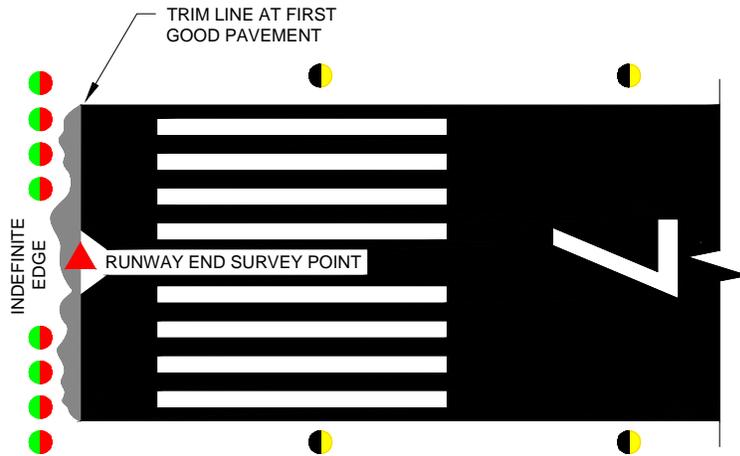


Paved/Non-concrete Runway and No Aligned Taxiway

Survey Point Locator is the limit of construction or the trim line at first good pavement, unless these lines are located on approach side of runway end lights. Supporting features include:

- Runway end lights near runway end
- Threshold bar near runway end (usually present only if non-runway pavement is aligned with runway)
- Threshold lights near runway end and usually in same fixture as runway end lights (if threshold not displaced)
- Runway number near runway end (if threshold not displaced)
- Runway edge lights (white or amber) extending to runway end

Comments: While the limit of construction is the first choice, a trim line at first good pavement is usually required to define the ends of paved, non-concrete runways since the ends of these surfaces are almost always crumbling and/or not orthogonal to the runway centerline to some degree. Refer to the figures above and below as examples.



Unpaved Runway and No Aligned Taxiway

Survey Point Locator is the trim line 10 feet on touchdown side of inboard runway end lights, a trim line connecting outboard runway end lights, a trim line 10 feet on touchdown side of inboard runway end day markers, or a trim line connecting outboard runway end day markers. Supporting features are threshold lights near threshold (if runway lighted and threshold not displaced)

Comments: If no lights or markers exist, the existence of a runway is in question since by FAA definition, a runway is a defined area. Not all areas used for takeoff/landings are runways.



Paved Runway and Aligned Taxiway

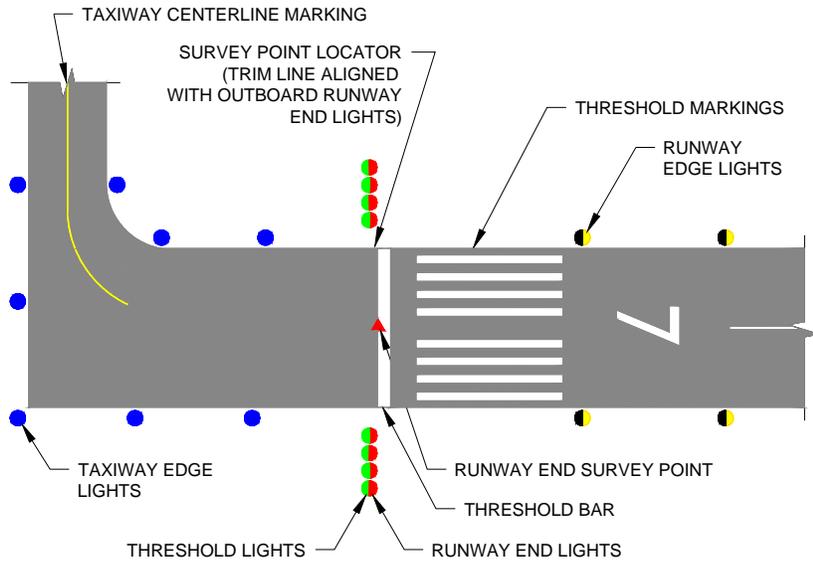
Survey Point Locator is the approach side of threshold bar unless this line is on the approach side of runway end lights and threshold is not displaced. Additionally, use the trim line connecting outboard runway end lights or the runway side of yellow demarcation bar provided this line is not located on approach side of runway end lights. The yellow demarcation bar usually occurs only if a displaced threshold and an aligned taxiway or stopway both exist.)

Supporting features include:

- Threshold lights near runway end and usually in same fixture as

- runway end lights (if threshold not displaced)
- Runway number near runway end (if threshold not displaced)
- Yellow aligned taxiway painting on approach side of threshold bar
- Taxiway edge lights between runway end and taxiway end
- Absence of runway side stripes between runway end and end of pavement on Precision Instrument Runways

Comments: Use caution, especially on smaller, poorly marked airports, not to confuse a displaced threshold and a runway end for a runway with an aligned taxiway.



NOTES:

1. THIS GRAPHIC IS NOT TO SCALE. FEATURES ARE SYMBOLIZED AND INTENDED ILLUSTRATION PURPOSES ONLY.
2. RUNWAY/STOPWAY SURVEYS SHOULD BE DISCUSSED WITH APPROPRIATE AIRPORT AUTHORITIES.
3. SURVEY POINT LOCATOR:
 - TRIM LINE ALIGNED WITH OUTBOARD RUNWAY END LIGHTS IF NO THRESHOLD BAR OR IF APPROACH SIDE OF THRESHOLD BAR IS IN APPROACH SIDE OF RUNWAY END LIGHTS.
4. SUPPORTING FEATURES
 - RUNWAY END LIGHTS NEAR THRESHOLD BAR
 - THRESHOLD MARKINGS NEAR RUNWAY END LIGHTS
 - RUNWAY NUMBER NEAR RUNWAY END LIGHTS
 - TAXIWAY EDGE LIGHTS BETWEEN RUNWAY END AND END OF PAVEMENT
5. COMMENTS:
 - NONSTANDARD MARKINGS FOR RUNWAY WITH ALIGNED TAXIWAY.
 - THRESHOLD BAR EXTENDS TO APPROACH SIDE OF RUNWAY END LIGHTS
 - RUNWAY CANNOT EXTEND TO APPROACH SIDE OF RUNWAY END LIGHTS

Unpaved Runway and Aligned Taxiway			
<p>Survey Point Locator is the trim line connecting outboard runway end lights or the trim line connecting outboard runway end day markers. Supporting features include threshold lights near threshold (if threshold not displaced) or runway/taxiway edge lights (if runway is lighted).</p> <p>Comments: Unpaved runways with aligned taxiways are unusual. If this situation is suspected, verify any area immediately adjacent to, and aligned with, the runway is used for taxi onto the runway and is marked appropriately for this purpose.</p>			
Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 1.00 ft	± 0.25 ft	± 0.20 ft
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest tenth of a foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2(50))		Name of the feature.	
description (VARCHAR2(255))		Description of the feature	
ellipsoidHeight (Real)		The height above the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question. Also called the geodetic height. [Source: NGS]	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
approachCategory (Enumeration: codeApproachCategory)		A grouping of aircraft based on 1.3 times their stall speed in the landing configuration at the certificated maximum flap setting and maximum landing weight at standard atmospheric conditions [Source: AC 150/5300-13]	
approachGuidance (Enumeration: codeApproachGuidance)		The type of approach guidance in use for the runway end.	
accelerateStopDistanceAvail (Integer)		The runway plus stopway length declared available and suitable for the acceleration and deceleration of an airplane aborting a takeoff [Source: AC 150/5300-13]	
magneticBearing (Real)		Magnetic runway bearing corresponding to threshold location valid at the day of data generation [Source: RTCA DO-272]	
trueBearing (Real)		True bearing corresponding to the landing direction [Source: ICAO Annex 14]	
designGroup (Enumeration: codeDesignGroup)		A grouping of airplanes based on wingspan and or tailheight, whichever is greatest. [Source: AC 150/5300-13]	
displacedDistance (Integer)		The distance from the runway end to the landing threshold. When the thresholdType is normal, displacedDist = 0.	
landingDistanceAvailable (Integer)		The runway length declared available and suitable for a landing airplane.	
runwayEndDesignator		The designator for the runway end (i.e. 32L)	
runwaySlope (Real)		Runway slope corresponding to landing direction [Source: RTCA DO-272]	
takeOffDistanceAvailable		The takeoff run available plus the length of any remaining runway clearway beyond the far end of the takeoff run available. [Source: AC 150/5300-13]	

takeOffRunwayAvailable	The runway length declared available and suitable for the ground run of an airplane taking off [Source: AC 150/5300-13]
touchdownZoneSlope	The longitudinal slope of the first 3000 feet of the runway beginning at the threshold.
touchdownZoneElevation	The highest elevation in the Touchdown Zone. The Touchdown Zone is the first 3,000 feet of the runway beginning at the threshold. [Source: FAA Order 8260.3]
thresholdType (enumeration: codeThresholdType)	A description of the landing threshold: either normal or displaced.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.4.27. Runway Label

Definition: The bottom center position of the runway designation marking				
Feature Group	Airfield			
Feature Class Name	RunwayLabel			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-RUNW-IDEN-MARK	Runway numbers and letters			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1 MM	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>RunwayMarking</i>		Core
	FGDC	<i>RunwayLabel</i>		
	SDSFIE	<i>airfield_buffer_zone_area</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules:	<i>Collect the runway label as an individual point object.</i>			
Monumentation	No monumentation required.			

Survey Point Location	Horizontal and Vertical				
	<p>Capture the point located at the base of each painted runway number on the runway centerline. If a runway number is not painted on the runway, identify and collect a point approximately 100 feet from the threshold as the runway label position.</p> <p style="text-align: center;">Illustrates the collection of the runway label.</p>				
Accuracy Requirements (in feet)	Horizontal	Vertical			
	± 3 ft	<table border="1" style="width: 100%;"> <tr> <td style="text-align: center;">Orthometric</td> <td style="text-align: center;">Ellipsoidal</td> </tr> <tr> <td style="text-align: center;">± 5 ft</td> <td style="text-align: center;">N/A</td> </tr> </table>	Orthometric	Ellipsoidal	± 5 ft
Orthometric	Ellipsoidal				
± 5 ft	N/A				
Resolution	Geographic Coordinates	Distances and Elevations			
	Hundredth of arc second	Nearest tenth of foot			
Feature Attributes					
Attribute (Datatype)	Description				
name (VARCHAR2 (50))	Name of the feature.				
description (VARCHAR2 255)	Description of the feature				
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.				
runwayEndDesignator (String 3)	The designator of the associated runway				
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.				
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.				

5.4.28. Runway Safety Area Boundary

Definition: The boundary of the Runway Safety Area (RSA).	
Feature Group	Airfield
Feature Class Name	RunwaySafetyAreaBoundary
Feature Type	Polygon
CADD Standard Requirements	
Layer/Level	Description
C-RUNW-SAFT-	Runway Safety Area

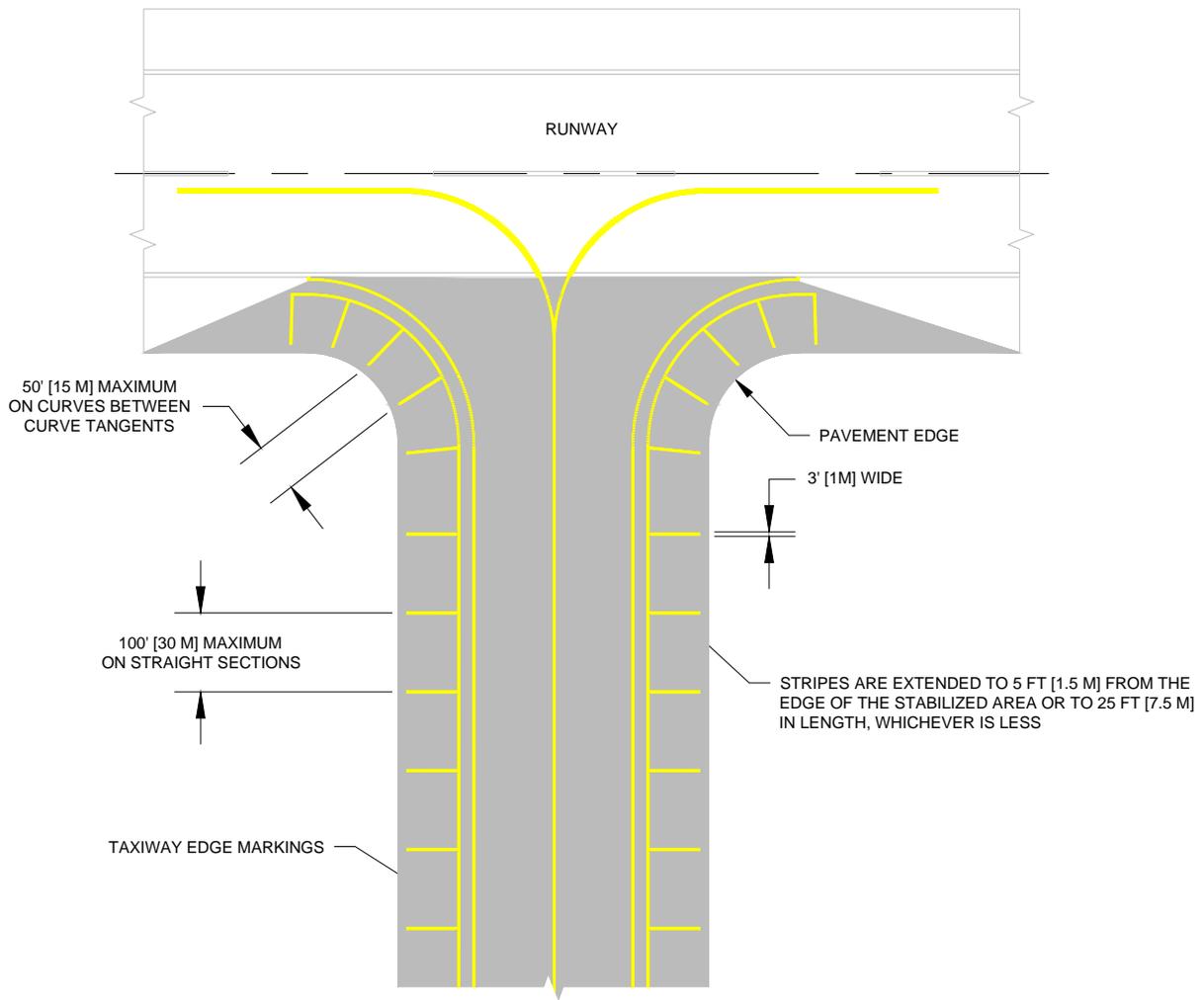
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	5	Continuous	1	User Defined
MicroStation Standards	1		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	RunwaySafetyAreaBoundary		Extension
	FGDC	RunwaySafetyAreaBoundary		Extension
	SDSFIE	None		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>Collect as a closed polygon to its greatest horizontal extents.</i>				
Monumentation	No monumentation required			
Survey Point Location	Horizontal		Vertical	
	NA		NA	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest tenth of foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2(50))		Name of the feature		
description (VARCHAR2 (255))		Description of the feature		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
runwayEndDesignator (String 3)		Specify runwayEnd designator		
determinationDate (Date)		The date the RSA determination was approved		
determination (VARCHAR2 (255))		A formal declaration of the RSA condition with respect to standards and any requirement improvements		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.4.29. Shoulder

Definition: An area adjacent to the edge of paved runways, taxiways, or aprons providing a transition between the pavement and the adjacent surface; support for aircraft running off the pavement, enhance drainage, and blast protection. [Source: AC 150/5300-13]	
Feature Group	Airfield
Feature Class Name	Shoulder
Feature Type	Polygon
CADD Standard Requirements	
Layer/Level	Description
C-HELI-SHLD-	Shoulder
C-PADS-SHLD-	Shoulders with annotation

	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>RunwayElement</i>		Core
	FGDC	<i>RunwayElement</i>		
	SDSFIE	<i>Airfield_surface_site</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				

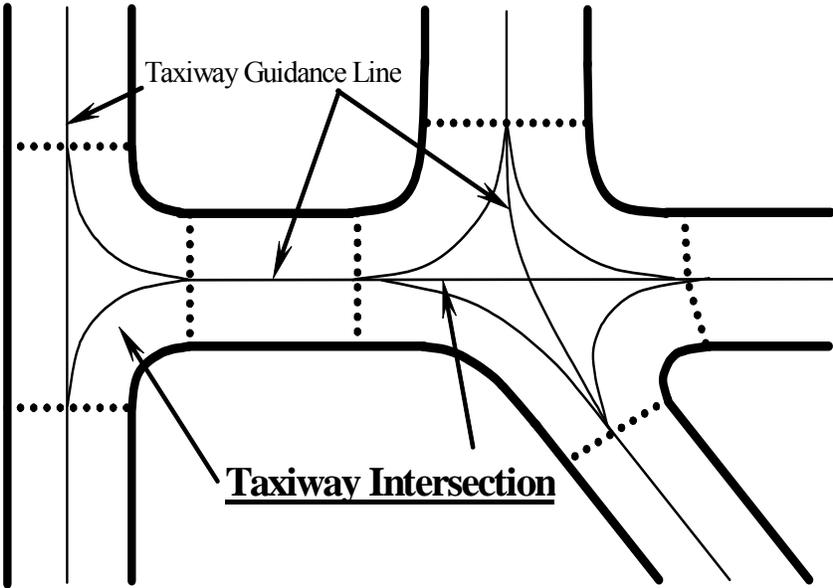
Data Capture Rules: *Collect non-intersecting shoulders as individual polygons. Collect intersecting shoulders as multiple polygons when intersected by taxiways, intersecting runway, or stopway/clearway.*



Monumentation	No monumentation required
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Survey Point Location	Horizontal and Vertical		
Accuracy Requirements (in feet)	Horizontal	Vertical	
	± 3 ft	Orthometric	Ellipsoidal
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	± 5 ft	N/A
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2(50))	Name of the feature.		
description (VARCHAR2 (255))	Description of the feature		
shoulderType (Enumeration: codeShoulderType)	Code for whether this is a runway shoulder or taxiway shoulder.		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
length (Real)	The overall length of the airfield surface.		
width (Real)	The overall width of the airfield surface.		
restricted (Boolean)	An indicator as to whether access to the feature is restricted		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
surfaceMaterial (Enumeration: CodeSurfaceMaterial)	A code indicating the composition of the related surface [Source: NFDC]		
sequence (String 5)	Sequential number of the element.		
surfaceCondition (Enumeration codeSurfaceCondition)	A description of the serviceability of the pavement [Source: NFDC]		
surfaceType (Enumeration: codeSurfaceType)	A classification of airfield pavement surfaces for Airport Obstruction Charts [Source: NGS]		
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.		

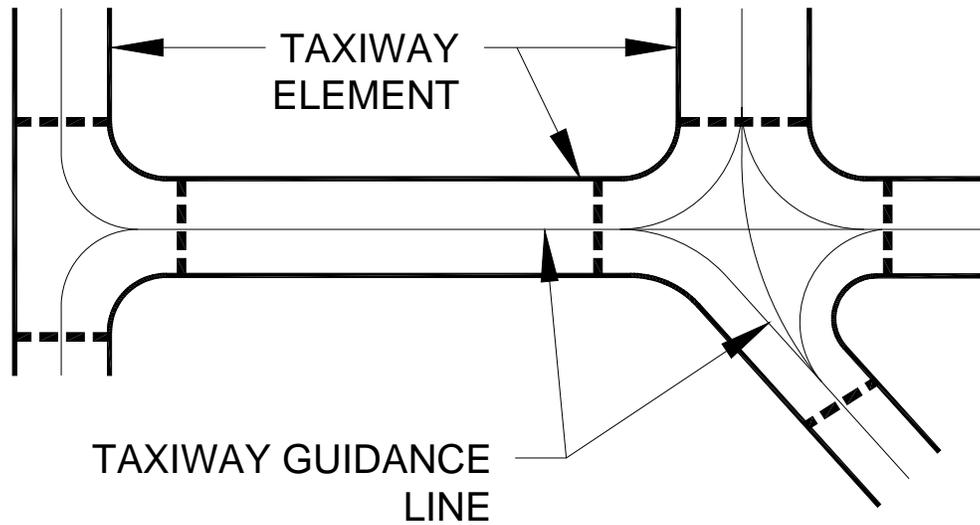
5.4.30. Taxiway Intersection

Definition: The junction of two or more taxiways (Source: ICAO Annex 14, Volume 1, Aerodromes, Chapter 1, page 5).				
Feature Group	Airfield			
Feature Class Name	TaxiwayIntersection			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-TAXI-INTS	Taxiway intersection			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	5	Continuous	1 MM	User Defined
MicroStation Standards	0		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>TaxiwayElement</i>		Core
	FGDC	<i>TaxiwayIntersection</i>		
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>Capture a polygon establishing the intersection of two or more taxiways.</i>				
 <p>The diagram illustrates a taxiway intersection. It shows two main taxiway paths crossing each other. Solid lines represent the taxiway boundaries, while dashed lines represent the taxiway guidance lines. The intersection point is clearly marked and labeled 'Taxiway Intersection'. Arrows point from the text labels to the corresponding lines in the diagram.</p>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal and Vertical			
	N/A			
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest tenth of foot	

Feature Attributes	
Attribute (Datatype)	Description
name (VARCHAR2 (50))	Name of the feature.
description (VARCHAR2 255)	Description of the feature
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.4.31. Taxiway Element

Definition: Defined paths on an airport established for the taxiing of aircraft (excluding apron taxilanes) and intended to provide a link between one part of the airport and another.				
Feature Group	Airfield			
Feature Class Name	TaxiwayElement			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-TAXI-OTLN	Taxiway - outlines			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1 MM	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>TaxiwayElement</i>		Core
	FGDC	<i>TaxiwayElement</i>		
	SDSFIE	<i>airfield_surface_site</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>Collect all taxiway elements as individual polygon objects. Collect taxiway at the outer edge of pavement or defined paint line (excluding shoulder). Each taxiway will typically be comprised of more than one element. When multiple elements make up a taxiway, identify the taxiway elements as beginning, intersection and end in the name attribute. Be sure to comply with the no overlapping polygon rule.</i>				



Illustrates the collection of a taxiway element.

Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest tenth of foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 255)		Description of the feature		
taxiwayId (VarChar2(50))		Taxiway element name. The name should be identical to the corresponding taxiway name. Multiple taxiway elements can have the same name. If two or more taxiways intersect the taxiway element intersection will be named after the predominant taxiway. If two taxiways on the same level intersect, the element can be named arbitrarily after one of the taxiways.		
taxiwayType (Enumeration: CodeTaxiwayType)		The type of taxiway		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
surfaceMaterial (Enumeration: CodeSurfaceMaterial)		A code indicating the composition of the related surface [Source: NFDC]		

pavementClassificationNumber	A number that expresses the relative load-carrying capacity of a pavement in terms of a standard single wheel load [Source: AC 150/5335-5]
surfaceCondition (Enumeration codeSurfaceCondition)	A description of the serviceability of the pavement [Source: NFDC]
directionality (Enumeration: CodeDirectionality)	Code used to define the directionality of traffic on the element.
sequence	Sequential number of the taxiway element.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.
surfaceType (Enumeration: codeSurfaceType)	Type of different materials used to construct the surface.
designGroup (Enumeration: codeDesignGroup)	Identifies the design group used in the design of the taxiway
length (Real)	Provides the length of the taxiwayElement polygon as measured along the centerline
width (Real)	Width of the taxiway
maximumSpeed (Real)	Identifies the maximum speed for the taxiwayElement
wingspan (Real)	Identifies the maximum aircraft wingspan which can traverse the taxiwayElement

5.5. Group: AIRSPACE

5.5.1. Landmark Segment

Definition: Features providing geographic orientation near the airport vicinity. The features may or may not have obstruction value. Collect geographic features of landmark value aiding in geographic orientation as individual polyline objects. These features include, but are not limited to, the following:				
<ol style="list-style-type: none"> (1). A selection of roads (i.e. major highways, primary roads, etc.) and railroads, especially in the airport vicinity, to assist the user in geographic orientation. (2). Shoreline (i.e. coastlines, lakes, rivers, etc.) of landmark value that aid in geographic orientation. (3). Utility lines (i.e. transmission lines), levees, fence lines, or other linear features having obstruction or landmark value. (4). Buildings or other features of landmark value that aid in geographic orientation. (5). Runways with specially prepared hard surfaces that are not located on the airport being surveyed, but fall within the survey limits. (6). Closed runways if they are sufficiently prominent to be of value to a pilot in airport identification. 				
Feature Group	Airspace			
Feature Class Name	LandmarkSegment			
Feature Type	Line			
CADD Standard Requirements				
Layer/Level	Description			
C-AIRS-LNDM	Landmark segment			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level				
Equivalent Standards	AIXM	<i>LandmarkSegment</i>		Extension
	FGDC	<i>LandmarkSegment</i>		Extension
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>Be sure that the attribute field for "CodeLandmarkType" correctly identifies the linear object being drawn. Each landmark type feature has its own data capture rule, collect each feature as defined in individual feature data capture rule (RoadSegment, UtilityLine, Shoreline, etc.).</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	

Feature Attributes	
Attribute (Datatype)	Description
name (VARCHAR2 (50))	Name of the feature.
description (VARCHAR2 255)	Description of the feature
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
landmarkType (Enumeration: CodeLandmarkType)	Type of landmark feature
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.5.2. Obstacle

Definition: All fixed (whether temporary or permanent) and mobile objects, or parts thereof, located on an area intended for the surface movement of aircraft, penetrating an Obstruction Identification Surface (OIS), or selected as a representative object. Use this feature for modeling linear objects as obstacles.				
Feature Group	Airspace			
Feature Class Name	Obstacle			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AIRS-OBST-LINE	Airspace obstruction - Line			
C-AIRS-OBST-PPNT	Airfield obstruction			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>Obstacle</i>		Extension
	FGDC	<i>Obstacle</i>		Extension
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: Use the <i>Obstacle</i> feature type for point or line features penetrating an Obstruction Identification Surface (OIS) or selected as a representative object. Model line features as points representing the vertices of the line.				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of the object		Highest point	

Accuracy Requirements (in feet relative to the nearest PACS, SACS, HRP or TSM)				
Runways Supporting Vertically Guided Operations				
	Horizontal	Vertical		
		Orthometric	Ellipsoid	AGL
Vertically Guided Runway Primary Surface (VGRPS)	± 20	± 3	± 3	± 10
Vertically Guided Primary Connection Surface (VGPCS)	± 20	± 3	± 3	± 10
Vertically Guided Protection Surface (VGPS)	± 20	± 3	± 3	± 10
Vertically Guided Approach Transition Surface (VGATS)	± 20	± 3	± 3	± 10
Vertically Guided Approach Surface (VGAS)	± 20	± 3	± 3	± 10
Vertically Guided Horizontal Surface (VGHS)	± 20	± 10	± 10	± 10
Vertically Guided Conical Surface (VGCS)	± 20	± 10	± 10	± 10
Runways Supporting Non-Vertically Guided Operations				
	Horizontal	Vertical		
		Orthometric	Ellipsoid	AGL
Non-vertically guided primary surface	± 20	± 3	± 3	± 3
Non-vertically guided approach surface	± 20	± 10	± 10	± 10
Non-vertically guided transitional surface	± 20	± 10	± 10	± 10
Non-vertically guided horizontal surface	± 50	± 20	± 20	± 10
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Tenth of a foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	Description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
obstacleType (Enumeration: CodeObstacleType)	The type of object.			
obstacleSource (Enumeration: CodeObstacleSource)	Identify how or where the object was identified.			
aboveGroundLevel (Real)	The vertical distance from the ground to the highest point of the object.			
distanceFromDisplacedThreshold (Real)	Distance measured along runway centerline or centerline extended from a Displaced Threshold to point abeam the object. A negative distance indicates that the object is on the touchdown side of the runway approach end. This data is not provided for objects penetrating the horizontal, conical and runway transitional surfaces.			

distanceFromRunwayCenterline (Real)	Shortest distance from the runway centerline or centerline extended to the object. "L" (LEFT) or "R" (RIGHT) is relative to an observer facing forward in a landing aircraft. This data is not provided for objects penetrating the horizontal, conical and runway transitional surfaces.
distanceFromRunwayEnd (Real)	Distance measured along runway centerline or centerline extended from the physical end to point abeam the object. A negative distance indicates that the object is on the touchdown side of the runway approach end. This data is not provided for objects penetrating the horizontal, conical and transitional (HCT) surfaces.
groupCode (String 75)	A text code indicating that the object consists of a group of objects of the same type. For example, a group of trees, a group of buildings, a group of antennas, etc [Source: AIXM]
heightAboveAirport (Integer)	Height above airport the official airport elevation point [Source: NGS]
heightAboveRunway (Real)	Height above runway physical end for objects located underneath the approach surface.
heightAboveTouchdownZone (Real)	Height above touchdown zone elevation for objects located underneath the approach surface.
lightCode (Boolean)	A code indicating that the obstacle is lighted [Source: AIXM]
markingFeatureType (Enumeration: codeMarkingFeatureType)	The type of the marking
penValSpecified (Integer)	The elevation difference between the height of the object and the specified surface. Used to identify the amount of penetration of the main OIS.
penValSupplemental (Integer)	The elevation difference between the height of the object and the supplemental surface. Used to identify the amount of penetration to a secondary OIS.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidHeight (Real)	The height above the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.
obstructionNumber (VARCHAR2(30))	Provide the Aeronautical Study Number assigned by the FAA in the appropriate format (if known). The appropriate format is YYYY-XXX-NNNNN-TTT, EXAMPLE: 2008- ASW-1234-OE where YYYY is the year, XXX is the FAA responsible region (ASW, AAL, AGL, AEA, etc.) or WTE for Wind Turbine cases in the eastern U.S. or WTW for wind turbine cases in the western U.S., NNNNN is the sequential number assigned to the case for the year, and TTT is either OE, NR or NRA as appropriate. The dashes in the format are important and if the information is not known leave this blank.
disposition (String 16)	The disposition of the airspace obstruction.
oisSurfaceCondition (Enumeration: is CodeOisSurfaceCondition)	The Obstruction Identification Surface that the obstacle represents.

frangible (Boolean)	A Boolean indicating whether the object is frangible.
faaCoordinationCode (Boolean)	A Boolean indicating whether the obstruction has received FAA coordination or review.

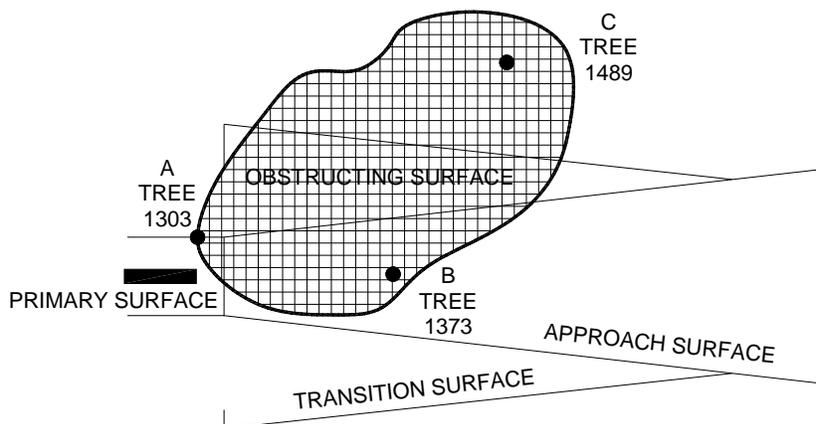
5.5.3. Obstruction Area

Definition: Polygon features penetrating the plane of the obstruction identification surface (OIS) or selected as representative objects. Determine the type of obstructing area by the predominant feature within the grouped area. Penetrating groups of trees, ground, buildings, urban areas, mobile cranes, and agricultural area are the most common types of obstruction areas found within the surfaces of an Airport Airspace Analysis survey.				
Feature Group	Airspace			
Feature Class Name	ObstructionArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-AIRS-OBST-POLY	Airspace obstruction			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1 MM	User Defined
MicroStation Standards	0		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>ObstructionArea</i>		Core
	FGDC	<i>ObstructionArea</i>		
	SDSFIE	<i>airspace_obstruction_navaid_point</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			

Related Features

Data Capture Rules: Use the *ObstructionArea* feature type to model features penetrating an *OIS* or is selected as a representative object using a bounding polygon encompassing the greatest extents of the area and the height of the highest point within the feature.

Area Limit Object Requirements – When a large area of objects such as buildings, terrain or vegetation penetrate a surface, identify the limits of the area using a bounding polygon within the lateral limits of the surface. Overlay the area lateral limits with a grid established parallel and perpendicular to the extended runway centerline of the surface (see figure below). Establish the grid beginning at the runway end using the appropriate spacing until reaching the obstructing area. Within 10,200 feet of the runway threshold, use 200-foot grid spacing; outside 10,200 feet from the threshold, use a grid spacing of 500 feet. Analyze, identify and report the highest manmade or natural object penetrating the surface within each grid sector. Additionally, report the highest manmade or natural object within the area limits (see Figure 2-18). If two objects with the exact same MSL elevation are within a grid sector, choose the sector object by first selecting the object closer to the centerline, then if required, by the object closer to the runway.



NOTES:

1. THIS GRAPHIC EXPLAINS OR CLARIFIES CERTAIN DATA REQUIREMENTS.
2. SEE TEXT WHEN OBJECT CONGESTION OCCURS.
3. DIMENSIONS ARE IN FEET. DO NOT SCALE THIS DRAWING.

Reporting highest object(s) within ObstructionArea limits.

Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet relative to the nearest PACS, SACS, HRP or TSM)				
Runways Supporting Vertically Guided Operations				
	Horizontal	Vertical		
		Orthometric	Ellipsoid	AGL
Vertically Guided Runway Primary Surface (VGRPS)	± 20	± 3	± 3	± 10
Vertically Guided Primary Connection Surface (VGPCS)	± 20	± 3	± 3	± 10

Vertically Guided Protection Surface (VGPS)	± 20	± 3	± 3	± 10
Vertically Guided Approach Transition Surface (VGATS)	± 20	± 3	± 3	± 10
Vertically Guided Approach Surface (VGAS)	± 20	± 3	± 3	± 10
Vertically Guided Horizontal Surface (VGHS)	± 20	± 10	± 10	± 10
Vertically Guided Conical Surface (VGCS)	± 20	± 10	± 10	± 10
Runways Supporting Non-Vertically Guided Operations				
	Horizontal	Vertical		
		Orthometric	Ellipsoid	AGL
Non-vertically guided primary surface	± 20	± 3	± 3	± 3
Non-vertically guided approach surface	± 20	± 10	± 10	± 10
Non-vertically guided transitional surface	± 20	± 10	± 10	± 10
Non-vertically guided horizontal surface	± 50	± 20	± 20	± 10
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredths of arc second		Tenth of a foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2(50))	Name of the feature.			
description (String 255)	Description of the feature			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
obstacleType (Enumeration: CodeObstacleType)	The type of object.			
obstacleSource (Enumeration: CodeObstacleSource)	Identify how or where the object was identified.			
aboveGroundLevel (Real)	The vertical distance from the ground to the highest point of the object.			
distanceFromDisplacedThreshold (Real)	Distance measured along runway centerline or centerline extended from a Displaced Threshold to point abeam the object. A negative distance indicates that the object is on the touchdown side of the runway approach end. This data is not provided for objects penetrating the horizontal, conical and runway transitional surfaces.			
distanceFromRunwayCenterline (Real)	Shortest distance from the runway centerline or centerline extended to the object. "L" (LEFT) or "R" (RIGHT) is relative to an observer facing forward in a landing aircraft. This data is not provided for objects penetrating the horizontal, conical and runway transitional surfaces.			

distanceFromRunwayEnd (Real)	Distance measured along runway centerline or centerline extended from the physical end to point abeam the object. A negative distance indicates that the object is on the touchdown side of the runway approach end. This data is not provided for objects penetrating the horizontal, conical and transitional (HCT) surfaces.
groupCode (String 75)	A text code indicating that the object consists of a group of objects of the same type. For example, a group of trees, a group of buildings, a group of antennas, etc [Source: AIXM]
heightAboveAirport (Integer)	Height above airport the official airport elevation point [Source: NGS]
heightAboveRunway (Real)	Height above runway physical end for objects located underneath the approach surface.
heightAboveTouchdownZone (Real)	Height above touchdown zone elevation for objects located underneath the approach surface [Source: NGS]
lightCode (Boolean)	A code indicating that the obstacle is lighted [Source: AIXM]
markingFeatureType (Enumeration: codeMarkingFeatureType)	The type of the marking
penValSpecified (Integer)	The elevation difference between the height of the object and the specified surface. Used to identify the amount of penetration of the main OIS.
penValSupplemental (Integer)	The elevation difference between the height of the object and the supplemental surface. Used when to identify the amount of penetration to a secondary OIS.
obstructionNumber (VARCHAR2(30))	Provide the Aeronautical Study Number assigned by the FAA in the appropriate format (if known). The appropriate format is YYYY-XXX-NNNNN-TTT, EXAMPLE: 2008- ASW-1234-OE where YYYY is the year, XXX is the FAA responsible region (ASW, AAL, AGL, AEA, etc.) or WTE for Wind Turbine cases in the eastern U.S. or WTW for wind turbine cases in the western U.S., NNNNN is the sequential number assigned to the case for the year, and TTT is either OE, NR or NRA as appropriate. The dashes in the format are important and if the information is not known leave this blank.
obstructionAreaType (Enumeration: CodeObstructionAreaType)	Type of obstructing area.
disposition (VARCHAR2(255))	The disposition of the airspace obstruction.
oisSurfaceCondition (Enumeration: CodeOisSurfaceCondition)	The Obstruction Identification Surface that Obstructing Area represents
length (Real)	The overall length of the obstruction.
width (Real)	The overall width of the obstruction.
frangible (Boolean)	A Boolean indicating whether the object is frangible.
faaCoordinationCode (Boolean)	A Boolean indicating whether the obstruction has received FAA coordination or review.
ellipsoidHeight (Real)	The height above the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question.

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.5.4. Obstruction Identification Surface

Definition: A derived imaginary surface defined by FAA.				
Feature Group	Airspace			
Feature Class Name	ObstructionIdSurface			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-AIRS-OTHR	Other airspace surfaces			
C-AIRS-PART-PRIM	14 CFR Part 77 - Primary Surface			
C-AIRS-PART-HORZ	14 CFR Part 77 - Horizontal Surface			
C-AIRS-PART-CONL	14 CFR Part 77 - Conical Surface			
C-AIRS-PART-TRNS	14 CFR Part 77 - Transitional Surfaces			
C-AIRS-PART-APRC	14 CFR Part 77 - Approach Surfaces			
C-AIRS-AAAS-PRIM	Airport Airspace Analysis Survey - Primary Surfaces			
C-AIRS-AAAS-HORZ	Airport Airspace Analysis Survey - Horizontal Surface			
C-AIRS-AAAS-CONL	Airport Airspace Analysis Survey - Conical Surface			
C-AIRS-AAAS-TRNS	Airport Airspace Analysis Survey - Transitional Surfaces			
C-AIRS-AAAS-APRC	Airport Airspace Analysis Survey - Approach Surfaces			
C-AIRS-AAAS-VERT	Airport Airspace Analysis Survey - Vertical Guidance Protection Surface			
C-AIRS-TERP	TERPS Surfaces			
C-AIRS-TERP-DEPT	Departure Analysis			
C-AIRS-OEIA	One Engine Inoperative Analysis			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	1 (all)	Continuous (all)	1 MM (all)	User Defined
MicroStation Standards	0 (all)		7 (all)	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>ObstructionAssessmentArea</i>		Core
	FGDC	<i>ObstructionIdentificationSurface</i>		
	SDSFIE	<i>airfield_imaginary_surface_area</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>Identify the obstruction identification surface (OIS) required by the utilization type for the runway. Depict the horizontal limits of the appropriate obstruction imaginary surface.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	N/A		Orthometric	Ellipsoidal
			N/A	N/A

Resolution	Geographic Coordinates	Distances and Elevations
	N/A	N/A
Feature Attributes		
Attribute (Datatype)	Description	
name (VARCHAR2 (50))	A commonly used name for the zone.	
description (VARCHAR2 255)	Description of the feature	
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
runwayDesignator (String 7)	Specify runway designator for the Vertically Guided Runway Primary Surface (VGRPS), for the Vertically Guided Primary Connection Surface (VGPCS), and for the Vertically Guided Approach Transitional Surface (VGATS).	
runwayEndDesignator (String 3)	Specify runwayEnd designator for the Vertically Guided Approach Surface (VGAS) and for the Vertically Guided Protection Surface (VGPS).	
oisSurfaceType (Enumeration: CodeOisSurfaceType)	Surface Type refers to the general type of surface used to analyze features. Surfaces of the same type usually are similar in nature with respect to certain aspects of the surface definition or may merely be representative of different programs within the airport charting community.	
oisZoneType (Enumeration: CodeOisZoneType)	Specifies zones within Obstruction Identification Surfaces (OIS)	
oisSurfaceCondition (Enumeration: CodeOisSurfaceCondition)	The Obstruction Identification Surface that Obstructing Area represents	
safetyRegulation (String 20)	An identifier for the safety regulations in effect within the zone.	
zoneUse (String 50)	A description of the use of the zone.	
approachGuidance (Enumeration: CodeApproachGuidance)	Defines the type of approach guidances the OIS is meant to protect.	
slope (Real)	The low to high gradient within the airspace expressed as a ratio x:1, where X is the slope value. For example 40:1 for departures.	
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.	

5.5.5. Runway Protect Area

Definition: An area beyond the takeoff runway under control of airport authorities within which terrain or fixed obstacles may not extend above specified limits. These areas may be required for certain turbine-powered operations, and the size and upward slope of the clearway will differ depending on when the aircraft was certificated.	
Feature Group	Airspace
Feature Class Name	RunwayProtectArea
Feature Type	Polygon

CADD Standard Requirements				
Layer/Level	Description			
C-RUNW-CLRW	Runway Clearway			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	
MicroStation Standards	7		3	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>RunwayProtectAreaExtension</i>		Extension
	FGDC	<i>RunwayProtectArea</i>		Extension
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>N/A</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	N/A		Orthometric	Ellipsoidal
	N/A		N/A	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Tenth of foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		The name of the feature.		
description (VARCHAR2(255))		Description of the feature		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
length (Integer)		The length of clearway as reported by the FAA Airport/Facility Directory and the Aeronautical Information Publication (AIP) for international airports		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
type (Enumeration: CodeRunwayProtectionAreaType)		Code indicating the type of runway protection area being classified.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.6. Group: CADASTRAL

5.6.1. Airport Boundary

Definition: A polygon, or a set of polygons, encompassing all property owned or controlled by the airport for aviation purposes. [Source: Order 5190.6A, Section 5]				
Feature Group	Cadastral			
Feature Class Name	AirportBoundary			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-PROP-PROP-	Airport property			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1	
MicroStation Standards	4		3	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	AirportHeliport		Core
	FGDC	AirportBoundary		
	SDSFIE	Airfield_area		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Airport property information is usually obtainable from the county or local government.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Tenth of foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		The name of the feature.		
description (VARCHAR2 (255))		Description of the feature		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
faaSiteNumber (String 8)		This is a number that contains a one-letter suffix. The number is assigned to the airport in ascending order, depending on the state and the associated city. If you do not know or have access to the appropriate site number contact your airports district/region airports office or state aviation authorities for assistance. [Source: FAA AC 150/5200-35]		
faaLocationId (String 4)		The location identifier assigned to the feature by FAA		
iataCode (String 4)		The location identifier assigned to the feature by International Air Transport Association (IATA)		
icaoCode (String 4)		The location identifier assigned to the airport by the ICAO		

airportFacilityType (Enumeration CodeAirportFacilityType)	The type of airfield
operationsType (Enumeration: CodeOperationsType)	The type of operations permitted on the airfield
owner (Enumeration: CodeOwner)	The type of owner of the airfield
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.6.2. Airport Parcel

Definition: A tract of land within the airport boundary acquired from surplus property, Federal funds, local funds, etc. Include easement interests in areas outside the fee property line as an airport parcel. [Source FAA Order 5190.6, Chapter 5]				
Feature Group	Cadastral			
Feature Class Name	AirportParcel			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
V-PROP-AIRF-LINE-	Property lines (Existing recorded plats)			
V-PROP-QTRS-	Quarter lines			
V-PROP-SECT-	Section lines			
V-PROP-SXTS-	Sixteenth lines (40 lines)			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		3	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>AirportParcel</i>	Extension	
	FGDC	<i>AirportParcel</i>	Extension	
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect and reduce in accordance with state/local requirements.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
			Orthometric	Ellipsoidal
	As required by state/local requirements.		N/A	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest tenth of a foot	

Feature Attributes	
Attribute (Datatype)	Description
name (VARCHAR2 (50))	Name of the feature.
description (String 255)	Description of the feature
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
authority (String 75)	The owner of the airport parcel
acquisitionType (Enumeration: codeAcquisitionType)	The type of acquisition used to acquire the parcel
costToAcquire (Real)	The amount paid to the owner in U.S. dollars for the parcel
dateAcquired (Date)	The date the parcel was acquired. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915).
grantProjectNumber (String 30)	The grant number if Federal funds were used to acquire the parcel
howAcquired (Enumeration: codeHowAcquired)	The manner in which the parcel was acquired
marketValue (Real)	The assessed market value of the parcel in U.S. dollars when it was acquired
yearAssessed (Number 4)	The year in which the market value assessment was made
yearBuilt (Number 4)	The year in which the most recent structure(s) were built on the parcel
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.
acquisitionPurpose (String 50)	Acquisition purpose
area (Real)	The size of the area, zone, or polygon in square units.
assessedValue (Real)	The most recent assessed value of the airport parcel.
deedReference (String 30)	Reference to where the deed to the airport parcel is recorded in such information as Plat Book and Page.
legalDescription (String 240)	The complete legal description of the property as it appears in the deed.
parcelNumber (String 12)	Any locally used number to identify the parcel.
passengerChargeNumber (String 30)	Passenger Facility Charge Number
previousOwner (String 75)	Previous owner of the airport parcel
useOfParcel (String 16)	The current primary use of the airport parcel.

5.6.3. County

Definition: Boundary line of the land and water under the right, power, or authority of the county government.	
Feature Group	Cadastral
Feature Class Name	County
Feature Type	Polygon
CADD Standard Requirements	
Layer/Level	Description
V-PROP-CNTY-	County Boundary

	Color	Line type	Line Weight	Symbol
AutoDesk Standards	2	DASHED_SPA	1 MM	User Defined
MicroStation Standards	4	CED	7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>GovernmentalUnit</i>		Extension
	FGDC	<i>GovernmentalUnit</i>		Extension
	SDSFIE	<i>political_jurisdiction_county_line</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>County boundary information is usually obtainable from the county engineer, surveyor or auditor's office.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	As provided.		Orthometric	Ellipsoidal
			N/A	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 (255))		The description of the area.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
politicalName (String 30)		The common name associated with the property area.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.6.4. Easements And Rights of Ways

Definition: A parcel of land for which formal or informal deed easement rights exist [Source: SDSFIE (modified)]	
Feature Group	Cadastral
Feature Class Name	EasementsAndRightsofWay
Feature Type	Polygon
CADD Standard Requirements	
Layer/Level	Description
C-PROP-ESMT-	Easements
C-PROP-RWAY-	Right of ways
V-PROP-ESMT-	Government easements/property lines
V-PROP-RWAY-	Right of ways

	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Layer/Level	Description			
V-PROP-RWAY-	Right of ways			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1 MM	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>EasementsAndRightsofWay</i>		Extension
	FGDC	<i>EasementsAndRightsofWay</i>		Extension
	SDSFIE	<i>easement_right_of_way_area</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Easement and right of way information is usually obtainable from county engineer, surveyor, audit or recorder office.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	As provided.		Orthometric	Ellipsoidal
			N/A	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredths of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 (255))		A brief description of the feature.		
status (Enumeration: codeStatus)		The status of the parcel. (Active, inactive, terminated)		
purpose (String 30)		Project purpose for which the easement was acquired.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.6.5. FAA Region Area

Definition: This feature depicts the FAA regions.	
Feature Group	Cadastral
Feature Class Name	FAARegionArea
Feature Type	Polygon
CADD Standard Requirements	
Layer/Level	Description
C-AIRF-FAAR-	FAA Region

	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	1	Continuous	1 MM	User Defined
MicroStation Standards	3		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>FaaRegionArea</i>		Extension
	FGDC	<i>FaaRegionArea</i>		Extension
	SDSFIE	<i>faa_region_area</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect this information from official FAA sources.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	As provided.		Orthometric	Ellipsoidal
			N/A	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the FAA region.		
description (VARCHAR2 (255))		Description of the FAA region.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.6.6. Land Use

Definition: A description of the human use of land and water.				
Feature Group	Cadastral			
Feature Class Name	LandUse			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level		Description		
V-PROP-LUSE-		Land Use Area		
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	5	Continuous	1 MM	User Defined
MicroStation Standards	1		7	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>LandUse</i>		Extension
	FGDC	<i>LandUse</i>		Extension
	SDSFIE	<i>land_use_area</i>		

Documentation and Submission Requirements	None		
Related Features			
Data Capture Rules: <i>Collect the land use information from state/county/local zoning or other appropriate office.</i>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal		Vertical
	N/A		N/A
Accuracy Requirements (in feet)	Horizontal		Vertical
	As provided.		Orthometric
			Ellipsoidal
Resolution	Geographic Coordinates		Distances and Elevations
	Five hundredths of arc second		Nearest foot
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the land use area.	
description (VARCHAR2 (255))		Description of the land use area.	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
useType (Enumeration: CodeLandUseType)		The way in which the land is being used.	
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.	

5.6.7. Lease Zone

Definition: A parcel of land leased by an individual, agency, or organization for their use.			
Feature Group	Cadastral		
Feature Class Name	LeaseZone		
Feature Type	Polygon		
CADD Standard Requirements			
Layer/Level	Description		
V-PROP-LEAS-	Lease line (surveyed)		
A-PROP-LEAS-	Lease line (interior)		
C-PROP-LEAS-	Lease line (exterior / ground lease)		
	Color	Linetype	Line Weight
AutoDesk Standards	1	Continuous	1 MM
MicroStation Standards	3		7
Information Assurance Level	Unclassified		
Equivalent Standards	AIXM	<i>LeaseZone</i>	Extension
	FGDC	<i>LeaseZone</i>	Extension
	SDSFIE	<i>lease_zone_area</i>	
Documentation and Submission Requirements	None		
Related Features			

Data Capture Rules: <i>Leasing information is usually obtainable from the airport.</i>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	N/A	N/A	
Accuracy Requirements (in feet)	Horizontal	Vertical	
	As provided.	Orthometric	Ellipsoidal
Resolution	Geographic Coordinates	Distances and Elevations	
	Five hundredths of arc second	Nearest foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2 (50))	Name of the feature.		
description (VARCHAR2 (255))	A brief description of the feature.		
tenantName (String 75)	The current name of the tenant occupying the leased parcel.		
permitUse (String 20)	Permitted use of the leased parcel.		
leasedArea (Real)	Area accounted for in the lease for a parcel.		
actualArea (Real)	Actual measured area of the leased parcel.		
expectedLeaseExpirationDate (Date)	The date the lease is expected to expire. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915).		
legalDescription (String 240)	The complete legal description of the property as it appears in the deed.		
status (Enumeration: codeStatus)	The status of the parcel. (Active, inactive, terminated)		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.		

5.6.8. Municipality

Definition: Boundary line of the land and water under the right, power, or authority of the municipal government.			
Feature Group	Cadastral		
Feature Class Name	Municipality		
Feature Type	Polygon		
CADD Standard Requirements			
Layer/Level	Description		
V-PROP-MUNI-	Municipal Boundary		
	Color	Linetype	Line Weight
AutoDesk Standards	1	Continuous	1 MM
MicroStation Standards	3		7
Information Assurance Level	Restricted		
Equivalent Standards	AIXM	<i>GovernmentalUnit</i>	Extension
	FGDC	<i>GovernmentalUnit</i>	Extension
	SDSFIE	<i>political_jurisdiction_municipal_line</i>	
Documentation and Submission Requirements	None		

Related Features				
Data Capture Rules: <i>Municipality boundary limits are usually obtainable from county or local government offices.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	As provided.		Orthometric	Ellipsoidal
			N/A	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		The common name associated with the property area.		
description (VARCHAR2 (255))		The description of the area.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.6.9. Parcel

Definition: A single cadastral unit, which is the spatial extent of the past, present, and future rights and interests in real property and the geographic framework to support the description of the spatial extent.			
Feature Group	Cadastral		
Feature Class Name	Parcel		
Feature Type	Polygon		
CADD Standard Requirements			
Layer/Level		Description	
V-PROP-LINE-		Property lines (Existing recorded plats)	
	Color	Linetype	Line Weight
AutoDesk Standards	4	Continuous	1 MM
MicroStation Standards	7		7
Information Assurance Level	Restricted		
Equivalent Standards	AIXM	<i>GeographicArea</i>	Extension
	FGDC	<i>GeographicArea</i>	Extension
	SDSFIE	<i>parcel_area</i>	
Documentation and Submission Requirements	No documentation is required for this feature.		
Related Features			
Data Capture Rules: <i>Parcel boundary information is usually obtainable from the county or local government.</i>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal		Vertical
	N/A		N/A

Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	As provided.	N/A	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Five hundredths of arc second	Nearest foot	
Feature Attributes			
Attribute (Datatype)	Description		
area (Real)	The size of the area, zone, or polygon in square units.		
useOfParcel (String 16)	The current primary use of the parcel.		
name (VARCHAR2 (50))	The common name associated with the property area.		
description (VARCHAR2 (255))	The description of the area.		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
parcelNumber (String 12)	Any locally used number to identify the parcel.		
legalDescription (String 240)	The complete legal description of the property as it appears in the deed.		
dateAcquired (Date)	The date the parcel was acquired by the current owner. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915).		
assessedValue (Real)	The most recent assessed value of the parcel.		
deedReference (String 30)	Reference to where the deed to the parcel is recorded in such information as Plat Book and Page.		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.		
authority (String 75)	The owner of the parcel		
previousOwner (String 75)	Previous owner of the parcel		
acquisitionType (Enumeration: CodeAcquisitionType)	The type of acquisition used to acquire the parcel		
acquisitionPurpose (String 50)	Acquisition purpose		
costToAcquire (Real)	The amount paid to the owner in U.S. dollars for the parcel		
grantProjectNumber (String 30)	The grant number if Federal funds were used to acquire the parcel		
howAcquired (enumeration: codeHowAcquired)	The manner in which the parcel was acquired		
marketValue (Real)	The assessed market value of the parcel in U.S. dollars when it was acquired		
yearAssessed (Number 4)	The year in which the market value assessment was made		
yearBuilt (Number 4)	The year in which the most recent structure(s) were built on the parcel		

5.6.10. State

Definition: Boundary line of the land and water under the right, power, or authority of the state government.	
Feature Group	Cadastral
Feature Class Name	State

Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
V-PROP-STAT-	State Boundary			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1 MM	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>GovernmentalUnit</i>		Extension
	FGDC	<i>GovernmentalUnit</i>		Extension
	SDSFIE	<i>political_jurisdiction_state_line</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>The state boundary is usually obtainable from the state government.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	As provided.		Orthometric	Ellipsoidal
			N/A	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredths of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	The common name associated with the property area.			
description (VARCHAR2 (255))	The description of the area.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.			

5.6.11. Zoning

Definition: A parcel of land zoned specifically for real estate and land management purposes; more specifically for commercial, residential, or industrial use.	
Feature Group	Cadastral
Feature Class Name	Zoning
Feature Type	Polygon
CADD Standard Requirements	
Layer/Level	Description
V-PROP-ZONG-	Zoning Areas

	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	8	Continuous	1 MM	User Defined
MicroStation Standards	9		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>Zoning</i>		Extension
	FGDC	<i>Zoning</i>		Extension
	SDSFIE	<i>zoning_area</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>Zoning limits and information is usually obtainable from the local zoning office.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	As provided.		Orthometric	Ellipsoidal
			N/A	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of a second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 (255))		A brief description of the feature.		
status (Enumeration: codeStatus)		The status of the parcel. (Active, inactive, terminated)		
landOwnerRestriction (String 16)		Codes determining the land owner restriction for the parcel.		
zoningClassification (Enumeration: CodeZoningClass)		The zoning classification of the parcel.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.7. Group: ENVIRONMENTAL

5.7.1. Environmental Contamination Area

Definition: A facility or other locational entity, (as designated by the Environmental Protection Agency) that is regulated or monitored because of environmental concerns.				
Feature Group	Environmental			
Feature Class Name	EnvironmentalContaminationArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
H-POLL-CONC-	Polluted area of concern			
H-POLL-POTN-	Potential spill, emission, or release source			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1 MM	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>EnvironmentalContaminationArea</i>	Extension	
	FGDC	<i>EnvironmentalContaminationArea</i>	Extension	
	SDSFIE	<i>environmental_regulated_facility_site</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect a closed polygon to its greatest horizontal extents.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	The name of a specific facility.			
description (VARCHAR2 (255))	A description of the source of the pollution.			
environmentalHazardCategory (String 16)	Indicates the broad category or type of the most prevalent or serious environmental hazard present at the site.			
pollutantReleaseType (String 16)	A descriptor for the type of pollutant release experienced.			
severity (String 16)	A descriptor for the severity of the pollution.			
remediationUrgency (String 16)	A code indicating the urgency for accomplishing a site remediation project.			
toxicStatusOfPollutant (String 16)	A descriptor for the toxic status of the pollution.			
status (enumeration: codeStatus)	The code indicating whether the facility status is Active or Inactive.			
dateFound (Date)	The date the pollution was discovered. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915)			
cause (String 16)	A code indicating the cause of the pollution.			

pollutantSource (String 16)	The actual or suspected source of the pollutant.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.7.2. Fauna Hazard Area

Definition: An area where there are hazards due to wildlife activities. This includes bird aircraft strike hazard (BASH) areas, and deer strike areas.				
Feature Group	Environmental			
Feature Class Name	FaunaHazardArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
V-TOPO-SPEC-	Species Site			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1 MM	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>AirspaceExtension</i>		Extension
	FGDC	<i>FaunaHazardArea</i>		Extension
	SDSFIE	<i>fauna_hazard_area</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect a closed polygon to its greatest horizontal extents.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 240 characters.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
hazardType (Enumeration: CodeHazardType)	A descriptor of the type of the hazard.			

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.7.3. Flood Zone

Definition: Areas subject to 100-year, 500-year and minimal flooding.				
Feature Group	Environmental			
Feature Class Name	Floodzone			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-TOPO-FLZN-	Flood Zone			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	5	Continuous	1 MM	User Defined
MicroStation Standards	1		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>FloodZone</i>		Extension
	FGDC	<i>FloodZone</i>		Extension
	SDSFIE	<i>flood_zone_area</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect a closed polygon to its greatest horizontal extents.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	Description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
zoneType (Enumeration: CodeZoneType)	The zoning classification of the area			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.			

5.7.4. Flora Species Site

Definition: The specific location where an individual flora species or an aggregate of flora species has been identified				
Feature Group	Environmental			
Feature Class Name	FloraSpeciesSite			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
L-PLNT-CTNR-	Containers or planters			
L-PLNT-PLTS-	Planting plants (e.g., ornamental annuals and perennials)			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	5	Continuous	1 MM	User Defined
MicroStation Standards	1		7	
CADD Standard Requirements				
Layer/Level	Description			
L-PLNT-TREE-	Trees (e.g., evergreen, deciduous, etc.)			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1 MM	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>FloraSpeciesSite</i>		Extension
	FGDC	<i>FloraSpeciesSite</i>		Extension
	SDSFIE	<i>flora_species_site</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect a point indicating the individual location or the center of a group.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	Any brief description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
plantType (String 16)	A descriptor of the type of flora.			
plantHeight (Real)	The average height of the flora species.			
endangeredSpeciesActSite (String 1)	Defines if the habitat has been designated as a critical habitat under (C) the Endangered species Act or has not been so designated (N).			

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.7.5. Forest Stand Area

Definition: A forest flora community with similar characteristics.				
Feature Group	Environmental			
Feature Class Name	ForestStandArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
L-DETL-GRAS-	Grass, sod			
L-PLNT-BEDS-	Planting beds			
L-PLNT-BUSH-	Bushes and shrubs (e.g., evergreen, deciduous)			
L-PLNT-BUSH-LINE	Bush and shrub line			
L-PLNT-GRND-	Groundcover and vines			
L-PLNT-MLCH-	Mulches - organic and inorganic			
L-PLNT-SPRG-	Sprigs			
L-PLNT-TREE-LINE	Tree line			
L-PLNT-TURF-	Lawn areas (turfing limits)			
V-SITE-VEGE-	Existing treelines and vegetation			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1 MM	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>ForestStandArea</i>		Extension
	FGDC	<i>ForestStandArea</i>		Extension
	SDSFIE	<i>flora_species_management_area</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>In capturing the limits of the tree outlines create the graphical line in a right hand direction so patterning of the element will form the scallops on the correct side of the forest outline.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		

description (VARCHAR2 (255))	A description of the flora species.
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
habitatCategory (String 16)	Discriminator - The designation or type of the special wildlife habitat.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.7.6. Hazardous Material Storage Site

Definition: A defined or bounded geographical area designated and used for the storage of contained hazardous materials.				
Feature Group	Environmental			
Feature Class Name	HazardousMaterialStorageSite			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
H-STOR-HAZM-	Hazardous materials			
H-STOR-HAZW-	Hazardous waste			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	5	Continuous	1 MM	User Defined
MicroStation Standards	1		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>HazardousMaterialStorageSite</i>	Extension	
	FGDC	<i>HazardousMaterialStorageSite</i>	Extension	
	SDSFIE	<i>Contained_hazwaste_storage_site</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect closed polygon to its greatest horizontal extents.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 240 characters.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			

storeHazardousMaterialCategory (Enumeration: CodeHazardCategory)	The general type or category of contained hazardous material stored.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.7.7. Noise Contour

Definition: An area that describes the noise attributed to operations. For aircraft operations, the Day/Night average sound level (Ldn) descriptor is typically used to categorize noise levels. [Source: 14 CFR 150]				
Feature Group	Environmental			
Feature Class Name	NoiseContour			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-TOPO-AUZN-	Noise contour zone			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1	User Defined
MicroStation Standards	2	Continuous	7	User Defined
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>NoiseContour</i>	Extension	
	FGDC	<i>NoiseContour</i>	Extension	
	SDSFIE	<i>Noise_contour_line</i>		
Documentation and Submission Requirements	Noise contour map			
Related Features				
Data Capture Rules: <i>Acquire from the Integrated Noise Model (INM).</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	N/A		Orthometric	Ellipsoidal
	N/A		N/A	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	N/A		N/A	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	A description for the noise zone.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
contourValue (Real)	The decibel level of the contour line			

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.7.8. Noise Incident

Definition: A formal complaint by an individual or group regarding excessive noise resulting from airport operations.				
Feature Group	Environmental			
Feature Class Name	NoiseIncident			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-TOPO-AUCO-	Noise Complaint			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	5	Continuous	1 MM	User Defined
MicroStation Standards	1		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>NoiseIncident</i>		Extension
	FGDC	<i>NoiseIncident</i>		Extension
	SDSFIE	<i>noise_incident_point</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Place collection point at address of complaint.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 50 ft		Orthometric	Ellipsoidal
			N/A	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	A general description of the complete incident, including any reference material.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
reporter (String 50)	The name of the individual or organization reporting the incident.			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			

Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.
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5.7.9. Noise Monitoring Point

Definition: The location of noise sensing equipment or where a noise sample is taken.				
Feature Group	Environmental			
Feature Class Name	NoiseMonitoringPoint			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-TOPO-AUST-	Noise Monitoring Station			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4	Point	1 MM	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>NoiseMonitoringPoint</i>		Extension
	FGDC	<i>NoiseMonitoringPoint</i>		Extension
	SDSFIE	<i>noise_monitoring_point</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>Collect point at the center of monitoring station.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	Description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.			

5.7.10. Sample Collection Point

Definition: The physical location at which one or more environmental hazards field samples are collected.	
Feature Group	Environmental
Feature Class Name	SampleCollectionPoint

Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
H-SAMP-AIRS-	Air samples			
C-TOPO-BORE-	Boring locations			
H-SAMP-BIOL-	Biological samples			
H-SAMP-GWTR-	Ground water samples			
H-SAMP-SEDI-	Sediment samples			
H-SAMP-SOIL-	Soil samples			
H-SAMP-SOLI-	Solid material samples			
H-SAMP-SWTR-	Surface water samples			
H-SAMP-WAST-	Waste samples			
V-TOPO-BORE-	Boring locations			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1 MM	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>SampleCollectionPoint</i>		Extension
	FGDC	<i>SampleCollectionPoint</i>		Extension
	SDSFIE	<i>field_sample_collection_location_point</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect point at center of sample location.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 1 ft		Orthometric	Ellipsoidal
			± 1 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 (255))		Descriptor providing any additional information to describe the sampling location in text format (e.g., monitoring well located 10 feet northeast of building 624 within spill area). IRPIMS. [Source: SDSFIE Feature Table]		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
collectionPointLocation (Enumeration: CodeSamplePointLocation)		Code describing the type of location which is undergoing sampling (e.g., bh= borehole, wl=well).		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		

Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.
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5.7.11. Shoreline

Definition: The boundary where land meets the edge of a large body of fresh or salt water.				
Feature Group	Environmental			
Feature Class Name	Shoreline			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-DRED-OHWM-	Ordinary high water marks			
C-TOPO-SHOR-	Shorelines, land features, and references			
H-MNST-GWTR-	Ground water			
H-MNST-SWTR-	Surface water			
S-GRDL-WATR-	Water surface			
V-SITE-EWAT-	Water features			
V-SITE-WATR-	Water features			
V-TOPO-SHOR-	Shorelines, land features, and references			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	1	Continuous	1 MM	User Defined
MicroStation Standards	3		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>GeoBorderExtension</i>		Extension
	FGDC	<i>Shoreline</i>		Extension
	SDSFIE	<i>shoreline</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect a closed polygon at its greatest horizontal extents coincident with land/water interface. Close the polygon at arbitrary points ensuring sufficient coverage of the water body.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	A commonly used name for the shoreline.			
description (VARCHAR2 (255))	A local description for the shoreline.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
shorelineType (Enumeration: CodeShorelineType)	Discriminator - A value indicating the type or kind of shoreline.			

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.7.12. Wetland

Definition: Transitional lands between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. The soils are predominantly saturated with water and the plants and animals that live there are specialized for this ecosystem.				
Feature Group	Environmental			
Feature Class Name	Wetland			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
V-TOPO-WETL	Wetland			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1 MM	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>AirspaceExtension</i>		Extension
	FGDC	<i>Wetland</i>		Extension
	SDSFIE	<i>Wetland_area</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect a closed polygon to establish the boundary between wetlands and uplands (or non-wetlands). There are two delineation procedures developed at the federal level and several states have their own wetland delineation procedures. Contact federal/state/local environmental agency for assistance.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 10 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Any commonly used name for the wetland.			
description (VARCHAR2 (255))	A description of the wetland.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
featureType (String 16)	A descriptor of how the wetland is depicted graphically.			

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.8. Group: GEOSPATIAL

5.8.1. Airport Control Point – Runway Intersection Point

Definition: Use this feature for points on the airfield possessing significant geographic importance, such as the Primary and Secondary Airport Control Stations (PACS/SACS), Runway Intersections, Airport Elevation, centerline perpendicular points for NAVAIDs, Stopway Ends, Profile Points, and the Touchdown Zone Elevation (TDZE).				
Feature Group	Geospatial			
Feature Class Name	AirportControlPoint			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-TOPO-RNYE-	Runway centerline elevation point			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>SurveyControlPointExtension</i>		Extension
	FGDC	<i>AirportControlPoint</i>		
	SDSFIE	<i>Control_point</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect the point where the centerlines of two, or more, runways intersect.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 0.25 ft	± 0.20 ft
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest one foot	
Feature Attributes				
Attribute (Datatype)	Description			
permanentId (String 6)	Permanent point identifier assigned by NGS to PACS and SACS [Source: NGS]			
pointType (Enumeration: CodePointType)	Contains the allowable values of a point type used by the ControlPoint feature. The point types may be supplementally provided as subtypes of ControlPoints for ease of use and clarification.			
name (VARCHAR2(50))	Any commonly used name for the control point.			
runwayDesignator (String 7)	Not applicable to this point type			
runwayEndDesignator (String 3)	Not applicable to this point type			
monumentType (Enumeration: CodeMonumentType)	The type of monument as defined by the Corps of Engineers EM 110-1-1002.			
description (VARCHAR2 (255))	The monument description.			

status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
ellipsoidHeight (Real)	The height above the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question. Also called the geodetic height. [Source: NGS]
yearOfSurvey (Number 4)	The year of the most recent runway end survey used to compute the ARP
dateRecovered (Date)	The date the monument was last field recovered. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915).
recoveredCondition (Enumeration: CodeRecoveredCondition)	The condition and type of the marker (witness post) used to identify the location of the monument.
fieldBook (String 254)	The field book.
globalPositionSystemSuitable (Boolean)	A Boolean indicating GPS suitability.
coordinateZone (Enumeration: CodeCoordinateZone)	The State Plane Coordinate System Code for where the airport is primarily located.
stampedDesignation (String 50)	The designation stamped onto the monument.
epoch (String 10)	Survey epoch used to establish the control point.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.8.2. Airport Control Point – Airport Elevation

Definition: Use this feature for points on the airfield possessing significant geographic importance, such as the Primary and Secondary Airport Control Stations (PACS/SACS), Runway Intersections, Airport Elevation, centerline perpendicular points for NAVAIDs, Stopway Ends, Profile Points, and the Touchdown Zone Elevation (TDZE).				
Feature Group	Geospatial			
Feature Class Name	AirportControlPoint			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-TOPO-RNYE-	Runway centerline elevation point			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>AirportControlPoint</i>		
	FGDC	<i>SurveyControlPointExtension (Extension)</i>		
	SDSFIE	<i>Control_point</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: Calculate the Airport Elevation using the runway profile data. The Airport Elevation is the highest point along all usable runways.				

Monumentation	Filled in by survey group only			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 1 ft		Orthometric	Ellipsoidal
			± 0.25 ft	± 0.20 ft
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest one foot	
Feature Attributes				
Attribute (Datatype)		Description		
permanentId (String 6)		Permanent point identifier assigned by NGS to PACS and SACS [Source: NGS]		
pointType (Enumeration: CodePointType)		Contains the allowable values of a point type used by the ControlPoint feature. The point types may be supplementally provided as subtypes of ControlPoints for ease of use and clarification.		
name (VARCHAR2 (50))		Any commonly used name for the control point.		
runwayDesignator (String 7)		Specify Runway Designator		
runwayEndDesignator (String 3)		Not applicable to this point type		
monumentType (Enumeration: CodeMonumentType)		The type of monument as defined by the Corps of Engineers EM 110-1-1002.		
description (VARCHAR2 (255))		The monument description.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
ellipsoidHeight (Real)		The height above the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question. Also called the geodetic height. [Source: NGS]		
yearOfSurvey (Number 4)		The year of the most recent runway end survey used to compute the ARP		
dateRecovered (Date)		The date the monument was last field recovered. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915).		
recoveredCondition (Enumeration: CodeRecoveredCondition)		The condition and type of the marker (witness post) used to identify the location of the monument.		
fieldBook (String 254)		The field book.		
globalPositionSystemSuitable (Boolean)		A Boolean indicating GPS suitability.		
coordinateZone (Enumeration: CodeCoordinateZone)		The State Plane Coordinate System Code for where the airport is primarily located.		
stampedDesignation (String 50)		The designation stamped onto the monument.		
epoch (String 10)		Survey epoch used to establish the control point.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.8.3. Airport Control Point – Centerline Perpendicular Points

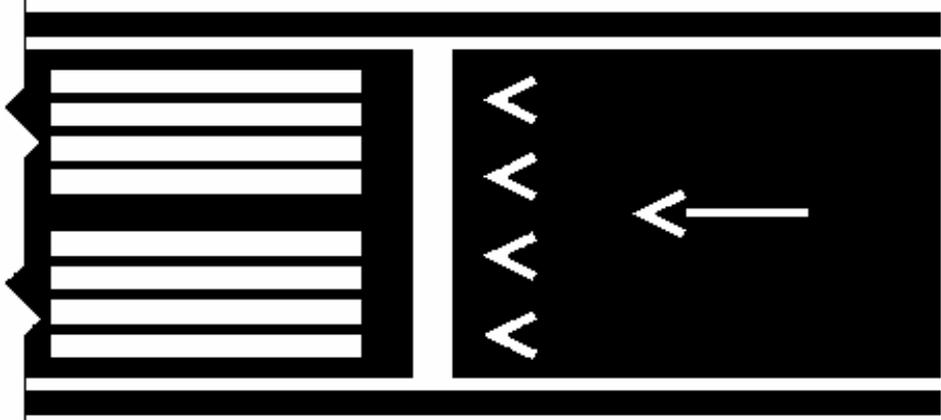
Definition: Use this feature for points on the airfield possessing significant geographic importance, such as the Primary and Secondary Airport Control Stations (PACS/SACS), Runway Intersections, Airport Elevation, centerline perpendicular points for NAVAIDs, Stopway Ends, Profile Points, and the Touchdown Zone Elevation (TDZE).				
Feature Group	Geospatial			
Feature Class Name	AirportControlPoint			
Feature Type	3D Point			
CADD Standard Requirements				
Layer/Level	Description			
C-TOPO-RNYE-	Runway centerline elevation point			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM			
	FGDC			
	SDSFIE	Control_point		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collected point along runway centerline perpendicular to the location of required NAVAIDs. ILS, MLS, PAR, TLS, and VGSI NAVAIDs systems require this measurement refer to the appropriate feature class description for the NAVAID.</i>				
Monumentation	Filled in by survey group only			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
			Orthometric	Ellipsoidal
	± 1 ft		± 0.25ft	± 0.25 ft
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest tenth of a foot	
Feature Attributes				
Attribute (Datatype)	Description			
permanentId (String 6)	Permanent point identifier assigned by NGS to PACS and SACS [Source: NGS]			
pointType (Enumeration: CodePointType)	Contains the allowable values of a point type used by the ControlPoint feature. The point types may be supplementally provided as subtypes of ControlPoints for ease of use and clarification.			
name (VARCHAR2 (50))	Any commonly used name for the control point.			
runwayDesignator (String 7)	Not applicable to this point type			
runwayEndDesignator (String 3)	Not applicable to this point type			
monumentType (Enumeration: CodeMonumentType)	The type of monument as defined by the Corps of Engineers EM 110-1-1002.			
description (VARCHAR2 (255))	The monument description.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			

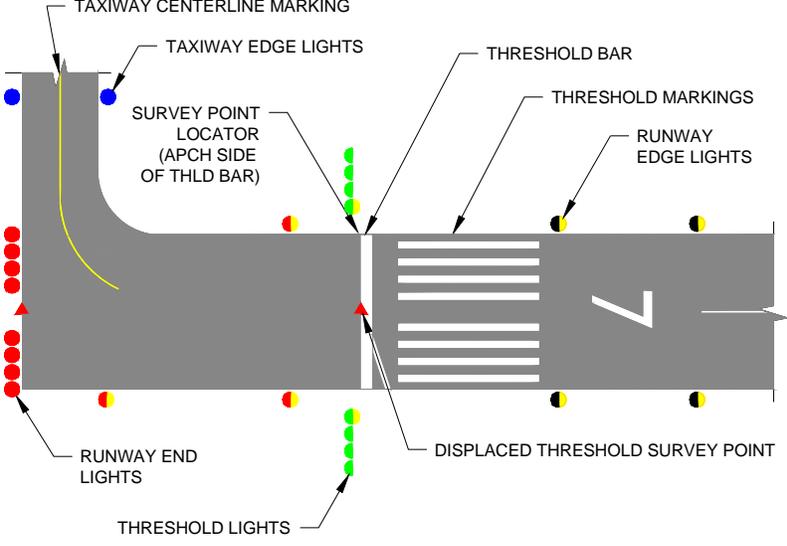
ellipsoidHeight (Real)	The height above the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question. Also called the geodetic height. [Source: NGS]
yearOfSurvey (Number 4)	The year of the most recent runway end survey used to compute the ARP
dateRecovered (Date)	The date the monument was last field recovered. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915).
recoveredCondition (Enumeration: CodeRecoveredCondition)	The condition and type of the marker (witness post) used to identify the location of the monument.
fieldBook (String 254)	The field book.
globalPositionSystemSuitable (Boolean)	A Boolean indicating GPS suitability.
coordinateZone (Enumeration: CodeCoordinateZone)	The State Plane Coordinate System Code for where the airport is primarily located.
stampedDesignation (String 50)	The designation stamped onto the monument.
epoch (String 10)	Survey epoch used to establish the control point.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.8.4. Airport Control Point – Displaced Threshold Point

Definition: Use this feature for points on the airfield possessing significant geographic importance, such as the Displaced Threshold, Primary and Secondary Airport Control Stations (PACS/SACS), Runway Intersections, Airport Elevation, centerline perpendicular points for NAVAIDs, Stopway Ends, Profile Points, and the Touchdown Zone Elevation (TDZE).				
Feature Group	Geospatial			
Feature Class Name	AirportControlPoint			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-RUNW-DISP-	Runway centerline elevation point			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM			
	FGDC			
	SDSFIE	<i>Control_point</i>		
Documentation and Submission Requirements	In addition to the requirements of paragraphs 1.5.2 and 1.5.3 , document the selected location using four digital photographs.			

	 <p>Photograph Type #1 (Eye Level). Photo taken from above the mark, showing an area around the mark about 1 meter in diameter.</p>	 <p>Photograph Type #2 (Approach). Photo showing tripod over the mark in foreground and approach in the background.</p>
	 <p>Photograph Type #3 (Across Runway). Photo taken from the side of the runway looking across the end of the runway, with a tripod or arrow indicating the end point; include any features used to identify the runway end.</p>	 <p>Photograph Type #4 (Close-in). Close-up photo depicting nail, washer and markings.</p>

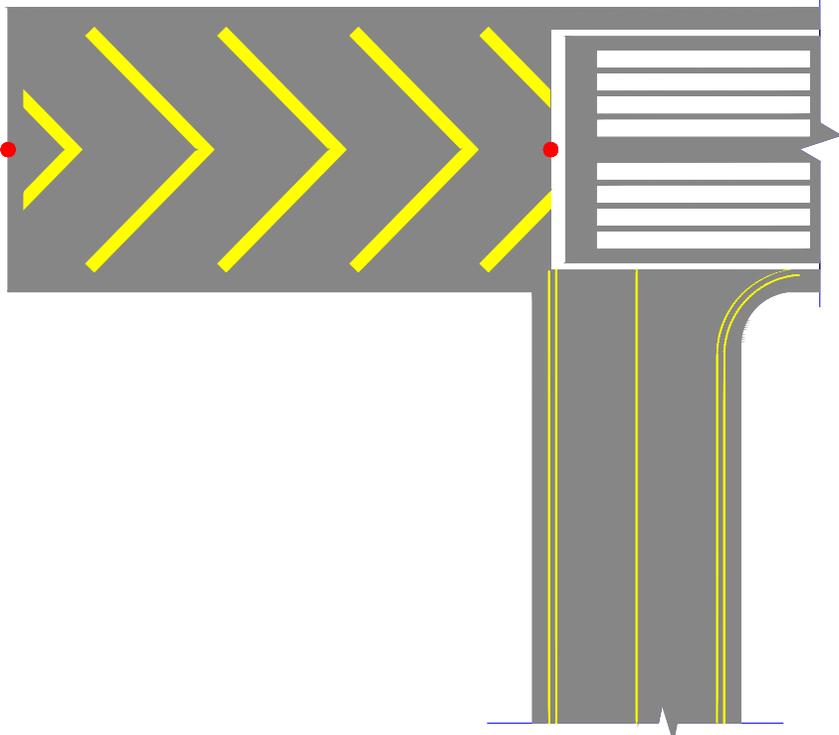
<p>Related Features</p>	
<p>Data Capture Rule: <i>Establish the displaced threshold on the runway centerline a specified distance from the runway end. The area between the runway end and the displaced threshold should be marked with white arrows.</i></p>	
	
<p>Monumentation</p>	<p>When the ends of the runway surface have been determined, mark the positions using a nail and washer with the setting company's name and year inscribed, chisel square, or paint if possible with a distinctive inscription to ensure future identification.</p>
<p>Survey Point Location</p>	<p style="text-align: center;">Paved Runway</p> <p>Survey Point Locator is the approach side of threshold bar or trim line connecting outboard threshold lights. Supporting features include:</p> <ul style="list-style-type: none"> • Threshold lights near threshold • Runway end lights sited at another location on approach side of threshold lights • White or amber runway edge lights, not blue taxiway lights, between threshold and end of runway • Runway number near threshold • White displaced threshold markings on approach side of threshold bar • Runway side stripe on Precision Instrument Runways <p>Comments: Use caution, especially on smaller, poorly marked airports, not to confuse a displaced threshold with the end of a runway with an aligned taxiway.</p>

	 <p>NOTES:</p> <ol style="list-style-type: none"> 1. THIS GRAPHIC IS NOT TO SCALE. FEATURES ARE SYMBOLIZED AND INTENDED ILLUSTRATION PURPOSES ONLY. 2. RUNWAY/STOPWAY SURVEYS SHOULD BE DISCUSSED WITH APPROPRIATE AIRPORT AUTHORITIES. 3. SURVEY POINT LOCATOR: <ul style="list-style-type: none"> • APPROACH SIDE OF THRESHOLD BAR 4. SUPPORTING FEATURES <ul style="list-style-type: none"> • RUNWAY END LIGHTS NEAR END OF PAVEMENT • THRESHOLD LIGHTS NEAR THRESHOLD BAR • RUNWAY NUMBER AND THRESHOLD MARKINGS NEAR THRESHOLD BAR • RUNWAY EDGE LIGHTS BETWEEN THRESHOLD AND END OF PAVEMENT 5. COMMENTS: <ul style="list-style-type: none"> • NONSTANDARD MARKINGS FOR DISPLACED THRESHOLD • THRESHOLD LIGHTS MAY NOT BE PRECISELY ALIGNED WITH APPROACH SIDE OF THRESHOLD BAR • DO NOT CONFUSE THIS SITUATION WITH A RUNWAY END AND ALIGNED TAXIWAY 						
	<p style="text-align: center;">Unpaved Runway</p> <p>Survey Point Locator is the trim line connecting outboard threshold lights or the trim Line connecting outboard threshold day markers. Supporting features include</p> <ul style="list-style-type: none"> • The runway end lights sited at another location on approach side of threshold lights (if runway lighted) • The runway end day markers located at another location on approach side of threshold (if runway unlighted) <p>Comments: Displaced thresholds on unpaved runways are unusual. If this situation is suspected, verify that the runway end is identifiable at another location on the approach side of the threshold.</p>						
<p>Accuracy Requirements (in feet)</p>	<p>Horizontal</p> <p>± 1 ft</p>	<p>Vertical</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Orthometric</td> <td style="text-align: center;">Ellipsoidal</td> </tr> <tr> <td style="text-align: center;">± 0.25 ft</td> <td style="text-align: center;">± 0.20 ft</td> </tr> </table>		Orthometric	Ellipsoidal	± 0.25 ft	± 0.20 ft
Orthometric	Ellipsoidal						
± 0.25 ft	± 0.20 ft						
<p>Resolution</p>	<p>Geographic Coordinates</p> <p>Hundredth of arc second</p>	<p>Distances and Elevations</p> <p>Nearest tenth of a foot</p>					

Feature Attributes	
Attribute (Datatype)	Description
permanentId (String 6)	Permanent point identifier assigned by NGS to PACS and SACS [Source: NGS]
pointType (Enumeration: CodePointType)	Contains the allowable values of a point type used by the ControlPoint feature. The point types may be supplementally provided as subtypes of ControlPoints for ease of use and clarification.
runwayDesignator (String 7)	Not applicable to this point type
runwayEndDesignator (String 3)	Specify RunwayEnd Designator
name (VARCHAR2 (50))	Any commonly used name for the control point.
monumentType (Enumeration: CodeMonumentType)	The type of monument as defined by the Corps of Engineers EM 110-1-1002.
description (VARCHAR2 (255))	The monument description.
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
ellipsoidHeight (Real)	The height above the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question. Also called the geodetic height. [Source: NGS]
yearOfSurvey (Number 4)	The year of the most recent runway end survey used to compute the ARP
dateRecovered (Date)	The date the monument was last field recovered. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915).
recoveredCondition (Enumeration: CodeRecoveredCondition)	The condition and type of the marker (witness post) used to identify the location of the monument.
fieldBook (String 254)	The field book.
globalPositionSystemSuitable (Boolean)	A Boolean indicating GPS suitability.
coordinateZone (Enumeration: CodeCoordinateZone)	The State Plane Coordinate System Code for where the airport is primarily located.
stampedDesignation (String 50)	The designation stamped onto the monument.
epoch (String 10)	Survey epoch used to establish the control point.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.8.5. Airport Control Point – Stopway Ends

Definition: Use this feature for points on the airfield possessing significant geographic importance, such as the Primary and Secondary Airport Control Stations (PACS/SACS), Runway Intersections, Airport Elevation, centerline perpendicular points for NAVAIDs, Stopway Ends, Profile Points, and the Touchdown Zone Elevation (TDZE).	
Feature Group	Geospatial
Feature Class Name	AirportControlPoint
Feature Type	Point

CADD Standard Requirements				
Layer/Level	Description			
C-TOPO-RNYE-	Runway centerline elevation point			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM			
	FGDC			
	SDSFIE	<i>Control_point</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: Collect point at physical end of stopway along extended centerline of runway.				
				
Displays the standard marking a stopway or blast pad.				

Monumentation	The selected survey point must be marked and documented for verification by NGS and inclusion in the Airports GIS database. When the ends of the runway surface have been determined, mark the positions using a nail and washer, chisel square, or paint if possible with a distinctive inscription to ensure future identification. Mark the survey point with a nail and washer inscribed with the setting company's name and year.		
Survey Point Location		Horizontal	Vertical
	Concrete Stopway	Survey Point Locator is the limit of construction or the trim line. Supporting Features include stopway chevrons. The stopway end survey point must be on the runway centerline extended. Stopways must be at least as wide as the runway but may be wider.	
	Paved/Non-concrete	Survey Point Locator is the limit of construction or the trim line at first good pavement. Supporting Features are the stopway chevrons. The stopway end survey point must be on the runway centerline extended. Stopways must be at least as wide as the runway but may be wider.	
	Unpaved	Survey Point Locator is the trim line at an apparent runway/stopway surface end. The stopway end survey points must be on the runway centerline extended.	
Accuracy Requirements (in feet)	Horizontal		Vertical
	± 1 ft		Orthometric ± 0.25 ft
Resolution	Geographic Coordinates		Distances and Elevations
	Hundredth of arc second		Nearest tenth of a foot
Feature Attributes			
Attribute (Datatype)		Description	
permanentId (String 6)		Permanent point identifier assigned by NGS to PACS and SACS [Source: NGS]	
pointType (Enumeration: CodePointType)		Contains the allowable values of a point type used by the ControlPoint feature. The point types may be supplementally provided as subtypes of ControlPoints for ease of use and clarification.	
name (VARCHAR2 (50))		Any commonly used name for the control point.	
runwayDesignator (String 7)		Not applicable to this point type	
runwayEndDesignator (String 3)		Specify RunwayEnd Designator	
monumentType (Enumeration: CodeMonumentType)		The type of monument as defined by the Corps of Engineers EM 110-1-1002.	
description (VARCHAR2 (255))		The monument description.	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
ellipsoidHeight (Real)		The height above the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question. Also called the geodetic height. [Source: NGS]	
yearOfSurvey (Number 4)		The year of the most recent runway end survey used to compute the ARP	

dateRecovered (Date)	The date the monument was last field recovered. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915).
recoveredCondition (Enumeration: CodeRecoveredCondition)	The condition and type of the marker (witness post) used to identify the location of the monument.
fieldBook (String 254)	The field book.
globalPositionSystemSuitable (Boolean)	A Boolean indicating GPS suitability.
coordinateZone (Enumeration: CodeCoordinateZone)	The State Plane Coordinate System Code for where the airport is primarily located.
stampedDesignation (String 50)	The designation stamped onto the monument.
epoch (String 10)	Survey epoch used to establish the control point.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.8.6. Airport Control Point – Profile Points

Definition: Use this feature for points on the airfield possessing significant geographic importance, such as the Primary and Secondary Airport Control Stations (PACS/SACS), Runway Intersections, Airport Elevation, centerline perpendicular points for NAVAIDs, Stopway Ends, Profile Points, and the Touchdown Zone Elevation (TDZE).				
Feature Group	Geospatial			
Feature Class Name	AirportControlPoint			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-TOPO-RNYE-	Runway centerline elevation point			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM			
	FGDC			
	SDSFIE	Control_point		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect three-dimensional points along all usable runways centerlines. Reduction of data must resolve to a profile with points at 10 foot intervals at certificated airports and no more than 50 feet at all airports.</i>				
Monumentation	None.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	

Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 1 ft	± 0.25 ft	± 0.20 ft
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest tenth of a foot	
Feature Attributes			
Attribute (Datatype)		Description	
permanentId (String 6)		Permanent point identifier assigned by NGS to PACS and SACS [Source: NGS]	
pointType (Enumeration: CodePointType)		Contains the allowable values of a point type used by the ControlPoint feature. The point types may be supplementally provided as subtypes of ControlPoints for ease of use and clarification.	
name (VARCHAR2 (50))		Any commonly used name for the control point.	
runwayDesignator (String 7)		Specify Runway Designator	
runwayEndDesignator (String 3)		Not applicable to this point type	
monumentType (Enumeration: CodeMonumentType)		The type of monument as defined by the Corps of Engineers EM 110-1-1002.	
description (VARCHAR2 (255))		The monument description.	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
ellipsoidHeight (Real)		The height above the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question. Also called the geodetic height. [Source: NGS]	
yearOfSurvey (Number 4)		The year of the most recent runway end survey used to compute the ARP	
dateRecovered (Date)		The date the monument was last field recovered. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915).	
recoveredCondition (Enumeration: CodeRecoveredCondition)		The condition and type of the marker (witness post) used to identify the location of the monument.	
fieldBook (String 254)		The field book.	
globalPositionSystemSuitable (Boolean)		A Boolean indicating GPS suitability.	
coordinateZone (Enumeration: CodeCoordinateZone)		The State Plane Coordinate System Code for where the airport is primarily located.	
stampedDesignation (String 50)		The designation stamped onto the monument.	
epoch (String 10)		Survey epoch used to establish the control point.	
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.	

5.8.7. Airport Control Point – Touchdown Zone Elevation (TDZE)

Definition: Use this feature for points on the airfield possessing significant geographic importance, such as the Primary and Secondary Airport Control Stations (PACS/SACS), Runway Intersections, Airport Elevation, centerline perpendicular points for NAVAIDs, Stopway Ends, Profile Points, and the Touchdown Zone Elevation (TDZE).

Feature Group	Geospatial			
Feature Class Name	AirportControlPoint			
Feature Type	3D Point			
CADD Standard Requirements				
Layer/Level	Description			
C-TOPO-RNYE-	Runway centerline elevation point			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM			
	FGDC			
	SDSFIE	Control_point		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>The TDZE is the highest elevation along the runway centerline within the first 3000 feet from the threshold and extracted from the centerline profile data.</i>				
Monumentation	None.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 1 ft		Orthometric	Ellipsoidal
			± 0.25 ft	± 0.20 ft
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest tenth of a foot	
Feature Attributes				
Attribute (Datatype)		Description		
permanentId (String 6)		Permanent point identifier assigned by NGS to PACS and SACS [Source: NGS]		
pointType (Enumeration: CodePointType)		Contains the allowable values of a point type used by the ControlPoint feature. The point types may be supplementally provided as subtypes of ControlPoints for ease of use and clarification.		
runwayDesignator (String 7)		Not applicable to this point type		
runwayEndDesignator (String 3)		Specify Runway End Designator		
name (VARCHAR2 (50))		Any commonly used name for the control point.		
monumentType (Enumeration: CodeMonumentType)		The type of monument as defined by the Corps of Engineers EM 110-1-1002.		
description (VARCHAR2 (255))		The monument description.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
ellipsoidHeight (Real)		The height above the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question. Also called the geodetic height. [Source: NGS]		
yearOfSurvey (Number 4)		The year of the most recent runway end survey used to compute the ARP		

dateRecovered (Date)	The date the monument was last field recovered. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915).
recoveredCondition (Enumeration: CodeRecoveredCondition)	The condition and type of the marker (witness post) used to identify the location of the monument.
fieldBook (String 254)	The field book.
globalPositionSystemSuitable (Boolean)	A Boolean indicating GPS suitability.
coordinateZone (Enumeration: CodeCoordinateZone)	The State Plane Coordinate System Code for where the airport is primarily located.
stampedDesignation (String 50)	The designation stamped onto the monument.
epoch (String 10)	Survey epoch used to establish the control point.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.8.8. Airport Control Point – Primary and Secondary Airport Control Stations (PACS/SACS)

Definition: Use this feature for points on the airfield possessing significant geographic importance, such as the Primary and Secondary Airport Control Stations (PACS/SACS), Runway Intersections, Airport Elevation, centerline perpendicular points for NAVAIDs, Stopway Ends, Profile Points, and the Touchdown Zone Elevation (TDZE).				
Feature Group	Geospatial			
Feature Class Name	AirportControlPoint			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
V-SURV-DATA-CTPT-	Survey data (benchmarks and horizontal control points or monuments)			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM			
	FGDC			
	SDSFIE	<i>Control_point</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: Refer to AC 150/5300-16 for guidance on the airport control marks.				
Monumentation	None.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
			Orthometric	Ellipsoidal
Refer to AC 150/5300-16 for accuracy requirements.				

Resolution	Geographic Coordinates	Distances and Elevations
	Thousandth of arc second	Nearest hundredth of a foot
Feature Attributes		
Attribute (Datatype)	Description	
permanentId (String 6)	Permanent point identifier assigned by NGS to PACS and SACS [Source: NGS]	
pointType (Enumeration: CodePointType)	Contains the allowable values of a point type used by the ControlPoint feature. The point types may be supplementally provided as subtypes of ControlPoints for ease of use and clarification.	
name (VARCHAR2 (50))	Any commonly used name for the control point.	
runwayDesignator (String 7)	Not applicable to this point type	
runwayEndDesignator (String 3)	Not applicable to this point type	
monumentType (Enumeration: CodeMonumentType)	The type of monument as defined by the Corps of Engineers EM 110-1-1002.	
description (VARCHAR2 (255))	The monument description.	
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
ellipsoidHeight (Real)	The height above the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question. Also called the geodetic height. [Source: NGS]	
yearOfSurvey (Number 4)	The year of the most recent runway end survey used to compute the ARP	
dateRecovered (Date)	The date the monument was last field recovered. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915).	
recoveredCondition (Enumeration: CodeRecoveredCondition)	The condition and type of the marker (witness post) used to identify the location of the monument.	
fieldBook (String 254)	The field book.	
globalPositionSystemSuitable (Boolean)	A Boolean indicating GPS suitability.	
coordinateZone (Enumeration: CodeCoordinateZone)	The State Plane Coordinate System Code for where the airport is primarily located.	
stampedDesignation (String 50)	The designation stamped onto the monument.	
epoch (String 10)	Survey epoch used to establish the control point.	
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.	

5.8.9. Coordinate Grid Area

Definition: A regular pattern of horizontal and vertical lines used to represent regular coordinate intervals along the x and y axis. This grid line can be used to generate an arbitrary grid system which is common on locator maps.	
Feature Group	Geospatial
Feature Class Name	CoordinateGridArea
Feature Type	Line

CADD Standard Requirements				
Layer/Level	Description	Layer/Level	Description	
C-DETL-GRPH-	Graphics, gridlines, non-text items	S-GRID-MSC3-	Miscellaneous grid lines (Type 3)	
C-GRID-FRAM-	Frame (bounding frame of an area referenced by a grid)	S-GRID-MSC4-	Miscellaneous grid lines (Type 4)	
C-GRID-MAJR-	Major grid lines	S-GRID-VERT-	Primary grid lines (vertical)	
C-GRID-MINR-	Minor grid lines	V-GRID-FRAM-	Frame	
S-GRID-HORZ-	Primary grid lines (horizontal)	V-GRID-MAJR-	Major grid lines	
S-GRID-MSC-	Miscellaneous grid lines (Type 1)	V-GRID-MINR-	Minor grid lines	
S-GRID-MSC2-	Miscellaneous grid lines (Type 2)			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1 MM	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>CoordinateGridArea</i>		Extension
	FGDC	<i>CoordinateGridArea</i>		
	SDSFIE	<i>Coordinate_grid_area</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules:	<i>N/A</i>			
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	N/A		Orthometric	Ellipsoidal
	N/A		N/A	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	N/A		N/A	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		The name, code or identifier used to refer to an individual grid cell.		
description (VARCHAR2 (255))		Description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
gridType (Enumeration: CodeGridType)		Code indicating the type of grid.		

Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.
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5.8.10. Elevation Contour

Definition: Connecting points on the surface of the earth of equal vertical elevation representing some fixed elevation interval.				
Feature Group	Geospatial			
Feature Class Name	ElevationContour			
Feature Type	Line			
CADD Standard Requirements				
Layer/Level	Description			
C-TOPO-MAJR-	Major contours			
C-TOPO-MINR-	Minor contours			
V-TOPO-MAJR-	Major contours			
V-TOPO-MAJR-IDEN	Major contours			
V-TOPO-MINR-	Minor contours			
V-TOPO-MINR-IDEN	Minor contours			
C-TOPO-MINR-ONEF	Minor contours			
C-TOPO-MINR-TWOF	Minor contours			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	2	N/A	1 MM	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>ElevationContour</i>		Extension
	FGDC	<i>ElevationContour</i>		
	SDSFIE	<i>elevation_contour_line</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: N/A				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	One-half contour interval		Orthometric	Ellipsoidal
			One-half contour interval	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Five tenths of foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 (255))		Description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
length (Real)		The overall length of the feature.		

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
contourValue	The elevation of the contour line.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.8.11. Image Area

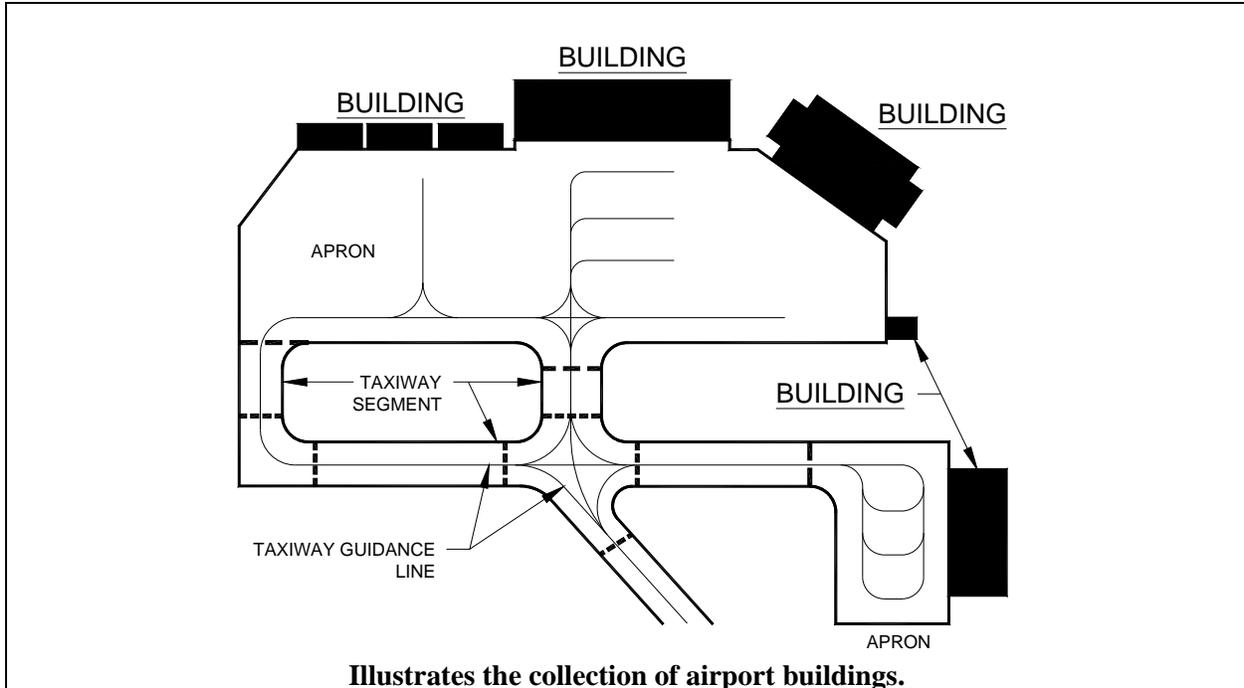
Definition: The image footprint or coverage area.				
Feature Group	Geospatial			
Feature Class Name	ImageArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
V-AERI-BNDY-	Aerial photograph boundaries			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	1	Continuous	1 MM	User Defined
MicroStation Standards	3		7	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>ImageArea</i>		Extension
	FGDC	<i>ImageArea</i>		
	SDSFIE	<i>Image_area</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules:	<i>Boundary of aerial imagery.</i>			
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	Accuracy of the imagery		Orthometric	Ellipsoidal
			N/A	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	N/A		N/A	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
frameId (String 20)	Image identification number of the covered area.			
photoDate (Date)	Date the aerial photography was flown. Format for date is YYYYMMDD (i.e. September 15, 1994 = 19940915)			

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.9. Group: MAN MADE STRUCTURES

5.9.1. Building

Definition: A three-dimensional structure (i.e. hangars, terminals, etc.) modeled with a bounding polygon.				
Feature Group	Manmade Structures			
Feature Class Name	Building			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
A-ELEV-OTLN-	Building outlines			
C-BLDG-OTLN-	Buildings and other structures			
G-PLAN-OTLN-	Floor outline/perimeter/building footprint			
H-BLDG-OTLN-	Command posts, information centers			
M-ELEV-OTLN-	Building outlines			
V-BLDG-OTLN-	Buildings and other structures			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1 MM	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>Building</i>	Extension	
	FGDC	<i>Building</i>	Extension	
	SDSFIE	<i>structure_existing_site</i>		
Documentation and Submission Requirements	None			
Related Features				
<p>Data Capture Rules: Determine the terminal building complex, hangars, maintenance facilities, and other prominent buildings directly associated with aircraft operations and directly connected to the apron as individual polygon objects. Collect by field survey methods recently constructed and/or completed buildings not visible on imagery and meeting the above criteria. Extract the building outline feature as the footprint of the building at ground level. Determine the height at the highest point of the corresponding building. The AGL height of the polygon is determined as the difference between the base elevation and top elevation on the roof.</p> <p>NOTE: If the building penetrates an OIS or is selected as a representative object, additionally identify, classify and document the building as an <u>ObstructionArea</u> and associated accuracy.</p>				



Illustrates the collection of airport buildings.

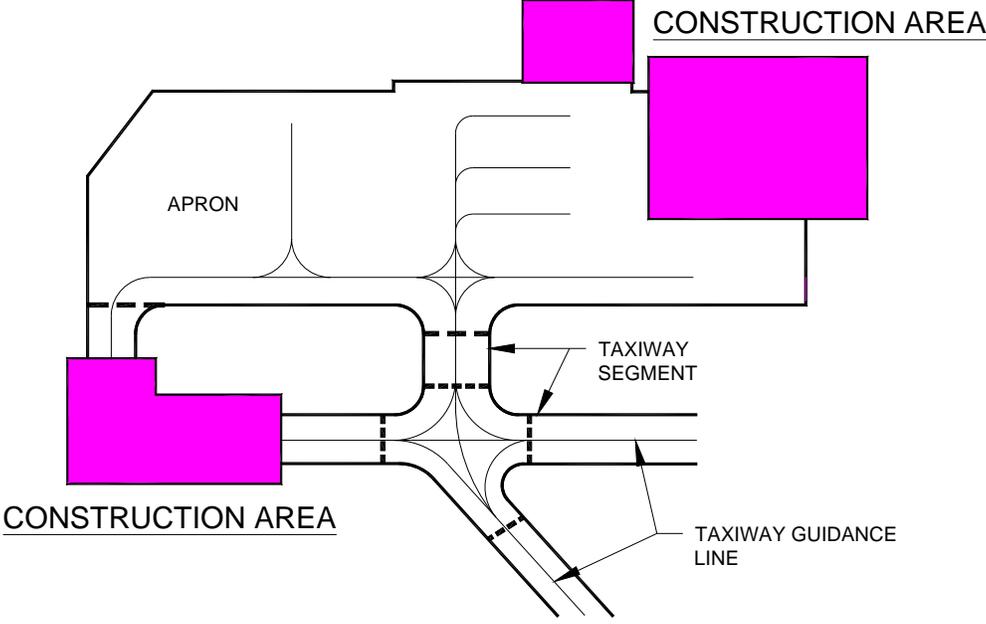
Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	N/A	N/A	
Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 3 ft	± 5 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature.	
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.	
buildingNumber (String 16)		The code indicating the number of the building.	
structureType (Enumeration: CodeStructureType)		The type of structure.	
status (Enumeration: codeStatus)		This value differentiates structure entities by operational status.	
numberOfCurrentOccupants (Integer)		Number of persons currently occupying the structure	
areaInside (Real)		Total inside area of structure	
structureHeight (Real)		Maximum height of structure; i.e. AGL height	
areaFloor (Real)		Total inside floor area	
lightingType (Enumeration: codeLightingConfigurationType)		A description of the lighting system.	
markingfeatureType (Enumeration: codeMarkingFeatureType)		The color of the marking(s)	

color (Enumeration: codeColor)	The type of the marking(s)
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.9.2. Construction Area

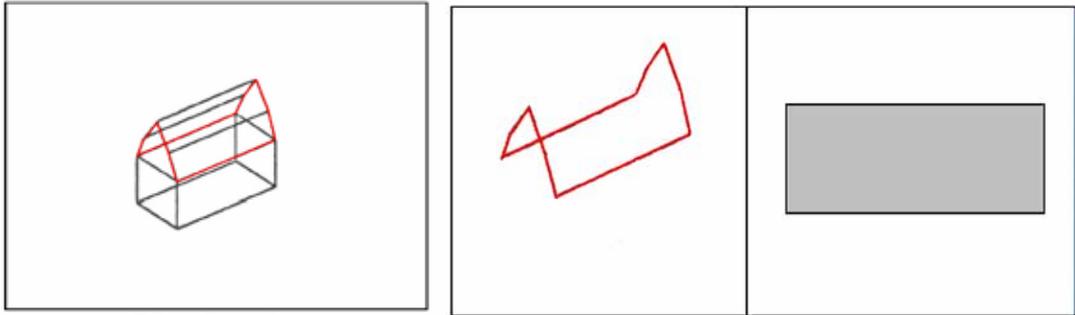
Definition: A defined area that is under construction, not intended for active use until authorized by the concerned authority. The area defines a boundary for personnel, material, and equipment engaged in the construction activity.			
Feature Group	Manmade Structures		
Feature Class Name	ConstructionArea		
Feature Type	Polygon		
CADD Standard Requirements			
Layer/Level	Description	Layer/Level	Description
A-STAT-DEMO-	Demolition	L-STAT-FUTR-	Future work
A-STAT-DEMO-PHS1	Demolition - phase 1	L-STAT-NEWW-	New work
A-STAT-DEMO-PHS2	Demolition - phase 2	L-STAT-TEMP-	Temporary work
A-STAT-DEMO-PHS3	Demolition - phase 3	M-STAT-DEMO-	Demolition
A-STAT-FUTR-	Future work	M-STAT-DEMO-PHS1	Demolition - phase 1
A-STAT-NEWW-	New work	M-STAT-DEMO-PHS2	Demolition - phase 2
A-STAT-TEMP-	Temporary work	M-STAT-DEMO-PHS3	Demolition - phase 3
C-PROP-CONS-	Construction limits/controls, staging area	M-STAT-FUTR-	Future work
C-STAT-DEMO-	Demolition	M-STAT-NEWW-	New work
C-STAT-DEMO-PHS1	Demolition - phase 1	M-STAT-TEMP-	Temporary work
C-STAT-DEMO-PHS2	Demolition - phase 2	P-FUEL-NGAS-	Natural gas piping
C-STAT-DEMO-PHS3	Demolition - phase 3	P-STAT-DEMO-	Demolition
C-STAT-FUTR-	Future work	P-STAT-DEMO-PHS1	Demolition - phase 1
C-STAT-NEWW-	New work	P-STAT-DEMO-PHS2	Demolition - phase 2
C-STAT-TEMP-	Temporary work	P-STAT-DEMO-PHS3	Demolition - phase 3
E-STAT-DEMO-PHS1	Demolition - phase 1	P-STAT-FUTR-	Future work

E-STAT-DEMO-PHS2	Demolition - phase 2	P-STAT-NEWW-	New work	
E-STAT-DEMO-PHS3	Demolition - phase 3	P-STAT-TEMP-	Temporary work	
F-STAT-DEMO-	Demolition (NOTE: <i>comprehensive demolition is handled in Model File Type: Demolition Plan</i>)	S-STAT-DEMO-	Demolition	
F-STAT-DEMO-PHS1	Demolition - phase 1	S-STAT-DEMO-PHS1	Demolition - phase 1	
F-STAT-DEMO-PHS2	Demolition - phase 2	S-STAT-DEMO-PHS2	Demolition - phase 2	
F-STAT-DEMO-PHS3	Demolition - phase 3	S-STAT-DEMO-PHS3	Demolition - phase 3	
F-STAT-FUTR-	Future work	S-STAT-FUTR-	Future work	
F-STAT-NEWW-	New work	S-STAT-NEWW-	New work	
F-STAT-TEMP-	Temporary work	S-STAT-TEMP-	Temporary work	
G-SITE-OTLN-	Site plan - key map	T-STAT-DEMO-PHS1	Demolition - phase 1	
H-STAT-DEMO-PHS1	Demolition - phase 1	T-STAT-DEMO-PHS2	Demolition - phase 2	
H-STAT-DEMO-PHS2	Demolition - phase 2	T-STAT-DEMO-PHS3	Demolition - phase 3	
H-STAT-DEMO-PHS3	Demolition - phase 3	V-STAT-DEMO-	Demolition (NOTE: <i>comprehensive demolition is handled in Model File Type: Demolition Plan</i>)	
L-STAT-DEMO-	Demolition (NOTE: <i>comprehensive demolition is handled in Model File Type: Demolition Plan</i>)	V-STAT-FUTR-	Future work	
L-STAT-DEMO-PHS1	Demolition - phase 1	V-STAT-NEWW-	New work	
L-STAT-DEMO-PHS2	Demolition - phase 2	V-STAT-TEMP-	Temporary work	
L-STAT-DEMO-PHS3	Demolition - phase 3			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	161	Continuous	1 MM	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>ConstructionArea</i>	Extension	
	FGDC	<i>ConstructionArea</i>	Extension	
	SDSFIE	<i>structure_existing_site</i>		
Documentation and Submission Requirements	None			

Related Features			
<p>Data Capture Rule: Capture the outer edges of the area under construction. The limits could be a combination of building lines, construction fence lines, or natural features such as streams or rivers.</p> 			
<p>Illustrates the collection of an airport construction area.</p>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	N/A	N/A	
Accuracy Requirements (in feet)	Horizontal	Vertical	
	± 3 ft	Orthometric	Ellipsoidal
		± 5 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2 (50))	Name of the feature.		
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
projectName (String 60)	The name of the construction project		
projectStatus (Enumeration: CodeProjectStatus)	The status of the construction project		
coordinationContact (String 75)	Airport, emergency, airline, tenant, and contractor personnel who are responsible for coordinating on-airport construction work		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		

Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.
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5.9.3. Roof

Definition: Structure on top of buildings, garages and other similar structures.				
Feature Group	Manmade Structures			
Feature Class Name	Roof			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
A-ROOF-OTLN	Roof outline			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	5	Continuous	1 MM	User Defined
MicroStation Standards	1		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	None		
	FGDC	None		
	SDSFIE	None		
Documentation and Submission Requirements	None			
Related Features				
<p>Data Capture Rules: Collect the roof outline to represent the outer edge of the roof as well as the break line or ridge lines of a sloped or multiple level roof. On flat roofs with elevator shafts or large HVAC units on the roof collect these items at the top of the units and shown as a roof within a roof feature.</p> <p>NOTE: If the roof penetrates an OIS or is selected as a representative object, additionally identify, classify and document the roof as an <u>ObstructionArea</u> and associated accuracy.</p>				
				
				
Top Perimeter of Building Superimposed over Imagery				

Monumentation	No monumentation required.		
Survey Point Location	Horizontal		Vertical
	N/A		N/A
Accuracy Requirements (in feet)	Horizontal		Vertical
	± 3 ft		Orthometric
			Ellipsoidal
± 5 ft		N/A	
Resolution	Geographic Coordinates		Distances and Elevations
	Hundredth of arc second		Nearest foot
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature.	
description (VARCHAR2 (255))		Description of the feature.	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
buildingNumber (String 16)		The code indicating the number of the building	
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.	

5.9.4. Fence

Definition: Any fencing (chain-link, razor wire, PVC, etc.) [Source: FAA]			
Feature Group	Manmade Structures		
Feature Class Name	Fence		
Feature Type	Line		
CADD Standard Requirements			
Layer/Level	Description		
C-DETL-FENC-	Fencing		
C-SITE-FENC-	Fences and handrails		
L-DETL-FENC-	Fencing		
L-SITE-FENC-	Fencing		
S-SAFE-FENC-	Fencing		
V-SITE-FENC-	Fences and handrails		
C-SECU-FENC-	Security fencing		
	Color	Line type	Line Weight
AutoDesk Standards	5	Continuous	1 MM
MicroStation Standards	1		7
Information Assurance Level	Restricted		
Equivalent Standards	AIXM	<i>Fence</i>	Extension
	FGDC	<i>Fence</i>	Extension
	SDSFIE	<i>fence_line</i>	
Documentation and Submission Requirements	No documentation is required.		
Related Features			

Data Capture Rules: <i>Collect line along fence line.</i>			
NOTE: <i>If the fence penetrates an OIS or is selected as a representative object, additionally identify, classify and document the fence as an <u>Obstacle</u> and associated accuracy.</i>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	N/A	N/A	
Accuracy Requirements (in feet)	Horizontal	Vertical	
	± 3 ft	Orthometric ± 5 ft	Ellipsoidal N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature.	
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
type (String 16)		Indicate the fencing material used.	
height (Real)		The overall distance from the surface of the ground to the top of the fence.	
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.	

5.9.5. Gate

Definition: A gate is an opening in a fence or other type of barrier between areas.			
Feature Group	Manmade Structures		
Feature Class Name	Gate		
Feature Type	Line		
CADD Standard Requirements			
Layer/Level	Description		
L-DETL-GATE-	Gate		
L-SITE-GATE-	Gate		
C-SITE-GATE-	Gates along fences or other barriers intended to restrict access		
	Color	Linetype	Line Weight
AutoDesk Standards	214	Continuous	1 MM
MicroStation Standards	5		7
Information Assurance Level	Restricted		
Equivalent Standards	AIXM	<i>GateLine</i>	Extension
	FGDC	<i>GateLine</i>	Extension
	SDSFIE	<i>gate_line</i>	
Documentation and Submission Requirements	None		

Related Features				
Data Capture Rules: <i>Collect center of gate from post-to-post.</i>				
NOTE: <i>If the gate penetrates an OIS or is selected as a representative object, additionally identify, classify and document the gate as an <u>Obstacle</u> and associated accuracy.</i>				
Monumentation		No monumentation required.		
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name, code or identifier used to identify the gate.		
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 240 characters.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
type (VARCHAR2 (50))		The gate material and method of construction.		
length (Real)		The overall distance from one end of the gate to the other.		
height (Real)		The overall distance from the surface of the top of the gate.		
attended (Boolean)		A Boolean indicating whether the gate is tended by a guard or other individual.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.9.6. Tower

Definition: A structure created, by man, to facilitate an activity at an elevated level above the ground.				
Feature Group		Manmade Structures		
Feature Class Name		Tower		
Feature Type		Point		
CADD Standard Requirements				
Layer/Level		Description		
C-STRC-TOWR-		Tower		
E-POLE-GUYS-		Guy equipment		
V-POLE-GUYS-		Guy equipment		
V-STRC-TOWR-		Tower		
		Color	Linetype	Line Weight
AutoDesk Standards		7	Continuous	1
MicroStation Standards		0		7
Information Assurance Level		Restricted		
Equivalent Standards		AIXM	<i>VerticalStructure</i>	Extension

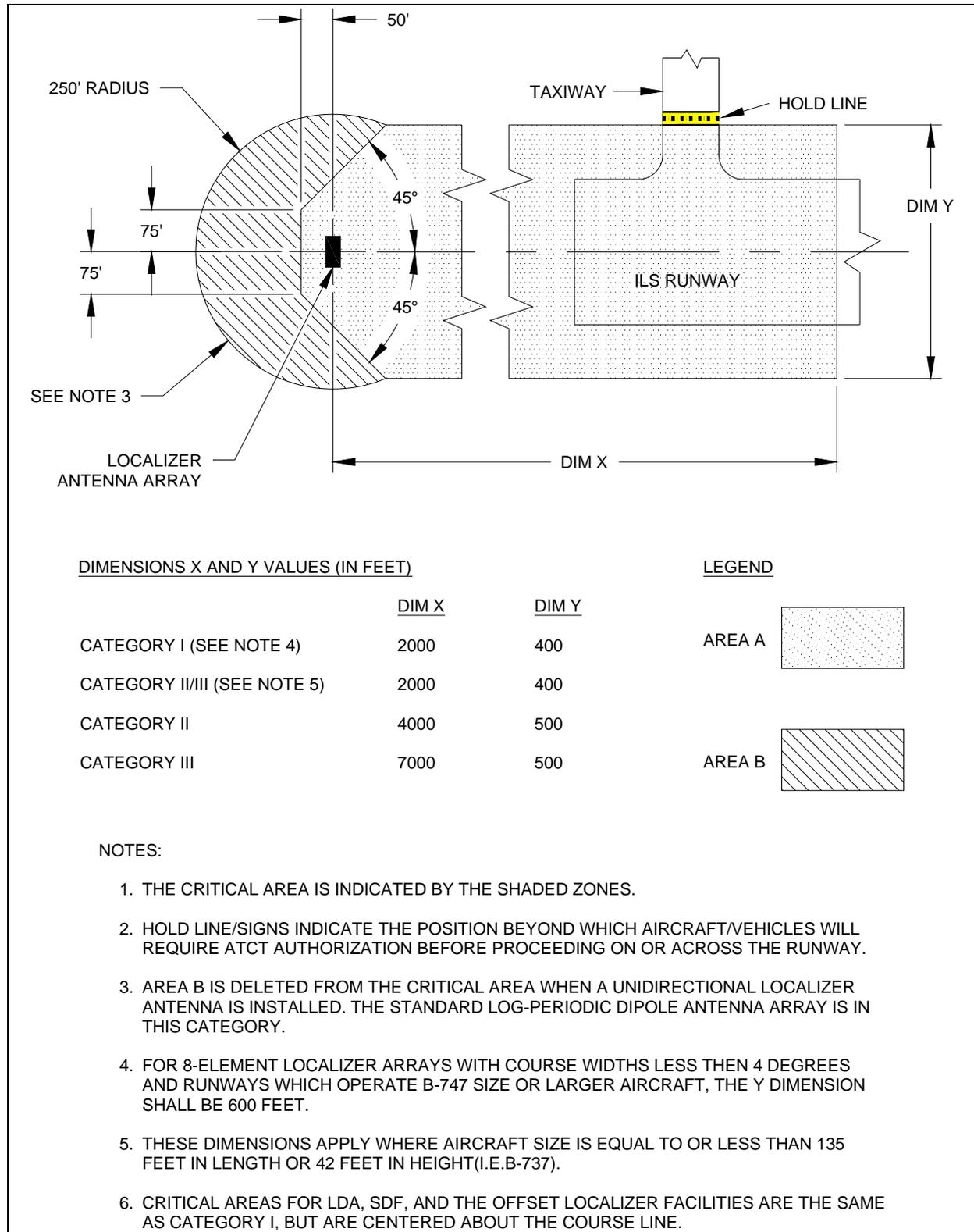
	FGDC	<i>Tower</i>	Extension
	SDSFIE	<i>tower_site</i>	
Documentation and Submission Requirements	No documentation is required.		
Related Features			
Data Capture Rules: <i>Collect the point at the highest location of the tower. When surveying guyed structures, capture any guys penetrating a surface separately from the structure itself. Determine and document the point where the guy wires penetrate the OIS at a distance greater than 100 feet from the actual structure, identify it as a separate point object.</i>			
NOTE: <i>If the tower penetrates an OIS or is selected as a representative object, additionally identify, classify and document the tower as an <u>Obstacle</u> and associated accuracy.</i>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal		Vertical
	N/A		N/A
Accuracy Requirements (in feet)	Horizontal		Vertical
	± 3 ft		Orthometric
			Ellipsoidal
± 5 ft		N/A	
Resolution	Geographic Coordinates		Distances and Elevations
	Hundredth of arc second		Nearest foot
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature.	
description (VARCHAR2 (255))		Description of the feature.	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
verticalStructureMaterial (Enumeration: CodeVerticalStructureMaterial)		Classifies the predominant material of the vertical object	
lightCode (Boolean)		A code indicating that the tower is lighted [Source: AIXM]	
lightingType (Enumeration: codeLightingConfigurationType)		A description of the lighting system. Lighting system classifications are Approach; Airport; Runway; Taxiway; and Obstruction	
markingFeatureType (Enumeration: codeMarkingFeatureType)		The type of the marking(s)	
color (Enumeration: codeColor)		The color of the marking(s)	
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.	
structureHeight (Real)		Maximum height of structure; i.e. AGL height	

5.10. Group: NAVIGATIONAL AIDS

All of the different navigational aids are represented using a single feature type. To assist the data producer in identifying the different aids, each individual navigational aid is defined separately even though they are all represented by the single feature type NavigationalAidEquipment. Accuracies differ for many navigational aids. Be sure to collect the navigational aid within the accuracy stated in each navigational aid table.

5.10.1. NAVAID Critical Area

Definition: A zone encompassing a specific ground area in the vicinity of a radiating antenna array which must be protected from parking and unlimited movement of surface and air traffic. The drawings included in this table are representative, be sure to refer to the official source to ensure the appropriate area is protected. [Source: FAA Order 6750.16C]				
Feature Group	NavigationalAids			
Feature Class Name	NavaidCriticalArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-AIRF-AIDS-CRIT	Airfield Navigational Aid - Critical Area			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>ObstacleAssessmentAreaExtension</i>	Extension	
	FGDC	<i>NavigationalAidCriticalArea</i>	Extension	
	SDSFIE	<i>airfield_buffer_zone_area</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect a closed polygon encompassing the greatest horizontal extents of the critical area for the NAVAID. Critical areas are normally associated with the localizer, glideslope, MLS azimuth, MLS elevation, and Precision Approach Radars. If necessary, identify the area using multiple polygons. Adjacent polygons must have shared edges and vertices and must not overlap polygons of the same feature.</i>				



DIMENSIONS X AND Y VALUES (IN FEET)

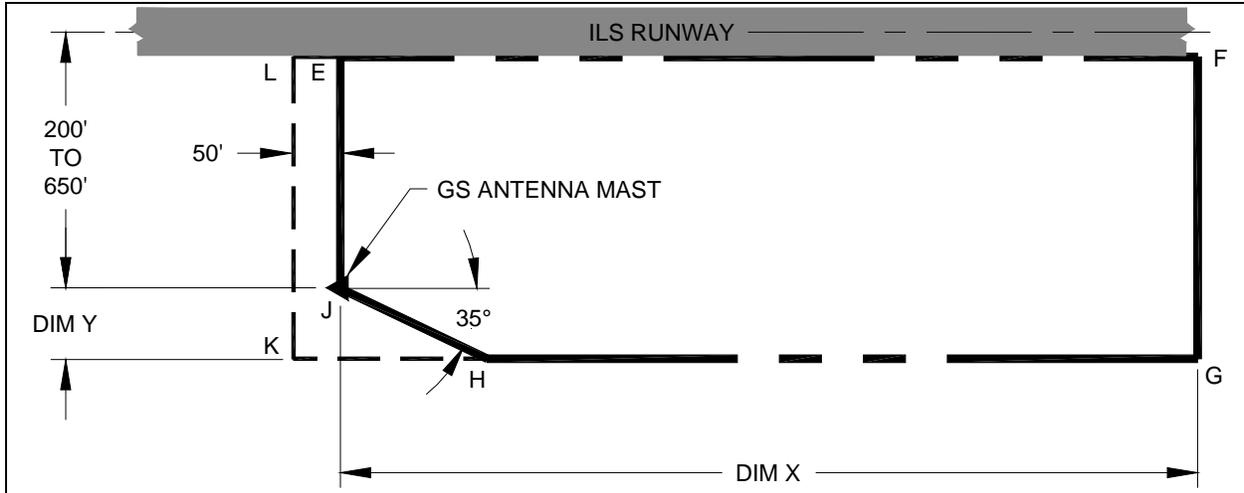
	<u>DIM X</u>	<u>DIM Y</u>
CATEGORY I (SEE NOTE 4)	2000	400
CATEGORY II/III (SEE NOTE 5)	2000	400
CATEGORY II	4000	500
CATEGORY III	7000	500

LEGEND

AREA A	
AREA B	

NOTES:

1. THE CRITICAL AREA IS INDICATED BY THE SHADED ZONES.
2. HOLD LINE/SIGNS INDICATE THE POSITION BEYOND WHICH AIRCRAFT/VEHICLES WILL REQUIRE ATCT AUTHORIZATION BEFORE PROCEEDING ON OR ACROSS THE RUNWAY.
3. AREA B IS DELETED FROM THE CRITICAL AREA WHEN A UNIDIRECTIONAL LOCALIZER ANTENNA IS INSTALLED. THE STANDARD LOG-PERIODIC DIPOLE ANTENNA ARRAY IS IN THIS CATEGORY.
4. FOR 8-ELEMENT LOCALIZER ARRAYS WITH COURSE WIDTHS LESS THEN 4 DEGREES AND RUNWAYS WHICH OPERATE B-747 SIZE OR LARGER AIRCRAFT, THE Y DIMENSION SHALL BE 600 FEET.
5. THESE DIMENSIONS APPLY WHERE AIRCRAFT SIZE IS EQUAL TO OR LESS THAN 135 FEET IN LENGTH OR 42 FEET IN HEIGHT(I.E.B-737).
6. CRITICAL AREAS FOR LDA, SDF, AND THE OFFSET LOCALIZER FACILITIES ARE THE SAME AS CATEGORY I, BUT ARE CENTERED ABOUT THE COURSE LINE.



NOTES:

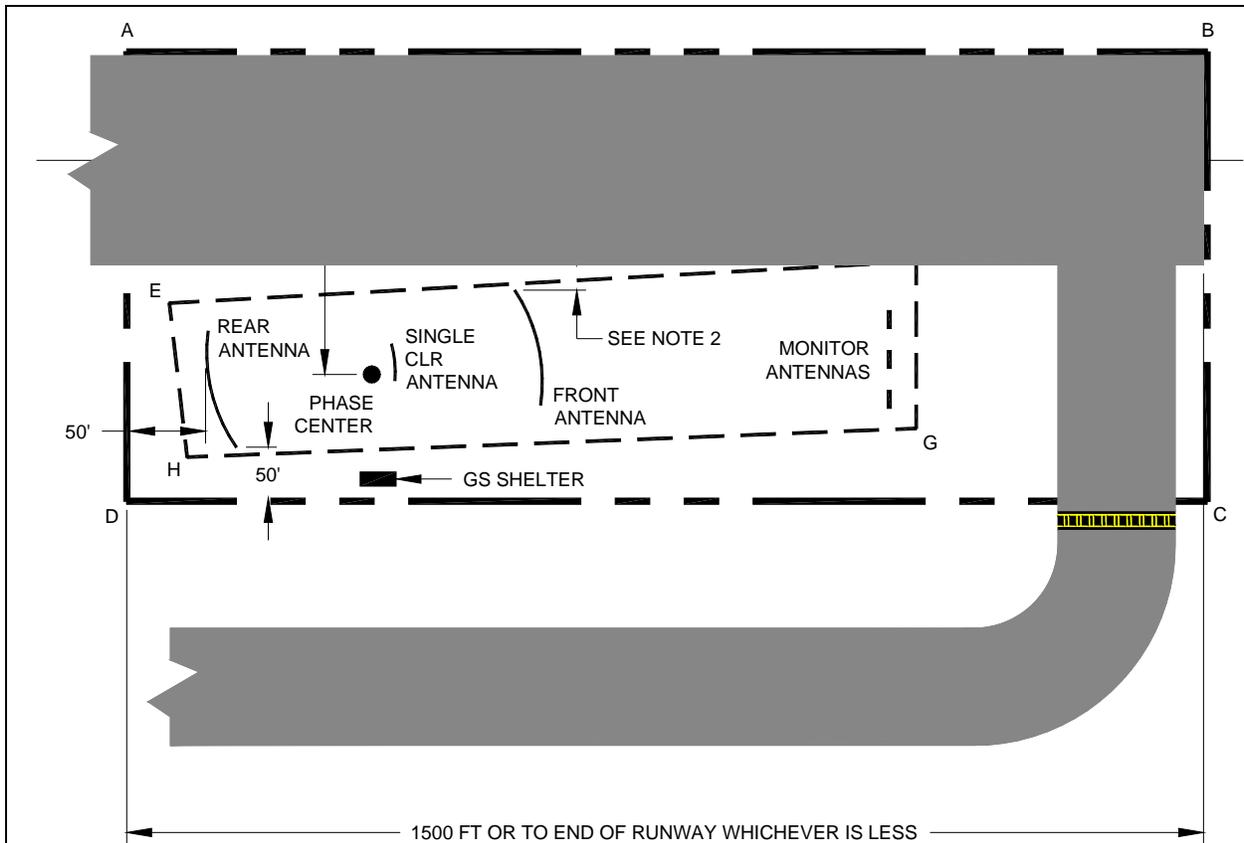
1. THE CRITICAL AREA IS DEFINED BY THE PENTAGON "EFGHJ".
2. ALL AIRCRAFT MAY BE PARKED AS CLOSE AS 50' BEHIND A GLIDESLOPE MAST WITH DIRECTIONAL ANTENNAS AS DEFINED BY LINE "KL".

3. FACILITY TYPE	<table border="0"> <tr> <td colspan="2" style="text-align: center;"><u>CATEGORY I</u></td> <td colspan="2" style="text-align: center;"><u>CATEGORY II/III</u></td> </tr> <tr> <td style="text-align: center;"><u>DIM X</u></td> <td style="text-align: center;"><u>DIM Y</u></td> <td style="text-align: center;"><u>DIM X</u></td> <td style="text-align: center;"><u>DIM Y</u></td> </tr> </table>	<u>CATEGORY I</u>		<u>CATEGORY II/III</u>		<u>DIM X</u>	<u>DIM Y</u>	<u>DIM X</u>	<u>DIM Y</u>
<u>CATEGORY I</u>		<u>CATEGORY II/III</u>							
<u>DIM X</u>	<u>DIM Y</u>	<u>DIM X</u>	<u>DIM Y</u>						
ALL IMAGE GLIDE SLOPES									
SMALL AIRCRAFT ●	800	100	800	100					
NULL REFERENCE									
MEDIUM AIRCRAFT ●●	2000	200	2500	200					
LARGE AIRCRAFT ●●●	3100	200	3200	200					
SIDEBAND AND CAPTURE EFFECT									
MEDIUM AND LARGE AIRCRAFT ●●/●●●	1300	200	1300	200					

ALL DISTANCES ARE IN FEET AND REPRESENT THE MINIMUM ALLOWABLE DISTANCES FROM THE NEAREST POINT ON THE AIRCRAFT LONGITUDINAL AXIS (LINE FROM NOSE TO TAIL) TO THE GLIDE SLOPE ANTENNA, AS DEFINED IN FIGURE 1-3.

- SMALL AIRCRAFT ARE DEFINED AS AIRCRAFT WITH DIMENSIONS LESS THAN 60' IN LENGTH AND 20' IN HEIGHT (I.E. KINGAIR). THIS INCLUDES ALL SURFACE VEHICLES AND HELICOPTERS.
- MEDIUM AIRCRAFT ARE DEFINED AS AIRCRAFT WITH DIMENSIONS LESS THAN 160' IN LENGTH AND 38' IN TAIL HEIGHT (I.E. B-737, MD-80).
- LARGE AIRCRAFT ARE DEFINED AS AIRCRAFT GREATER THAN 160' IN LENGTH OR GREATER THAN 38' IN TAIL HEIGHT.

THE SMALL, MEDIUM AND LARGE AIRCRAFT SIZES ARE BASED UPON THE DIMENSIONS USED IN COMPUTER MODELING OF CRITICAL AREAS AND APPLY TO THIS DOCUMENT ONLY.



NOTES:

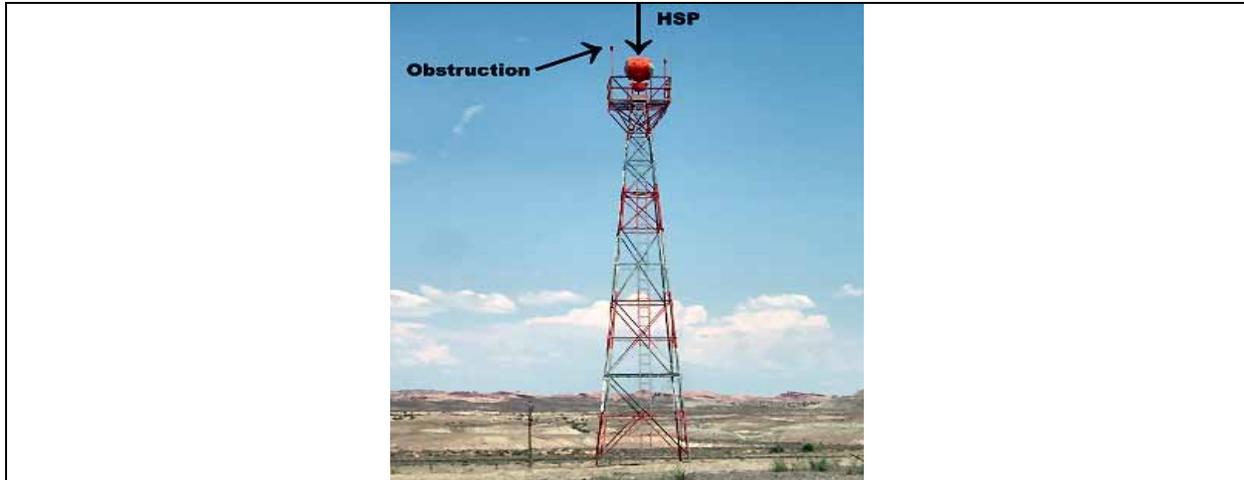
1. THIS DISTANCE IS APPROXIMATELY 200 FEET DEPENDING ON RUNWAY WIDTH. REFER TO FAA DRAWINGS D-6226-1 AND D-6226-2 FOR INSTALLATION LAYOUT.
2. THIS DISTANCE SHALL NOT BE LESS THAN 25 FEET.
3. THE CRITICAL AREA IS DEFINED BY THE AREA "ABCD". UNRESTRICTED TAXIING OR HOLDING AIRCRAFT IS PERMITTED IN UNSHAPED AREA.
4. SNOW REMOVAL AREA IS DEFINED AS "EFGH".

Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 3 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Tenth of foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 (255))		Description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
dimensionX (Integer)		The linear dimension of the critical area in the X axis.		

dimensionY (Integer)	The linear dimension of the critical area in the Y axis.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.2. Navaid Equipment – Airport Beacon (APBN)

Definition: A visual NAVAID operated at many airports. At civil airports, alternating white and green flashes indicate the location of the airport. At military airports, the beacons flash alternately white and green, but are differentiated from civil beacons by dual-peaked (two quick) white flashes between the green flashes.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipmentExtension</i>		Extension
	FGDC	<i>NavigationalAidEquipment</i>		
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the horizontal and vertical positions of the NAVAID using the survey point identified below. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID using the OBSTACLE feature type and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of cover or axis of rotation		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	



Accuracy Requirements (in feet)	Horizontal	Vertical	
	± 5 ft	Orthometric	Ellipsoidal
Resolution	Geographic Coordinates	± 10 ft	N/A
	Hundredth of arc second	Distances and Elevations	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature	
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.	
faaFacilityId (String 4)		Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]	
navaidEquipmentType (Enumeration: CodeNavaidEquipmentType)		Specifies the type of NAVAID	
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System.	
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)		The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	

centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to “visual”)
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.3. Navaid Equipment – Air Route Surveillance Radar (ARSR) or Airport Surveillance Radar (ASR)

Definition: These radars are used to detect and display an aircraft’s position while operating in the terminal area (ASR) and en route (ARSR) between terminal areas.	
Feature Group	Navigational Aids
Feature Class Name	NavaidEquipment
Feature Type	Point

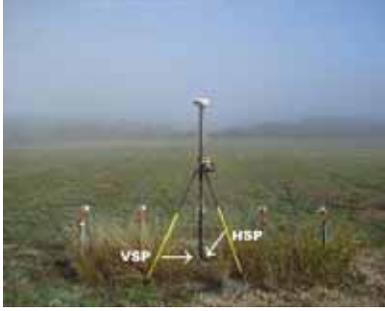
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the horizontal and vertical positions of the NAVAID using the survey point identified below. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as using the OBSTACLE feature type and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of cover or axis of rotation		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
				
Accuracy Requirements (in feet)	Horizontal ± 10 ft		Vertical	
			Orthometric ± 20 ft	Ellipsoidal N/A
Resolution	Geographic Coordinates Hundredth of arc second		Distances and Elevations Nearest one foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature		

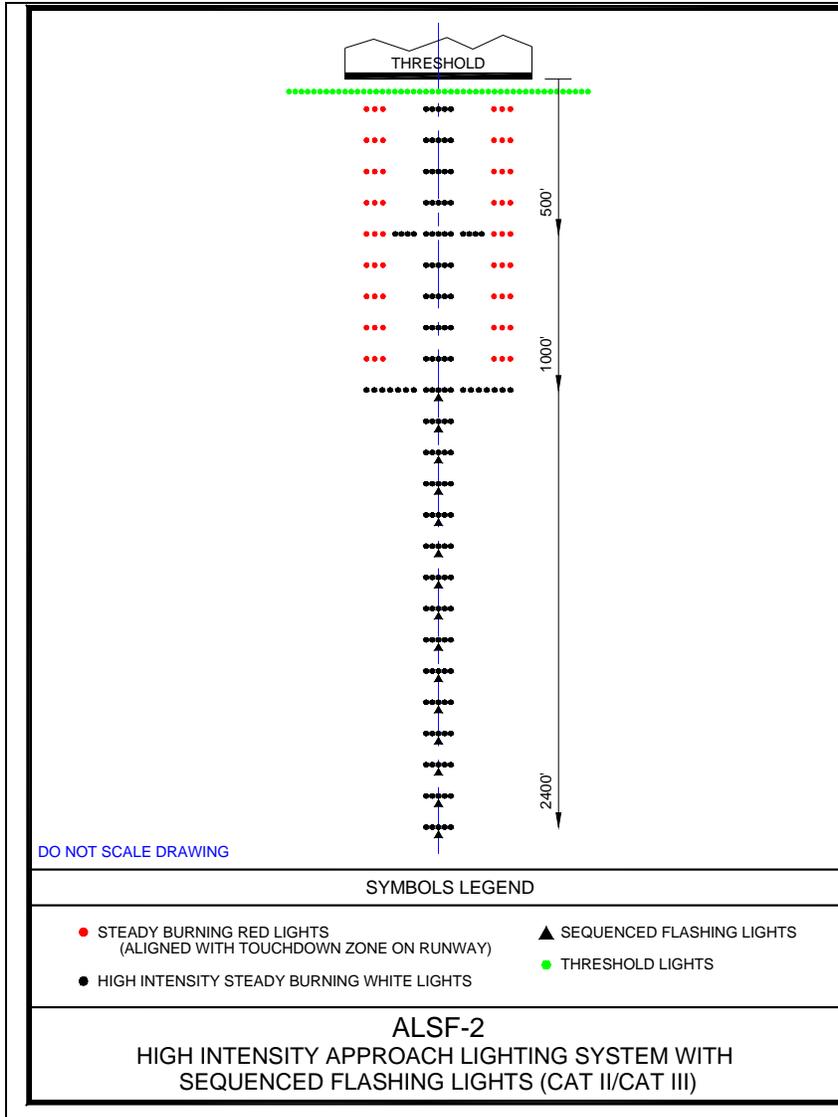
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.

referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

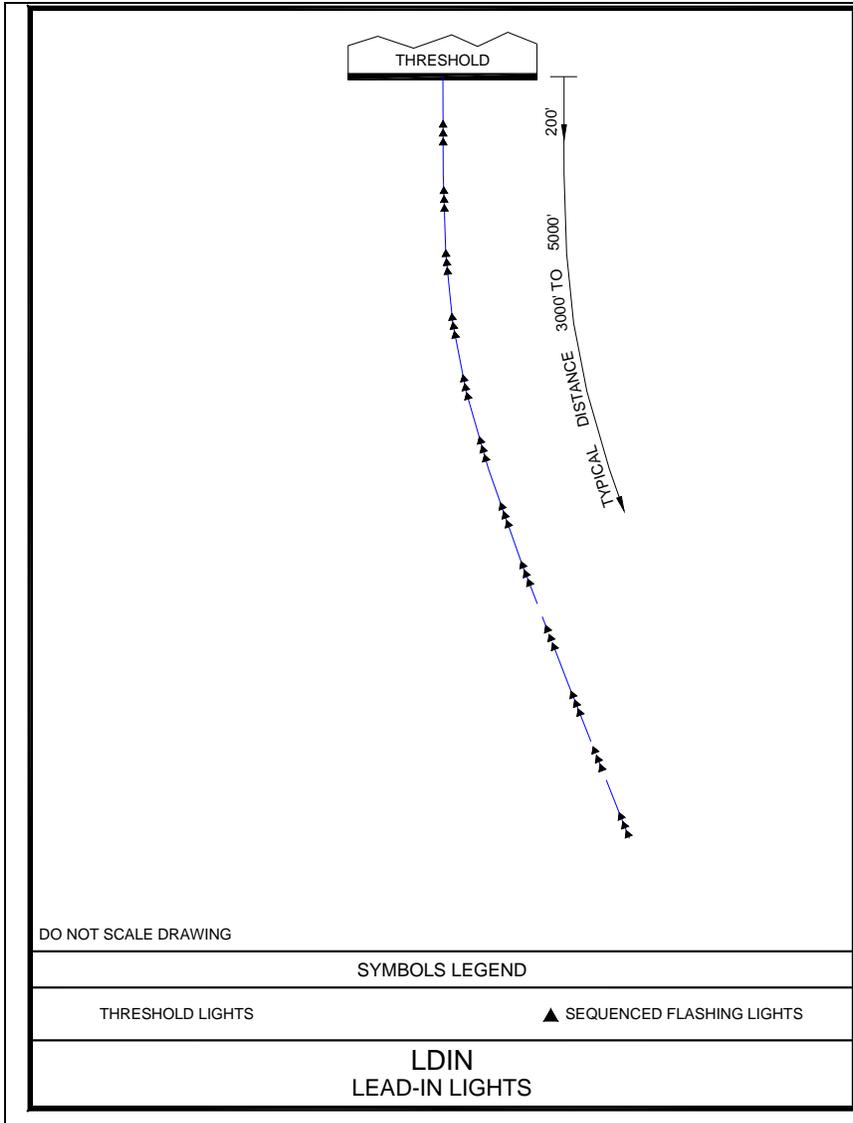
5.10.4. Navaid Equipment – Approach Light System (ALS)

Definition: An airport lighting facility providing visual guidance to landing aircraft by radiating light beams in a directional pattern the pilot uses to align the aircraft with the extended centerline of the runway on final approach for landing. Some airports have Condenser-Discharge Sequential Flashing Lights or Sequenced Flashing Lights in conjunction with the ALS.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	NavaidEquipment		Extension
	FGDC	NavaidEquipmentExtension		Extension
	SDSFIE	navigational_aid_point		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3.			
Related Features				
Data Capture Rules: <i>Collect the horizontal and vertical positions of the NAVAID using the survey point identified below. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as using the OBSTACLE feature type and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Horizontal center of the center light of the first and last lights rows		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	

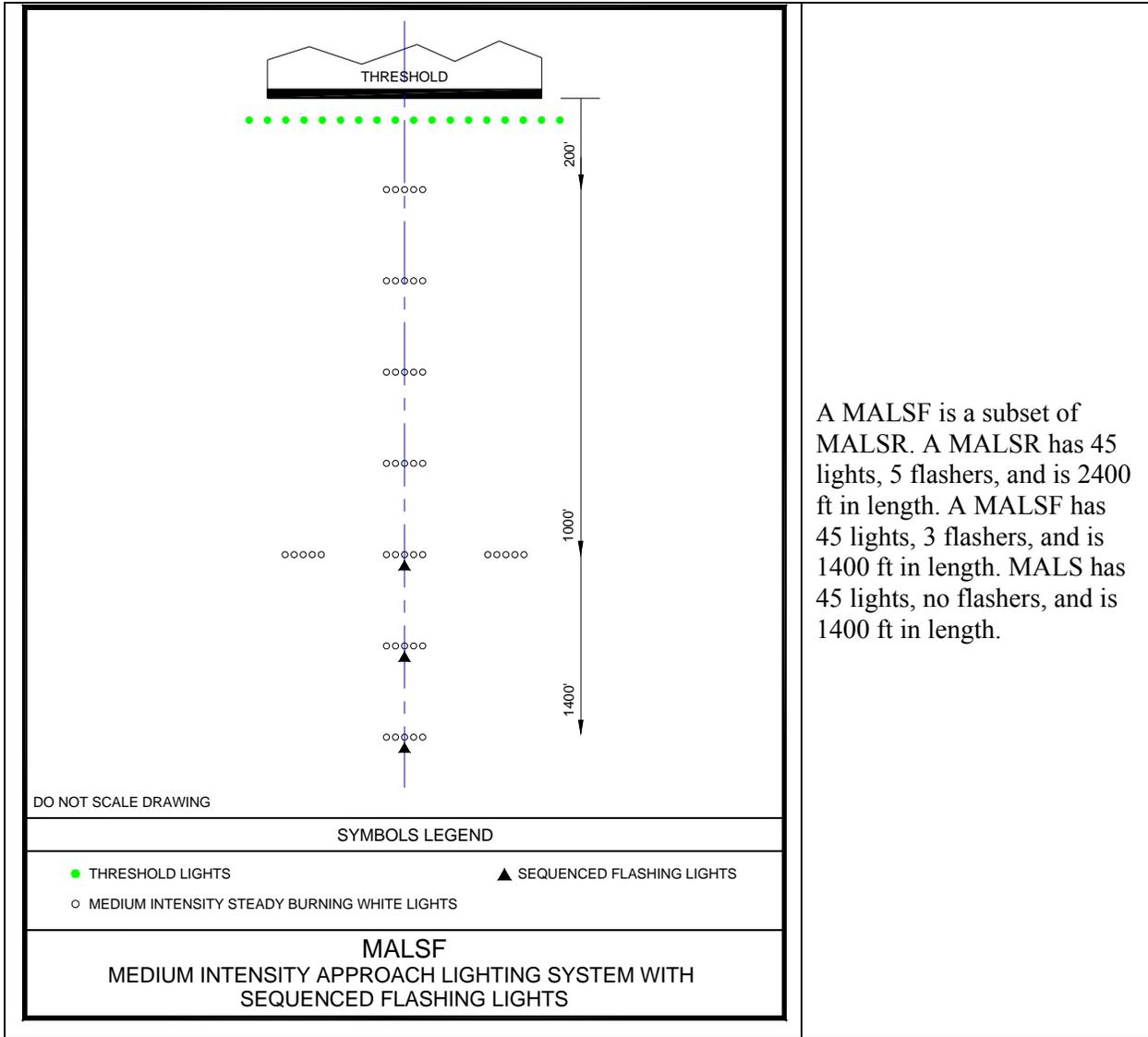
		
<p>Pilot's perspective of an ALSF-2.</p>	<p>Collecting the first light or center light of the first row.</p>	<p>Collecting the last light or center light of last row.</p>
<p>Types of Approach Light Systems are:</p> <ol style="list-style-type: none"> 1. ALSF-1- Approach Light System with Sequenced Flashing Lights in ILS Cat-I configuration. 2. ALSF-2- Approach Light System with Sequenced Flashing Lights in ILS Cat-II configuration. The ALSF-2 may operate as an SSALR when weather conditions permit. 3. SSALF- Simplified Short Approach Light System with Sequenced Flashing Lights. 4. SSALR- Simplified Short Approach Light System with Runway Alignment Indicator Lights. 5. MALSF- Medium Intensity Approach Light System with Sequenced Flashing Lights. 6. MALSR- Medium Intensity Approach Light System with Runway Alignment Indicator Lights. 7. LDIN- Lead-in-light system. 8. RAIL- Runway Alignment Indicator Lights- Sequenced Flashing Lights which are installed only in combination with other light systems. 9. ODALS- Omnidirectional Approach Lighting System. 		



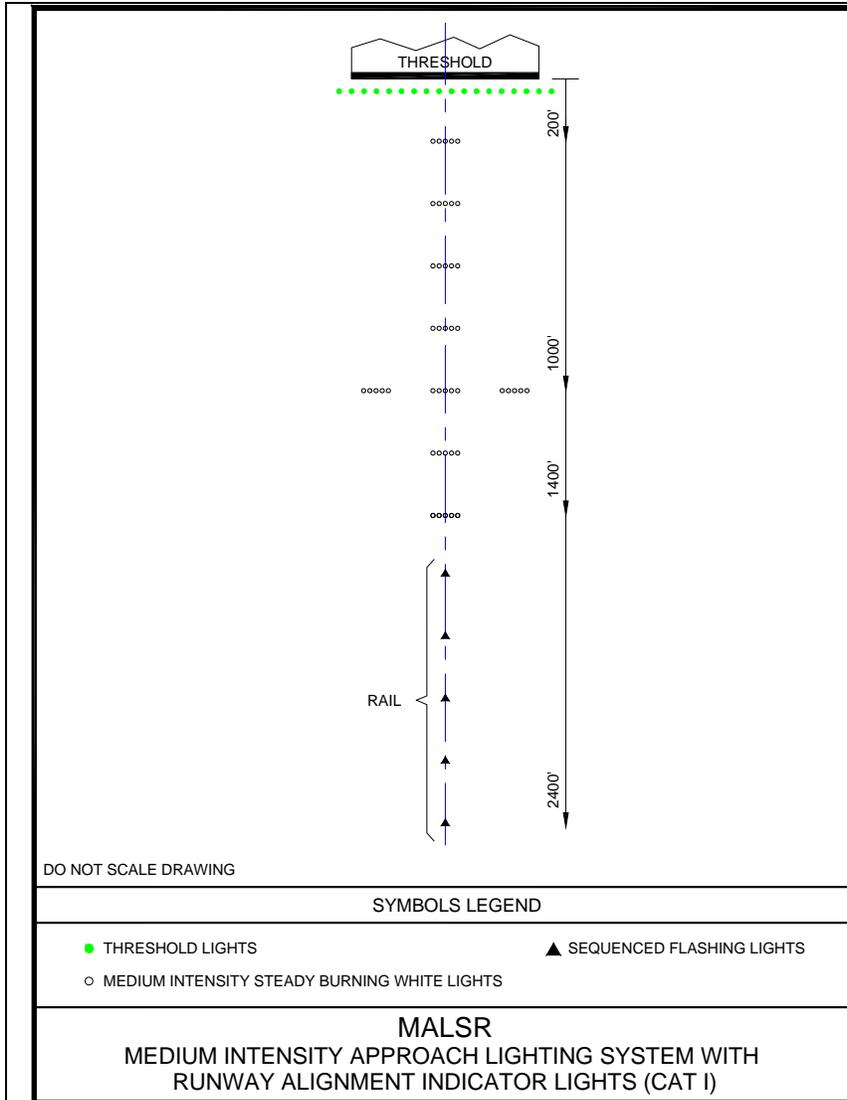
The ALSF-2 is a system of light bars and barrettes in the approach zone immediately ahead of the runway threshold. The standard length of an ALSF-2 is 3000 feet unless terrain or other local conditions prevent a full length installation. Then the length may be shortened to not less than 2400 feet. The ALSF-2 consists of centerline light barrettes, sequenced flashing lights, 1000-foot crossbar, 500-foot crossbar, side row barrettes, and threshold lights. A barrette is three or more lights closely spaced in a transverse line so that from a distance they appear as a single short illuminated bar. For the ALSF-2, the length of a barrette shall not exceed 15 feet and the center-to-center spacing of the lights shall not exceed 5 feet.



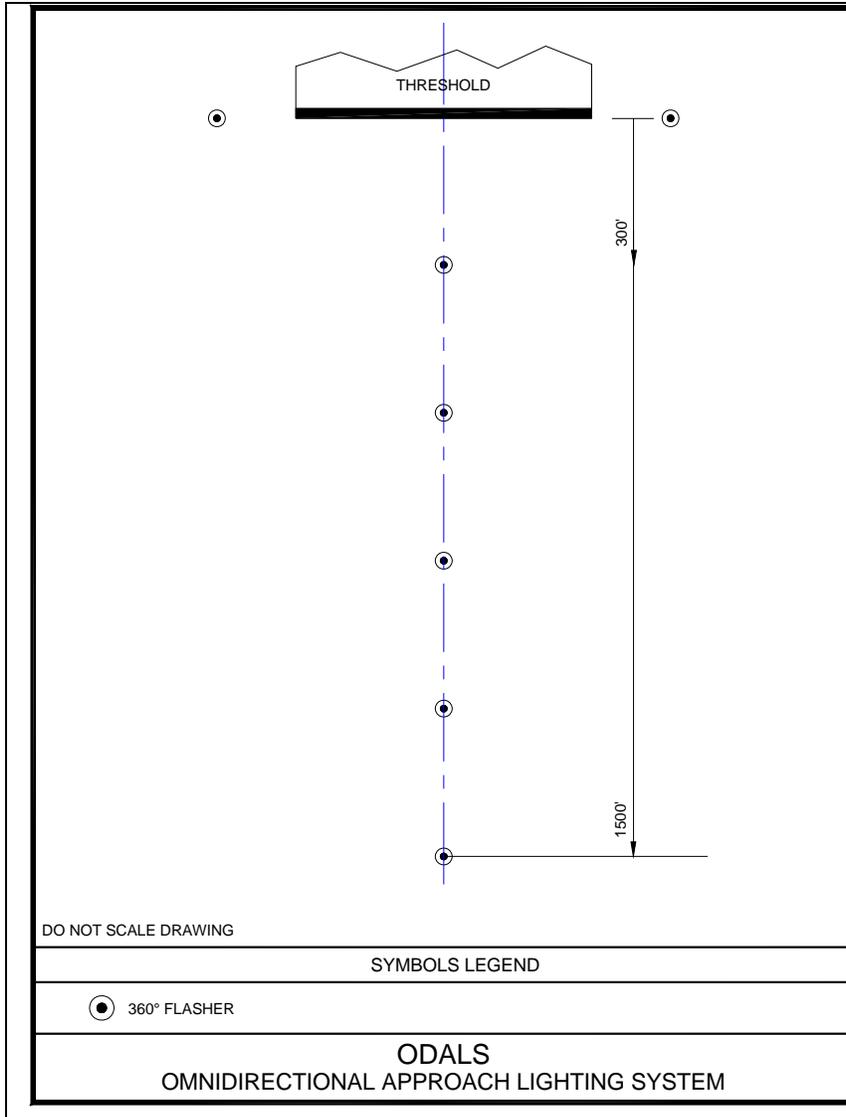
The LDIN consists of one or more series of flashing lights installed at or near ground level that provides positive visual guidance along an approach path, either curving or straight, where special problems exist with hazardous terrain, obstructions, or noise abatement procedures.



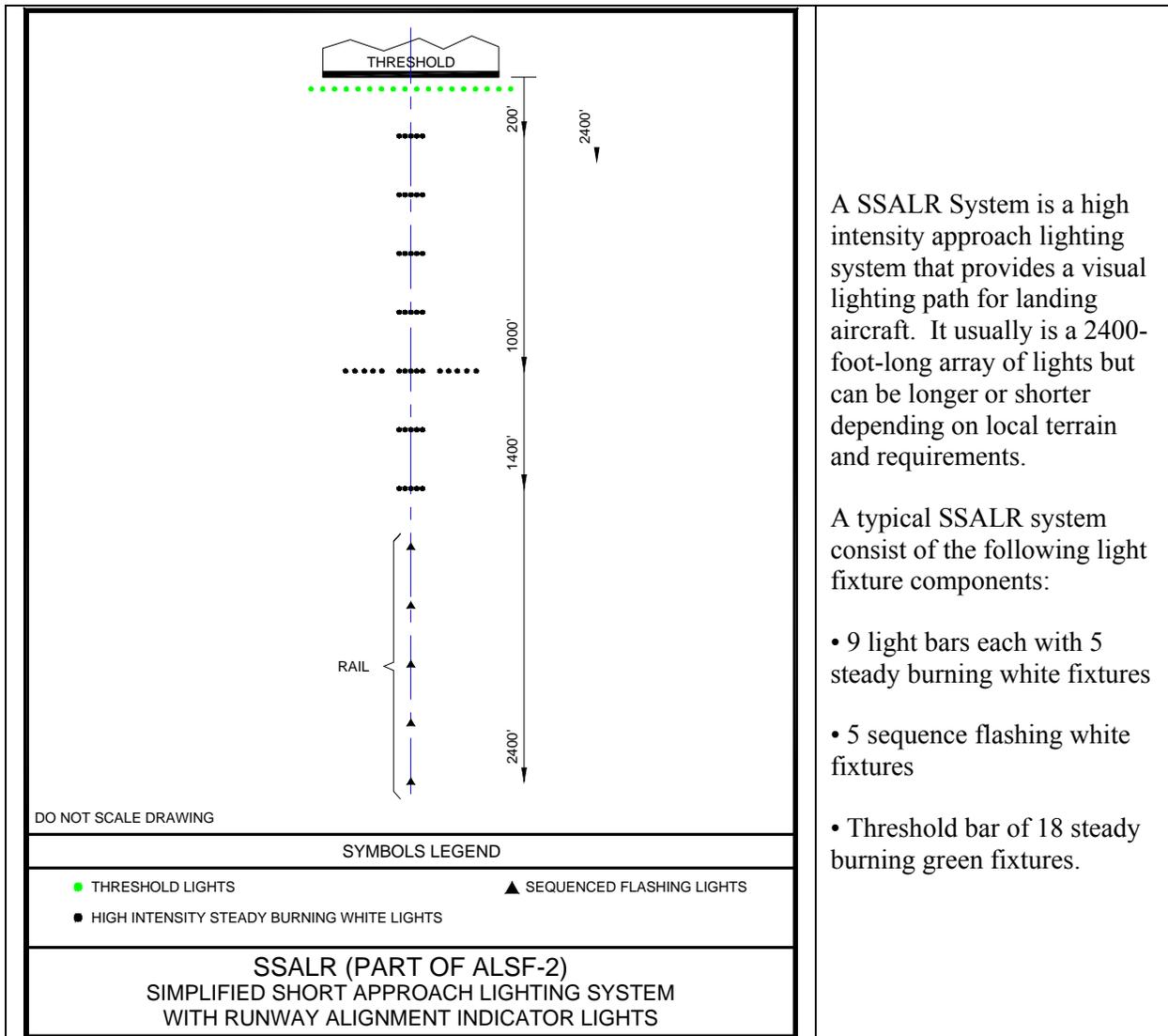
A MALSF is a subset of MALSR. A MALSR has 45 lights, 5 flashers, and is 2400 ft in length. A MALSF has 45 lights, 3 flashers, and is 1400 ft in length. MALS has 45 lights, no flashers, and is 1400 ft in length.



The MALSR is a system that supports Category I instrument approaches. It is a medium intensity light system that identifies the extended runway centerline from threshold to 2,400 feet before the threshold. The MALSR supports Category I instrument approaches and presents to the pilot the illusion of a ball of light traveling from the outer end of the system to a point approximately 1,400 feet from the end of the runway. A row of green lights marks the threshold of the runway.



The ODALS consists of seven omnidirectional flashing lights located in the approach area of a nonprecision runway. Five lights are located on the runway centerline extended with the first light located 300 feet from the threshold and extending at equal intervals up to 1,500 feet from the threshold. The other two lights are located, one on each side of the runway threshold, at a lateral distance of 40 feet from the runway edge, or 75 feet from the runway edge when installed on a runway equipped with a VASI.



A SSALR System is a high intensity approach lighting system that provides a visual lighting path for landing aircraft. It usually is a 2400-foot-long array of lights but can be longer or shorter depending on local terrain and requirements.

A typical SSALR system consist of the following light fixture components:

- 9 light bars each with 5 steady burning white fixtures
- 5 sequence flashing white fixtures
- Threshold bar of 18 steady burning green fixtures.

Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 3 ft	± 5 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature	
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.	

faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]

thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.5. Navaid Equipment – Back Course Marker (BCM)

Definition: Provides runway alignment aircraft guidance on approach.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs <u>1.5.2</u> and <u>1.5.3</u> .			
Related Features				
Data Capture Rules: <i>Collect the horizontal and vertical positions of the NAVAID using the survey point identified below. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as using the OBSTACLE feature type and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of antenna array.		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 10 ft		Orthometric	Ellipsoidal
			± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest one foot	

Feature Attributes	
Attribute (Datatype)	Description
name (VARCHAR2 (50))	Name of the feature
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.

referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.6. Navaid Equipment – Distance Measuring Equipment (DME)

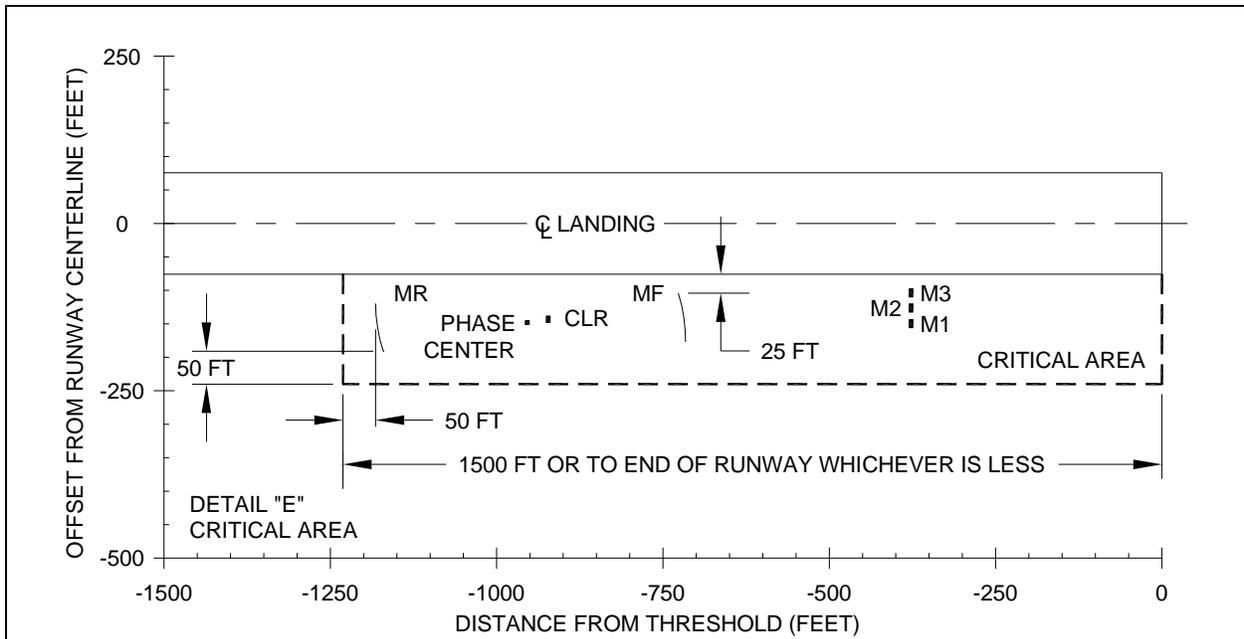
Definition: Provides distance (and in some systems groundspeed) information only from the ground facility to aircraft.			
Feature Group	Navigational Aids		
Feature Class Name	NavaidEquipment		
Feature Type	Point		
CADD Standard Requirements			
Layer/Level	Description		
C-AFLD-AIDS-	Airfield Navigational Aid		
	Color	Line Type	Line Weight
AutoDesk Standards	4	Continuous	1
MicroStation Standards	7		7
Information Assurance Level	Unclassified		
Equivalent Standards	AIXM	<i>NavaidEquipment</i>	Extension
	FGDC	<i>NavaidEquipmentExtension</i>	Extension
	SDSFIE	<i>navigational_aid_point</i>	
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .		
Related Features			
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
DME or DME paired with a LOC	Center of antenna cover.	Center of antenna cover.	

DME frequency paired with MLS azimuth, NDB or VOR	Center of antenna cover	The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
			
Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 1 ft	± 1 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature	
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.	
faaFacilityId (String 4)		Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]	
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)		Specifies the type of NAVAID	
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	

useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.7. Navaid Equipment –Glide Slope – End Fire (GS)

Definition: Provides vertical guidance for aircraft during approach and landing.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs <u>1.5.2</u> and <u>1.5.3</u> .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Phase center reference point.		Phase center reference point.	
				



ABBREVIATIONS USED ABOVE:

- CLR: CLEARANCE SIGNAL TRANSMITTING ANTENNA
- MR: REAR MAIN SIGNAL TRANSMITTING
- MF: FRONT MAIN SIGNAL TRANSMITTING
- M1, M2, M3: SIGNAL MONITOR ANTENNAS

Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 1 ft	± 0.25 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2 (50))	Name of the feature		
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.		
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]		

navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System.
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.

ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.8. Navaid Equipment – Fan Marker (FM)

Definition: Electronic NAVAID that provides horizontal (alignment) guidance for aircraft on a final approach.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of antenna array.		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 10 ft		Orthometric	Ellipsoidal
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest one foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature		
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 240 characters.		

faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.

referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.9. Navaid Equipment – Glideslope (GS)

Definition: Provides vertical guidance for aircraft during approach and landing.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of Antenna Supporting Structure		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	



Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 1 ft	± 0.25 ft	± 0.20 ft
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature	
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.	
faaFacilityId (String 4)		Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]	
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)		Specifies the type of NAVAID	
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	

antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.10.Navaid Equipment – Ground Controlled Approach (GCA) Touchdown Reflectors

Definition: Electronic NAVAID equipment that provides precision approach information for incoming aircraft.	
Feature Group	Navigational Aids

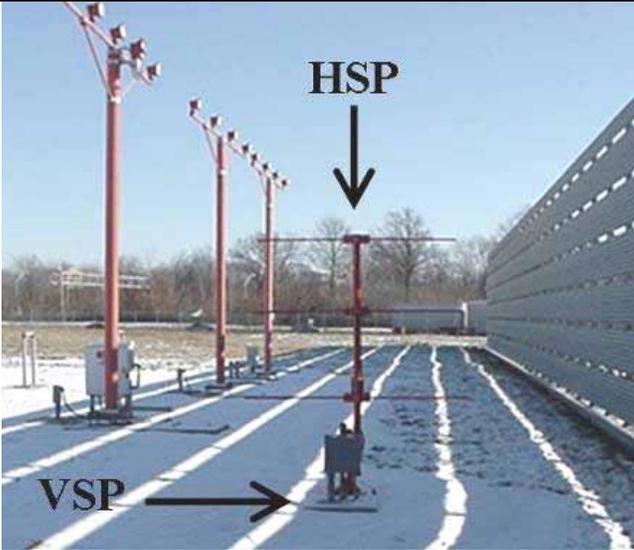
Feature Class Name	NavaidEquipment		
Feature Type	Point		
CADD Standard Requirements			
Layer/Level	Description		
C-AFLD-AIDS-	Airfield Navigational Aid -		
	Color	Line Type	Line Weight
AutoDesk Standards	4	Continuous	1
MicroStation Standards	7		7
Information Assurance Level	Unclassified		
Equivalent Standards	AIXM	<i>NavaidEquipment</i>	Extension
	FGDC	<i>NavaidEquipmentExtension</i>	Extension
	SDSFIE	<i>navigational_aid_point</i>	
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .		
Related Features			
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal		Vertical
	Center of Antenna Array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.

Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 10 ft	± 20 ft	± 20 ft
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature	
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.	
faaFacilityId (String 4)		Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]	
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)		Specifies the type of NAVAID	
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)		The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	
centerlineDistance (Real)		Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.	
stopEndDistance (Real)		Provide the distance distance the from the antenna along the centerline to the stop end of the runway.	
offsetDistance (Real)		The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.	
offsetDirection (Enumeration: CodeOffsetDirection)		Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.	
lightingType (Enumeration: CodeLightingConfigurationType)		The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")	

status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.11.Navaid Equipment – Inner Marker (IM)

Definition: Marker beacon used with an ILS (CAT II) precision approach located between the middle marker and the end of the ILS runway, transmitting a radiation pattern keyed at six dots per second and indicating to the pilot, both aurally and visually, that he/she is at the designated decision height (DH), normally 100 feet above the touchdown zone elevation, on the ILS CAT II approach. It also marks progress during a CAT III approach.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS- -	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			

Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation		No monumentation required.		
Survey Point Location	Horizontal		Vertical	
	Center of Antenna Array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
				
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 10 ft		Orthometric	Ellipsoidal
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest one foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature		
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.		
faaFacilityId (String 4)		Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]		

navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.

ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.12.Navaid Equipment – Localizer (LOC)

Definition: The component of an ILS that provides course guidance to the runway.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	Mark and document the selected survey point for validation by NGS and inclusion in the Airports GIS database. When the ends of the runway surface have been determined, mark the positions using a nail and washer, chisel square, or paint if possible with a distinctive inscription to ensure future identification. Mark the survey point with a nail and washer inscribed with the setting company's name and year.			
Survey Point Location	Horizontal		Vertical	
	Center of Antenna Supporting Structure		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	

Determining the HSP and Vertical Point #1 of a Localizer

A localizer (LOC) antenna array is normally located beyond the departure end of the runway it serves (localizer 17 is on the south end of the runway) and generally consists of several pairs of directional antennas. The localizer operates as a component of the Instrument Landing System or ILS; however, it can be operated by itself. Since the localizer is made up of a set of arrays (antenna’s) it provides a unique challenge in determining the center of the antenna unit. In the figure below, there are 14 antenna elements. The proper method of determining the HSP is to find the center of the supporting structure at the center of the antenna array. In this figure, this is the center of the center of structures supporting the seventh antenna element from each side.

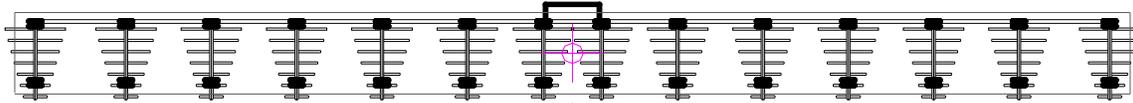


Illustration of a localizer antenna array depicting each of the elements and the selection of the HSP and Vertical Point #1.

In order to locate the center of the supporting structure the surveyor, is required to first locate the center of the array and then the center of the supporting structure. In order to locate the center of the supporting structure in the figure above, the surveyor would locate the center of the space between the seventh element from each end. It is recommended the surveyor use tape measures or string to form a “X” and then use a plumb bob to locate the point at the base of the antenna. Another method of the same technique is to draw lines in between the bolts supporting the elements and forming an “X” to locate the center. If the antenna array has an odd number of elements such as 15, then the center of the supporting structure would be the center of the eighth element.



Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 1 ft	± 0.25 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	

Feature Attributes	
Attribute (Datatype)	Description
name (VARCHAR2 (50))	Name of the feature
description (VARCHAR (255))	A description or other unique information concerning the subject item, limited to 255 characters.
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility

runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.13. Navaid Equipment – Localizer Type Directional Aid (LDA)

Definition: A NAVAID used for nonprecision instrument approaches with utility and accuracy comparable to a localizer but which is not a part of a complete ILS and is not aligned with the runway.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				

Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of Antenna Supporting Structure		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 1 ft		Orthometric	Ellipsoidal
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest one foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature		
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.		
faaFacilityId (String 4)		Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]		
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)		Specifies the type of NAVAID		
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System		
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.		
antennaToThresholdDistance (Real)		The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.		
centerlineDistance (Real)		Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.		
stopEndDistance (Real)		Provide the distance distance the from the antenna along the centerline to the stop end of the runway.		
offsetDistance (Real)		The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.		

offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to “visual”)
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.14.Navaid Equipment – Middle Marker (MM)

Definition: A marker beacon that defines a point along the glideslope of an ILS normally located at or near the point of decision height (ILS Category I). It is keyed to transmit alternate dots and dashes, with the alternate dots and dashes keyed at the rate of 95 dot/dash combinations per minute on a 1300 Hz tone, which is received aurally and visually by compatible airborne equipment.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	

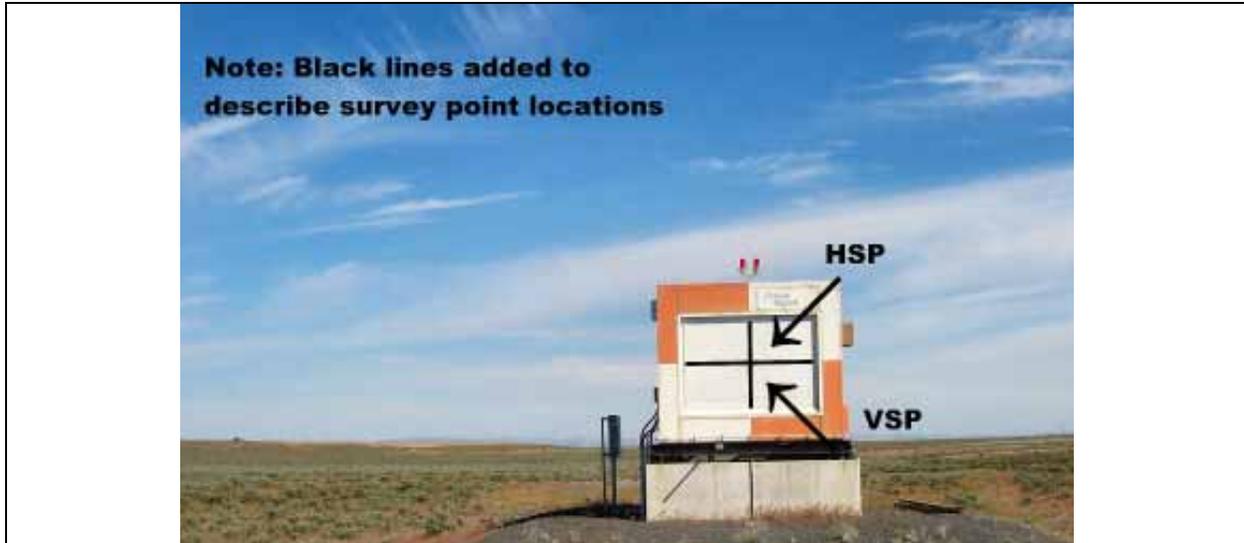
Information Assurance Level	Unclassified		
Equivalent Standards	AIXM	<i>NavaidEquipment</i>	Extension
	FGDC	<i>NavaidEquipmentExtension</i>	Extension
	SDSFIE	<i>navigational_aid_point</i>	
Documentation and Submission Requirements	Document this feature as described in paragraphs <u>1.5.2</u> and <u>1.5.3</u> .		
Related Features			
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	Center of Antenna Array	The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
			
Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 10 ft	± 20 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2 (50))	Name of the feature		
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.		

faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.

referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.15.Navaid Equipment – MLS Azimuth Antenna (MLSAZ)

Definition: Antenna in a Microwave Landing System (MLS) providing horizontal guidance for incoming aircraft. MLS is precision instrument approach system operating in the microwave spectrum which normally consists of an Azimuth Station, an Elevation Station and Precision Distance Measuring Equipment.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Phase Center Reference Point		Phase Center Reference Point	



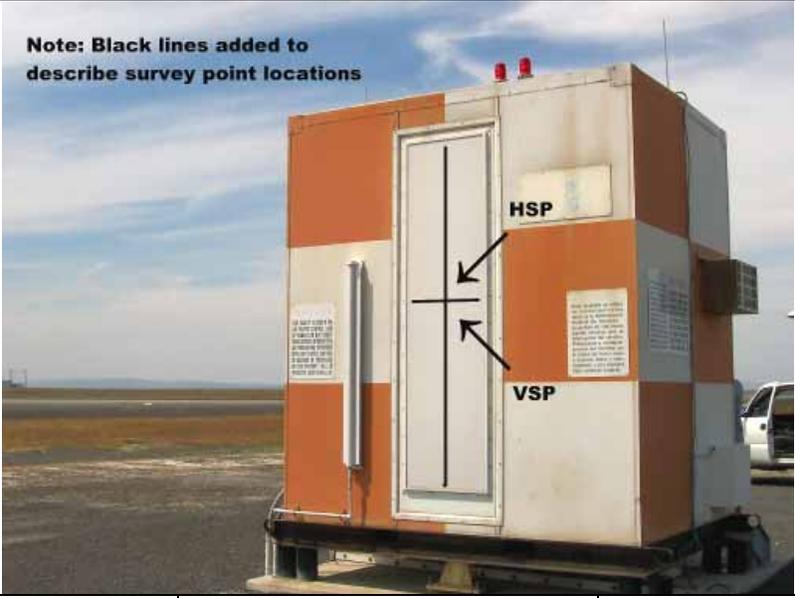
Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 1 ft	± 1 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	

Feature Attributes	
Attribute (Datatype)	Description
name (VARCHAR2 (50))	Name of the feature
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.

centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to “visual”)
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.16.Navaid Equipment – MLS Elevation Antenna (MLSEZ)

Definition: Antenna in a Microwave Landing System (MLS) providing vertical guidance for incoming aircraft. MLS is precision instrument approach system operating in the microwave spectrum which normally consists of an Azimuth Station, an Elevation Station and Precision Distance Measuring Equipment.	
Feature Group	Navigational Aids

Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	
AutoDesk Standards	4	Continuous	1	
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	NavaidEquipment	Extension	
	FGDC	NavaidEquipmentExtension	Extension	
	SDSFIE	navigational_aid_point		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3.			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Phase Center Reference Point		Phase Center Reference Point	
				
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 1 ft		Orthometric	Ellipsoidal
			± 0.25 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest one foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature		

description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.

referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.17.Navaid Equipment – Non-Directional Beacon (NDB)

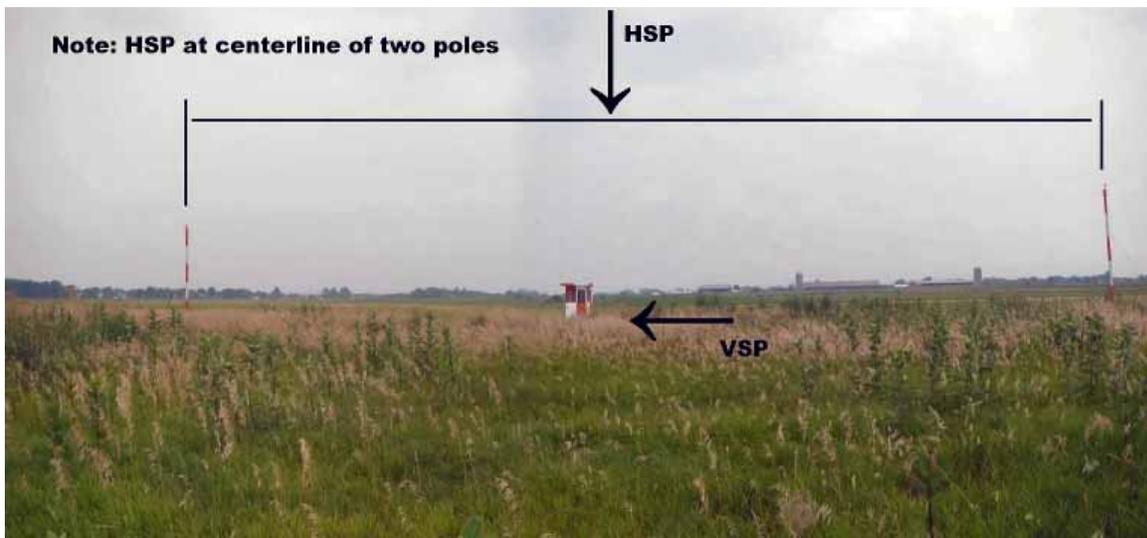
Definition: An L/MF or UHF radio beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his/her bearing to or from the radio beacon and "home" on or track to or from the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a Compass Locator.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			

Survey Point Location	Horizontal	Vertical
	Center of Antenna Array	The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.

The following photograph displays an NDB of the single frame type:



The following photography displays a NDB of the dual frame type:



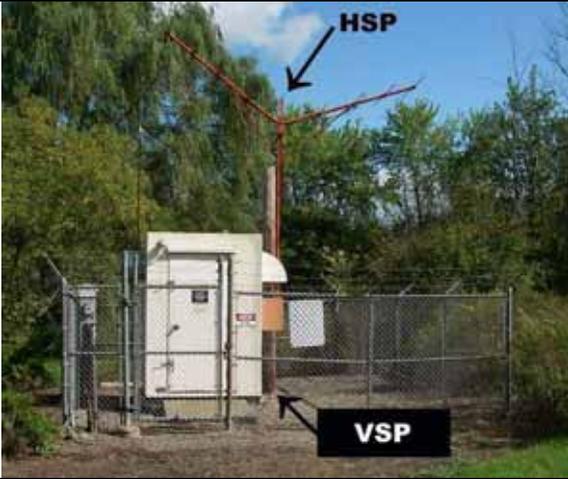
Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 10 ft	± 20 ft	N/A

Resolution	Geographic Coordinates	Distances and Elevations
	Hundredth of arc second	Nearest one foot
Feature Attributes		
Attribute (Datatype)	Description	
name (VARCHAR2 (50))	Name of the feature	
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.	
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]	
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID	
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.	
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.	
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.	
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.	
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")	
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
owner (String 75)	The owner of the facility	

runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.18.Navaid Equipment – Outer Marker (OM)

Definition: A marker beacon at or near the glideslope intercept altitude of an ILS approach. It is keyed to transmit two dashes per second on a 400 Hz tone, which is received aurally and visually by compatible airborne equipment. The OM is normally located four to seven miles from the runway threshold on the extended centerline of the runway.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			

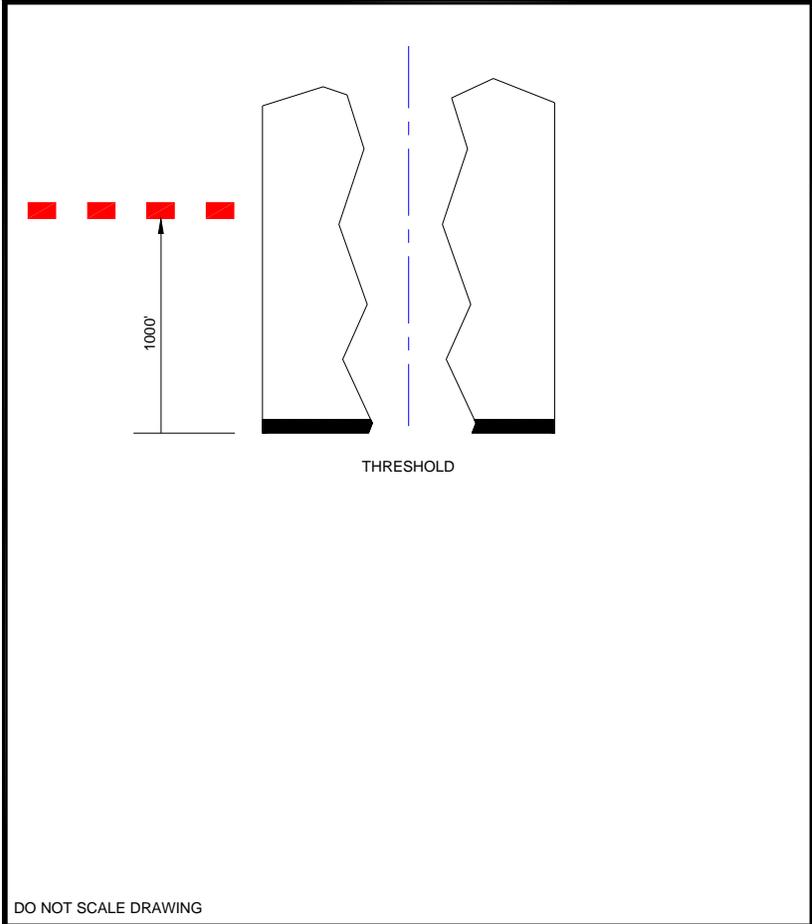
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation		No monumentation required.		
Survey Point Location	Horizontal		Vertical	
	Center of Antenna Array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
				
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 10 ft		Orthometric	Ellipsoidal
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest one foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature		
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.		
faaFacilityId (String 4)		Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]		

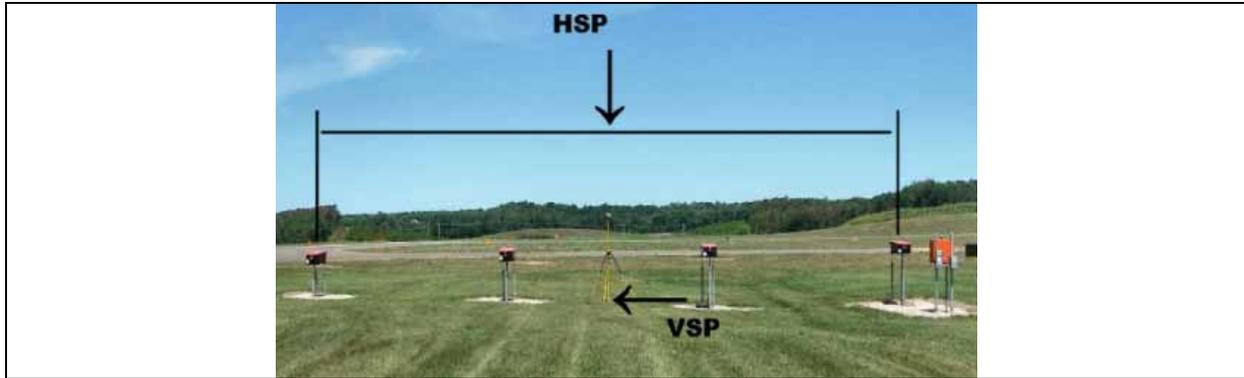
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.

ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.19.Navaid Equipment – Precision Approach Path Indicator (PAPI) System

Definition: An airport lighting facility, similar to VASI, providing vertical approach slope guidance to aircraft during approach to landing. PAPIs consist of a single row of either two or four lights, normally installed on the left side of the runway, and have an effective visual range of about 5 miles during the day and up to 20 miles at night. PAPIs radiate a directional pattern of high intensity red and white focused light beams which indicate that the pilot is "on path" if the pilot sees an equal number of white lights and red lights, with white to the left of the red; "above path" if the pilot sees more white than red lights; and "below path" if the pilot sees more red than white lights.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				

 <p>DO NOT SCALE DRAWING</p> <p>SYMBOLS LEGEND</p> <p>■ RED AND WHITE PAPI LIGHTS</p> <p>PAPI PRECISION APPROACH PATH INDICATOR LIGHTS</p>	<p>The PAPI is a simple visual aid to assist pilots during their approach to landing in Visual Flight Rules (VFR) conditions. It enables pilots to acquire the correct glide slope and subsequently to maintain their position on it, thus ensuring an accurate approach and landing. The PAPI system consists of four sharp transition projector units located at the side of the runway spaced laterally ± 30 foot intervals. A second complementary set is sometimes provided on the opposite side of the runway. The setting angles of the red/white interfaces of the four units are graded; the differences in angle between the units being typically 20 minutes of arc. The nominal glide slope is midway between the angular settings of the center pair of units and the on-glide-slope signal and is thus two red and two white lights in the bar. If the aircraft goes below the glide slope, the pilot will see a progressively increasing number of red lights. Conversely, if the aircraft goes above the glide slope, the number of white lights seen is increased.</p>	
<p>Monumentation</p>	<p>No monumentation required.</p>	
<p>Survey Point Location</p>	<p>Horizontal</p>	<p>Vertical</p>
	<p>Center of light array</p>	<p>The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.</p>



Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 5 ft	± 10 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	

Feature Attributes	
Attribute (Datatype)	Description
name (VARCHAR2 (50))	Name of the feature
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.

stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to “visual”)
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.20.Navaid Equipment – Precision Approach Radar (PAR) Touchdown Reflectors

Definition: Radar equipment in some ATC facilities operated by the FAA and/or the military services at joint-use civil/military locations and separate military installations to detect and display azimuth, elevation, and range of aircraft on the final approach course to a runway.	
Feature Group	Navigational Aids
Feature Class Name	NavaidEquipment
Feature Type	Point
CADD Standard Requirements	
Layer/Level	Description
C-AFLD-AIDS-	Airfield Navigational Aid -

	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 10 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest one foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature		
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.		
faaFacilityId (String 4)		Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]		
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)		Specifies the type of NAVAID		

navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.

Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.
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5.10.21.Navaid Equipment – Pulse Light Approach Slope Indicator (PLASI) System

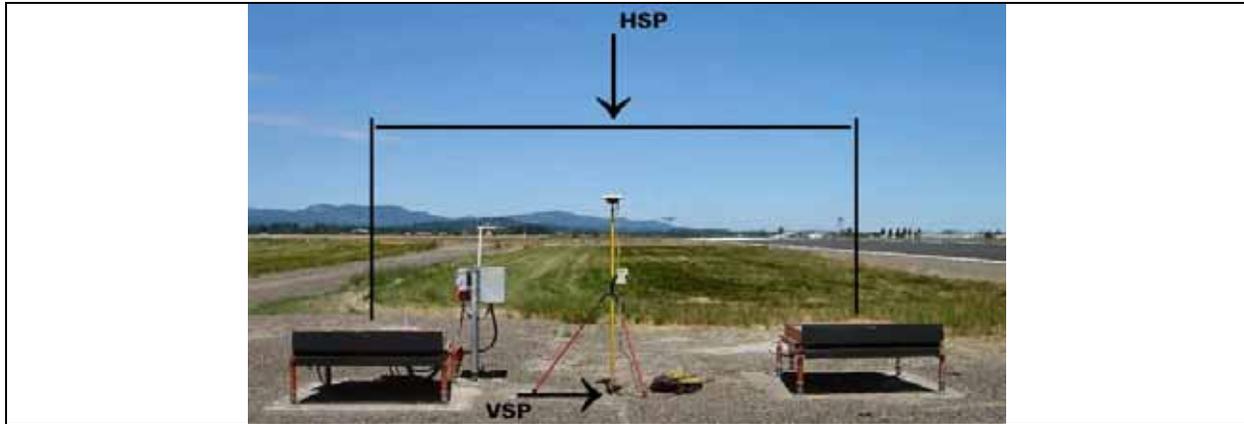
Definition: Pulse Light Approach Slope Indicator (PLASI) systems are a visual approach aid for use in visual flight conditions.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	NavaidEquipment		Extension
	FGDC	NavaidEquipmentExtension		Extension
	SDSFIE	navigational_aid_point		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of light array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest one foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature		
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.		

faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.

referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.22. Navaid Equipment – Pulsating Visual Approach Slope Indicator (PVASI)

Definition: The Visual Approach Slope Indicator (VASI) is a system of lights on the side of an airport runway that provides visual descent guidance information during the approach to a runway.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs <u>1.5.2</u> and <u>1.5.3</u> .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of light array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	



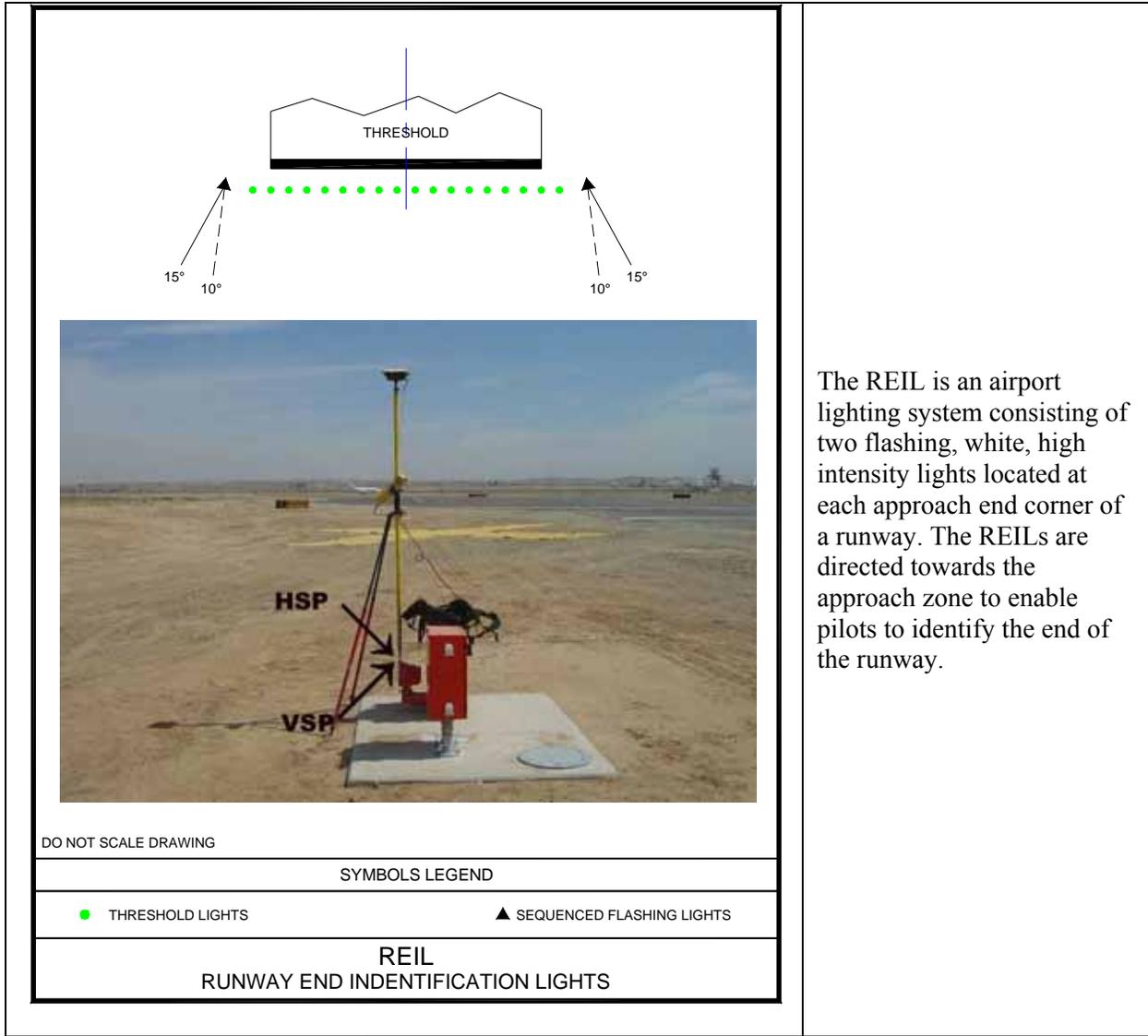
Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 5 ft	± 10 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature	
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.	
faaFacilityId (String 4)		Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]	
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)		Specifies the type of NAVAID	
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)		The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	

centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.23.Navaid Equipment – Runway End Identifier Lights (REIL)

Definition: Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.	
Feature Group	Navigational Aids
Feature Class Name	NavaidEquipment
Feature Type	Point

CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				



The REIL is an airport lighting system consisting of two flashing, white, high intensity lights located at each approach end corner of a runway. The REILs are directed towards the approach zone to enable pilots to identify the end of the runway.

Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	Center of Light	The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 3 ft	± 5 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature	
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.	

faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.

referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.24.Navaid Equipment – Simplified Directional Facility (SDF)

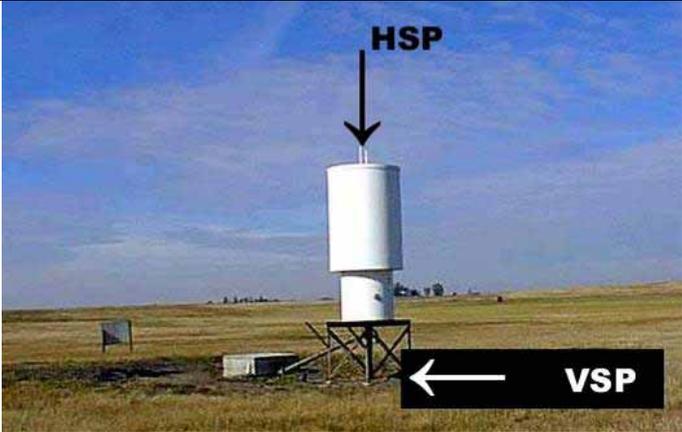
Definition: NAVAID used for nonprecision instrument approaches. The final approach course is similar to that of an ILS localizer except that the SDF course may be offset from the runway, generally not more than 3 degrees, and the course may be wider than the localizer, resulting in a lower degree of accuracy.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			

Survey Point Location	Horizontal	Vertical	
	Center of Antenna Supporting Structure	The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
Accuracy Requirements (in feet)	Horizontal	Vertical	
	± 1 ft	Orthometric	Ellipsoidal
		± 1 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2 (50))	Name of the feature		
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.		
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]		
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID		
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System		
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.		
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.		
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.		
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.		
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.		

offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to “visual”)
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.25.Navaid Equipment – Tactical Air Navigation (TACAN)

Definition: An ultra-high frequency electronic rho-theta air navigation aid which provides suitably equipped aircraft a continuous indication of bearing and distance to the TACAN station.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>	Extension	

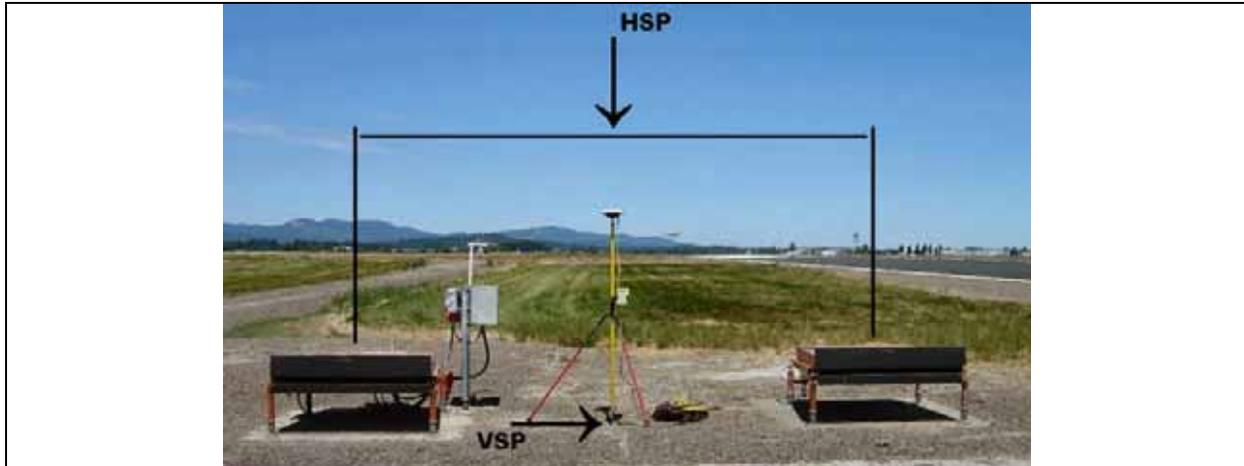
	FGDC	<i>NavaidEquipmentExtension</i>	
	SDSFIE	<i>navigational_aid_point</i>	
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .		
Related Features			
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal		Vertical
	Center of Antenna Cover		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.
			
Accuracy Requirements (in feet)	Horizontal		Vertical
	± 10 ft		Orthometric ± 20 ft Ellipsoidal N/A
Resolution	Geographic Coordinates		Distances and Elevations
	Hundredth of arc second		Nearest one foot
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature	
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.	

faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.

referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.26.Navaid Equipment – Tricolor Visual Approach Slope Indicator System (TRCV)

Definition: Tri-color visual approach slope indicators normally consist of a single light unit projecting a three-color visual approach path into the final approach area of the runway upon which the indicator is installed.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of light array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	



Accuracy Requirements (in feet)	Horizontal	Vertical	
	± 5 ft	Orthometric ± 10 ft	Ellipsoidal N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature	
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.	
faaFacilityId (String 4)		Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]	
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)		Specifies the type of NAVAID	
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)		The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	

centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to “visual”)
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDS. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.27.Navaid Equipment – “T” Visual Approach Slope Indicator System (T-VASI)

Definition: T-VASI system provides approach slope guidance by means of illuminated symbols like the PAPI.	
Feature Group	Navigational Aids
Feature Class Name	NavaidEquipment
Feature Type	Point

CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs <u>1.5.2</u> and <u>1.5.3</u> .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of light array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric ± 10 ft	Ellipsoidal ± 10 ft
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest one foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature		
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.		
faaFacilityId (String 4)		Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]		
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)		Specifies the type of NAVAID		

navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.

Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.
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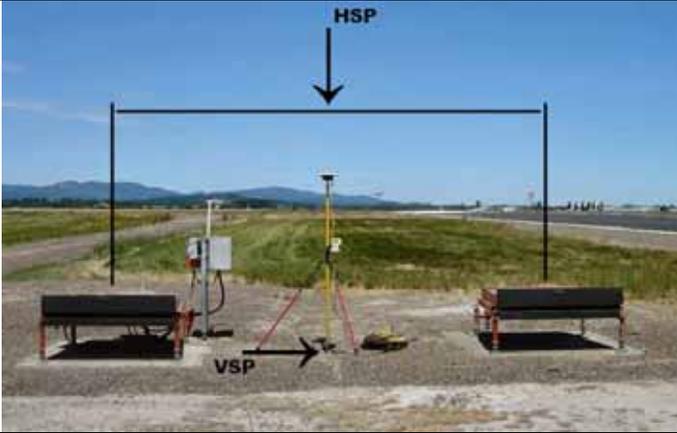
5.10.28.Navaid Equipment – VHF Omni Directional Range (VOR)

Definition: A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the NAS. The VOR periodically identifies itself by Morse Code and may have an additional voice identification feature. Voice features may be used by ATC or FSS for transmitting instructions/information to pilots.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavigationalAidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of Antenna Cover		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	

centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDS. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.29.Navaid Equipment – Visual Approach Slope Indicator System (VASI)

Definition: An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he/she is "on path" if he/she sees red/white, "above path" if white/white, and "below path" if red/red. Some airports serving large aircraft have three-bar VASIs which provide two visual glide paths to the same runway.

Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	
AutoDesk Standards	4	Continuous	1	
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>	Extension	
	FGDC	<i>NavaidEquipmentExtension</i>	Extension	
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3 .			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of Light Array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
				
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
Resolution	Geographic Coordinates		Distances and Elevations	
	Hundredth of arc second		Nearest one foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature		
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.		

faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.

referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.30.Navaid Equipment – VOR/TACAN (VORTAC)

Definition: A navigation aid providing VOR azimuth, TACAN azimuth, and TACAN distance measuring equipment (DME) at one site.				
Feature Group	Navigational Aids			
Feature Class Name	NavaidEquipment			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	Color	Line Type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavaidEquipment</i>		Extension
	FGDC	<i>NavaidEquipmentExtension</i>		Extension
	SDSFIE	<i>navigational_aid_point</i>		
Documentation and Submission Requirements	Document this feature as described in paragraphs 1.5.2 and 1.5.3.			
Related Features				
Data Capture Rules: <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	Center of Antenna Cover		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	



Accuracy Requirements (in feet)	Horizontal ± 10 ft	Vertical	
		Orthometric ± 20 ft	Ellipsoidal N/A
Resolution	Geographic Coordinates Hundredth of arc second	Distances and Elevations Nearest one foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2 (50))	Name of the feature		
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.		
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments will be identified with the letters A, B, C, etc., following the identification (e.g., NQIB). The same applies to PAR identifiers. These alpha codes must be the same as those used to accomplish the daily flight log. For ARSR facilities, use "Z" plus the identifier of the controlling ARTCC or military installation. Light systems will use the airport identifier and runway number. [Source:FAA Order 8250-42]		
navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID		
navigationalAidSystemType (Enumeration: CodeNavaidSystemType)	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System		
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.		
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.		

centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of Visual navigational aid system (use only when CodeNavaidEquipmentType is set to "visual")
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway is served by a precision approach aid (such as a PAR), provide a separate feature for each runway. This attribute is only required for ILS, MLS, TLS, and PAR.
referencePointEllipsoidHeight	Provide the height above the ellipsoid (HAE) for the referencePoint.
referencePointThreshold (Real)	Distance from the runway reference point to the threshold. Provide this distance to the nearest tenth of a foot. [Source: FAA AAS-100]
thresholdCrossingHeight (Real)	The designated crossing height of the flight path angle above the Landing Threshold Point (or Fictitious Threshold Point).
highAngle (Real)	Maximum approach light vertical angle [Source: FAA AAS-100]
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.10.31.NAVAID Site

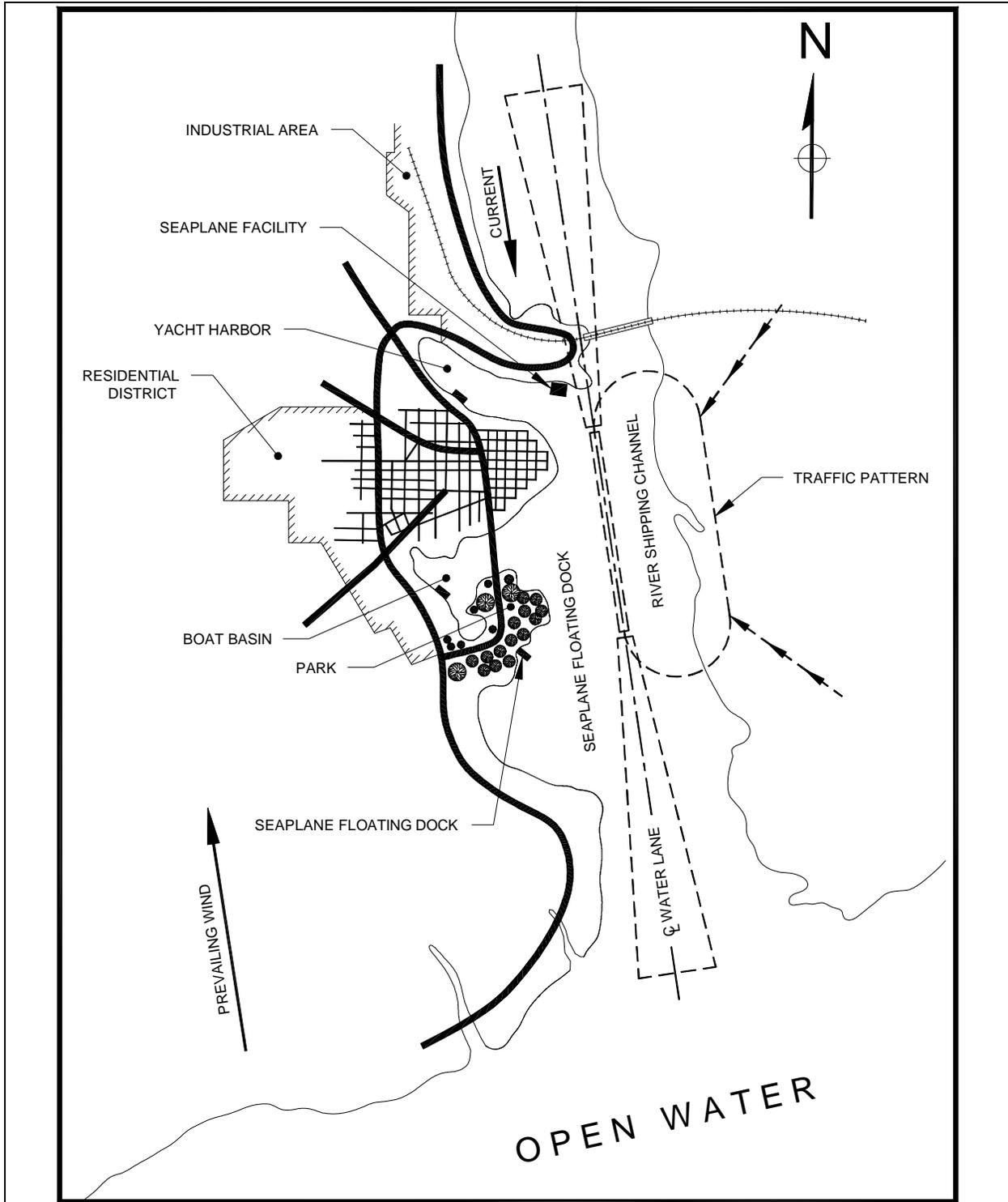
Definition: The parcel, lease, or right-of-way boundary for a NAVAID or facility that is located off airport property.	
Feature Group	Navigational Aids
Feature Class Name	NAVAIDSite
Feature Type	Polygon

CADD Standard Requirements			
Layer/Level	Description		
C-AIRF-AIDS-SITE	Airfield Navigational Aid - Site		
	Color	Linetype	Line Weight
AutoDesk Standards	1	Continuous	1
MicroStation Standards	3		7
Information Assurance Level	Unclassified		
Equivalent Standards	AIXM	<i>NavaidSite</i>	Extension
	FGDC	<i>NavigationalAidSite</i>	Extension
	SDSFIE	<i>Airfield_facility_surface_site</i>	
Documentation and Submission Requirements	No documentation required.		
Related Features			
Data Capture Rules:	<i>Collect a closed polygon to its greatest horizontal extent.</i>		
Monumentation	No monumentation required.		
Survey Point Location	Horizontal		Vertical
	N/A		N/A
Accuracy Requirements (in feet)	Horizontal		Vertical
	± 5 ft		Orthometric
			Ellipsoidal
± 10 ft		N/A	
Resolution	Geographic Coordinates		Distances and Elevations
	Hundredth of arc second		Nearest one foot
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature	
description (VARCHAR2 (255))		A brief description of the facility and any special characteristics.	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
faaFacilityId (String 4)		The location identifier assigned to the feature by FAA	
facilityType (String 16)		The type of facility or feature related to airfield operations.	
propertyCustodian (String 50)		The regional property management office responsible for ownership of the site	
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.	

5.11. Group: SEAPLANE

5.11.1. Water Operating Area

Definition: An area designated and marked for the takeoff and landing of aircraft. This is equivalent to the Airport Operating Area of a land based airport.				
Feature Group	SeaPlane			
Feature Class Name	WaterOperatingArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-SEAP-WTOA-	Seaplane dock			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	None		
	FGDC	None		
	SDSFIE	None		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect the WaterOperatingArea using a bounding polygon to capture the area at its greatest extents.</i>				



Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	N/A	N/A	
Accuracy Requirements (in feet)	Horizontal	Vertical	
	± 5 ft	Orthometric	Ellipsoidal
		± 20 ft	N/A

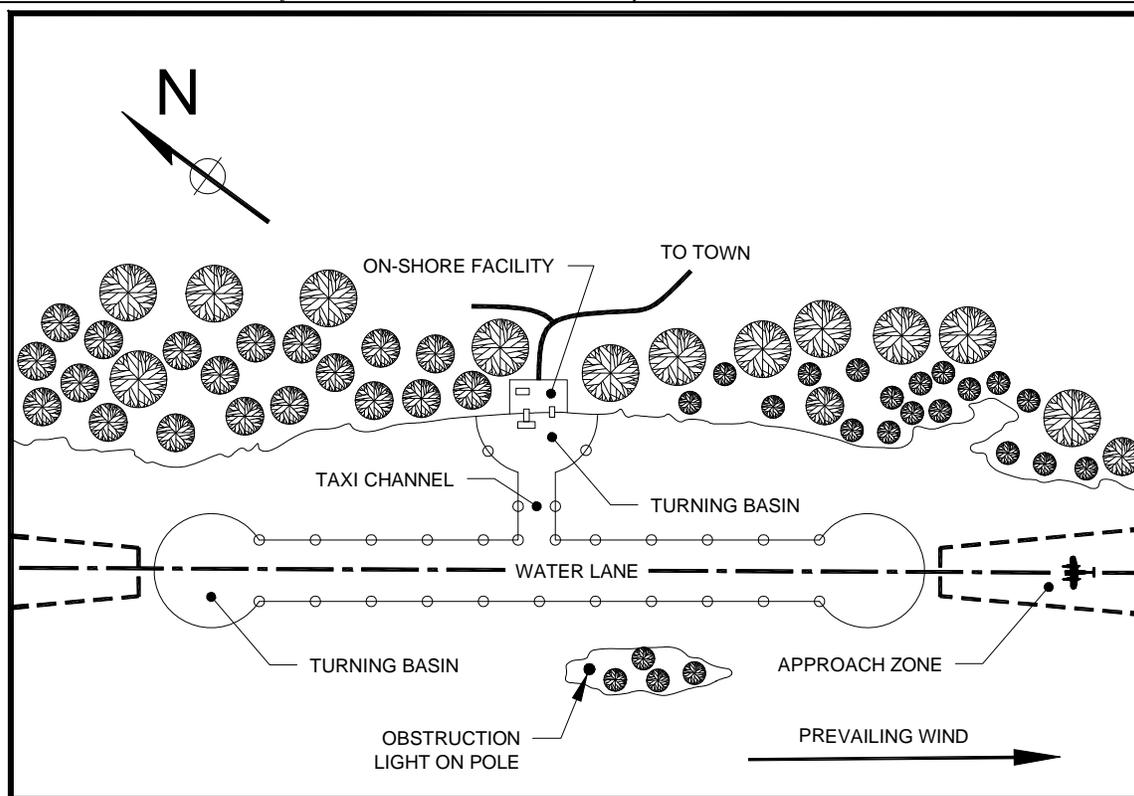
Resolution	Geographic Coordinates	Distances and Elevations
	Five hundredth of arc second	Nearest foot
Feature Attributes		
Attribute (Datatype)	Description	
name (VARCHAR2 (50))	Name of the feature water body (river/lake).	
description (VARCHAR2 (255))	Description of the feature.	
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
surfaceMaterial (Enumeration: CodeSurfaceMaterial)	Code used to indicate the type of water the water operating area is on or planned to use.	
length (Integer)	Specify the overall length of the WaterOperatingArea to the nearest 5 feet	
width (Integer)	Specify the overall width of the waterOperatingArea to the nearest 5 feet	
currentFlowRate (Integer)	Measure and specify the rate of the current flow in the WaterOperatingArea in miles per hour	
compassLocation (Enumeration: CodeCompassLocation)	Specify the magnetic bearing of the current flow direction	
tidalRange (Integer)	Specify (in feet) the height difference in height from mean low mean high tide	
coordinatedUseType (Enumeration: CodeCoordinatedUseType)	Specify the primary coordinated use of the waterway. If no single activity comprises the majority of the coordinated use then specify multiple.	
coordinatedUseActivityLevel (Integer)	Provide the amount of activity based on percentage of daily use of the primary coordinated use type. If coordinated use type is multiple provide the largest activity level of the single most expected activity.	
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.	

5.11.2. Water Lane End

Definition: The end of the water lane (typically located at the furthest end of a turning basin) suitable for landing or takeoff runs of aircraft. WaterLaneEnds define the water lane and describe the approach/departure procedure characteristics of a water lane.				
Feature Group	SeaPlane			
Feature Class Name	WaterLaneEnd			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-SEAP-LNDA-	Seaplane landing area			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1 MM	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Restricted			

Equivalent Standards	AIXM	None
	FGDC	None
	SDSFIE	None
Documentation and Submission Requirements	None	
Related Features		

Data Capture Rules: Collect a point on the turning basin boundary identifying the point where aeronautical activity is expected to occur. Typically, markers or buoys define the area, locate the WaterLaneEnd at least 10 feet inside the markers or buoys.



Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	

Feature Attributes	
Attribute (Datatype)	Description
name (VARCHAR2 (50))	Name of the feature.
description (VARCHAR2 (255))	Description of the feature.
magneticBearing	Compute and specify the magnetic bearing of the primary water lane to the nearest degree based on the location of the reciprocal WaterLaneEnd points. This is similar to the runway magnetic bearing for a land based airport.

compassLocation (Enumeration: CodeCompassLocation)	Code indicating the cardinal compass location of the turning basin from centroid of the WaterLaneEnd. This feature is similar to the land based airport RunwayEnd.
restriction (String 240)	Any restrictions or cautions associated with the sea plane landing area.
airMarker (Boolean)	Code specifying if a standard air maker is used to indicate if a standard air marker is in use at the location.
type (Boolean)	Identifies the WaterLaneEnd as the primary or alternate. Primary = Y, alternate=N
color (Enumeration: CodeColor)	The color of the air marker at the location (if any)
lightingType (Enumeration: CodeLightingConfigurationType)	Type of lighting available at the location (if any)
approachGuidance (Enumeration: CodeApproachGuidance)	Identifies the type of approach guidance in use or planned for the water operating area.
Length (Number 10)	Specify the overall length of the primary water lane
width (Number 10)	Specify the overall width of the primary water lane
depth (Number 10)	Specify the depth of the primary water lane with respect to mean lowest low tide
centroid	The geographic location of the primary water centroid, used to determine the primary and alternate water lanes within the water operating area.
status (Enumeration: codeStatus)	Describes the operational status of the feature.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.11.3. Taxi Channel

Definition: A water channel used for the movement of aircraft between on shore facilities and the water lane. [Source AC 150/5395-1]				
Feature Group	SeaPlane			
Feature Class Name	TaxiChannel			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-SEAP-TAXI-	Seaplane landing area			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1 MM	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	None		
	FGDC	None		
	SDSFIE	None		

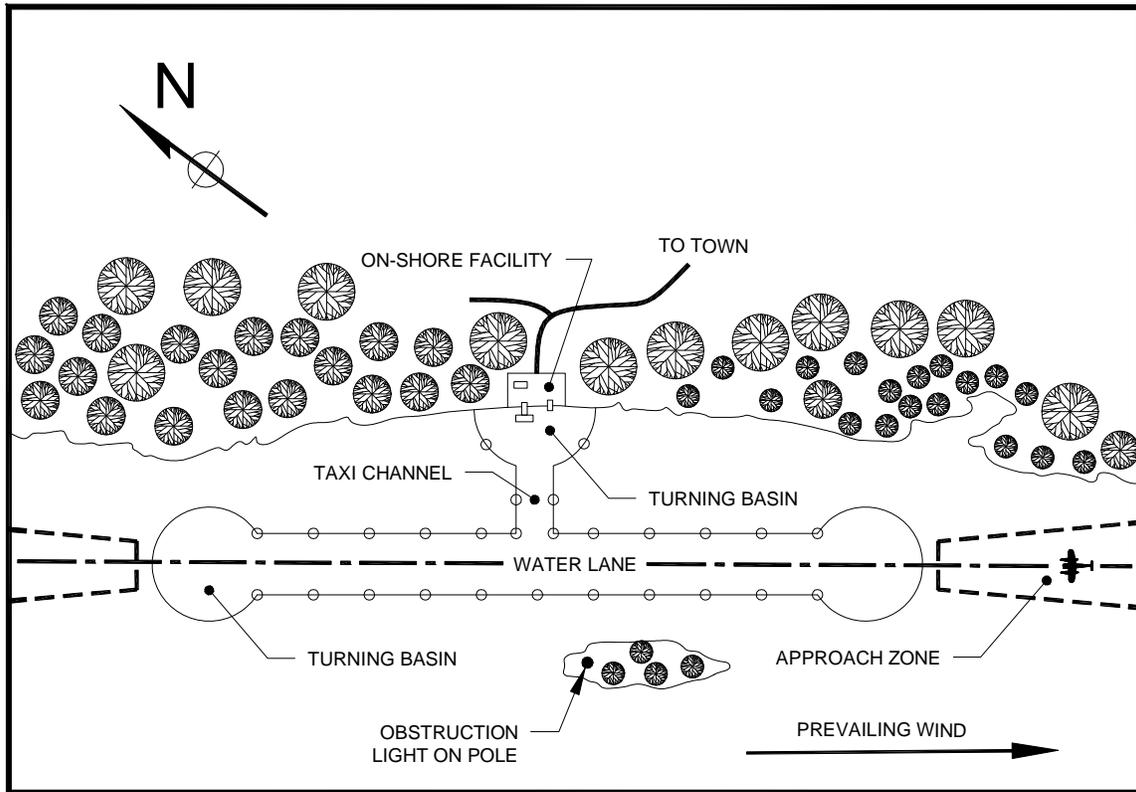
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect the taxi channel at its greatest horizontal extents. Existing markers or buoys may define the width. In the instance the taxi channel is not marked for width, refer to width published by FAA in the U.S. Terminal Procedures.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Any commonly used name associated with the taxi channel.		
description (VARCHAR2 (255))		Description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
restriction (String 240)		Any restrictions or cautions associated with the taxi channel		
length (Number 10)		Specify the overall length of the taxi channel		
width (Number 10)		Specify the overall width of the taxi channel		
depth (Number 10)		Specify the depth of the taxi channel with respect to mean lowest low tide		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.11.4. Turning Basin

Definition: A water area used for the maneuvering of aircraft where the use of water surface is restricted. Turning basins should be located adjacent to shoreline facilities and at each end of the water operating area.[Source AC 150/5395-1]				
Feature Group	SeaPlane			
Feature Class Name	TurningBasin			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level		Description		
C-SEAP-TBSN-		Seaplane landing area		
		Color	Linetype	Line Weight
AutoDesk Standards	4	Continuous	1 MM	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Restricted			

Equivalent Standards	AIXM	None
	FGDC	None
	SDSFIE	None
Documentation and Submission Requirements	None	
Related Features		

Data Capture Rules: *Collect the turning basin at its greatest horizontal extents. Existing markers or buoys may define the boundary; if so collect the boundary inside the buoys.*



Monumentation	No monumentation required.		
Survey Point Location	Horizontal		Vertical
	N/A		N/A
Accuracy Requirements (in feet)	Horizontal		Vertical
	± 5 ft	Orthometric	Ellipsoidal
		± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations
	Five hundredth of arc second		Nearest foot

Feature Attributes	
Attribute (Datatype)	Description
name (VARCHAR2 (50))	A commonly used name for the turning basin
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
restriction (String 240)	Any restrictions or cautions associated with the turning basin
length (Number 10)	Specify the overall length of the turning basin to the nearest 5 feet.
width (Number 10)	Specify the overall width of the turning basin to the nearest 5 feet

depth (Number 10)	Specify the depth of the turning basin with respect to mean lowest low tide to the nearest 0.5 foot.
diameter (Number 10)	The diameter of the turning basin available for use by aircraft to the nearest 5 feet.
compassLocation (Enumeration: CodeCompassLocation)	Code indicating the cardinal compass location of the turning basin from centroid of the WaterLaneEnd
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.11.5. Navigation Buoy

Definition: A floating marker which is moored to the bottom at a specific known location, which is used as an aid to navigation or for other special purpose.				
Feature Group	SeaPlane			
Feature Class Name	NavigationBuoy			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-SEAP-BUOY-	Seaplane navigation buoy			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1 MM	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>NavigationBuoy</i>		Core
	FGDC	<i>NavigationBuoy</i>		
	SDSFIE	<i>marine_navigation_buoy_point</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect at the center and highest point on the buoy regardless of water level at time of data collection.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Any commonly used name associated with the buoy.			

description (VARCHAR2 (255))	A description or other unique information concerning the buoy limited to 255 characters. Use this to describe navigational requirements or warnings.
designator (String 20)	The official number of the buoy.
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
type (Enumeration: CodeBuoyType)	Discriminator - The type of the buoy or marker.
lightingType (Enumeration: CodeLightingConfigurationType)	Type of lighting available at the location (if any)
color (Enumeration: CodeColor)	Code used to indicate the navigational color of the buoy.
owner (Enumeration: CodeOwner)	Code indicating the owner of the navigation buoy.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.11.6. Seaplane Ramp Centerline

Definition: The centerline of ramps specifically designed to transit seaplanes to or from land or water				
Feature Group	SeaPlane			
Feature Class Name	SeaplaneRampCenterline			
Feature Type	Line			
CADD Standard Requirements				
Layer/Level	Description			
C-SEAP-RAMP-CNTR	Seaplane ramp centerline			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1 MM	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>SeaplaneRampSite</i>		Core
	FGDC	<i>SeaplaneRampCenterline</i>		
	SDSFIE	<i>sea_plane_ramp_centerline</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect centerline of ramp from edge of pavements or other surface type utilized for entering and exiting water. Line extends from edge of water to apron or taxiway.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 20 ft	N/A

Resolution	Geographic Coordinates	Distances and Elevations
		Five hundredth of arc second
Feature Attributes		
Attribute (Datatype)	Description	
name (VARCHAR2 (50))	Name of the feature.	
description (VARCHAR2 (255))	Description of the feature.	
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
length (Integer)	Specify the length of the seaplane ramp centerline from the water to the shoreline	
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.	

5.11.7. Seaplane Ramp Site

Definition: Ramps specifically designed to transit seaplanes to or from land to water.				
Feature Group	SeaPlane			
Feature Class Name	SeaplaneRampSite			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-SEAP-RAMP-	Seaplane ramp site			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>SeaplaneRampSite</i>		Core
	FGDC	<i>SeaplaneRampSite</i>		
	SDSFIE	<i>sea_plane_ramp_site</i>		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: <i>Collect the ramp width at its greatest horizontal limits.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	Description of the feature.			

status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
width (Integer)	Identify the width of the seaplane ramp site
slope (integer)	The slope of the ramp specified as an integer value.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.11.8. Docking Area

Definition: A defined area on a seaplane base either fixed or floating, intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance.				
Feature Group	SeaPlane			
Feature Class Name	DockArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-SEAP-DOCK-	Seaplane dock			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	<i>FloatingDockSite</i>		Core
	FGDC	<i>FloatingDockSite</i>		
	SDSFIE	<i>floating_dock_site</i>		
Documentation and Submission Requirements	None			

Related Features		
Data Capture Rules: <i>Collect the dockArea at its greatest horizontal extents.</i>		
Monumentation	No monumentation required.	
Survey Point Location	Horizontal	Vertical
	N/A	N/A

Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 5 ft	± 20 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Five hundredth of arc second	Nearest foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR (50))	Name of the feature.		
description (VARCHAR (255))	Description of the feature.		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
pier (Boolean)	Specify if a pier is available in the dockArea		
pierLength (Integer)	Specify the overall length available for the pier		
pierWidth (Integer)	Specify the overall length available for the pier		
pierMaterial (Enumeration: CodeVerticalStructureMaterial)	Specify the materials used in the construction of the pier.		
hoistingCapability (Integer)	Specify the hoisting capability in pounds		
marineRailwayPlatformLength (Integer)	Specify the length of the marine railway platform		
marineRailwayPlatformWidth (Integer)	Specify the width of the marine railway platform		
marineRailwayPlatformCapacity (Integer)	Specify the capacity of the marine railway platform in pounds		
gangway (Boolean)	Specify if a gangway is available		
gangwayLength (Integer)	Specify the overall length available for the gangway		
gangwayWidth (Integer)	Specify the overall length available for the gangway		
floatingDock (Boolean)	Specify if a floating dock is available		
gangwayMaterial (Enumeration: CodeVerticalStructureMaterial)	Specify the material used to construct the gangway		
floatingDockLength (Integer)	Specify the overall length available for the floating dock		
floatingDockWidth (Integer)	Specify the overall length available for the floating dock		
floatingDockMaterial (Enumeration: CodeVerticalStructureMaterial)	Specify the material used in constructing the dockArea		
floatingBarge (Boolean)	Specify if a floating barge is available		
floatingBargeLength (Integer)	Specify the overall length available for the floating barge		
floatingBargeWidth (Integer)	Specify the overall length available for the floating barge		
floatingBargeMaterial Enumeration: CodeVerticalStructureMaterial)	Specify the material used in constructing the floatingBarge		
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.		

5.11.9. Anchorage Area

Definition: An area designated specifically for the parking of seaplanes.
Feature Group SeaPlane

Feature Class Name	AnchorageArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-SEAP-ANCH-	Seaplane dock			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	Unclassified			
Equivalent Standards	AIXM	None		
	FGDC	None		
	SDSFIE	None		
Documentation and Submission Requirements	None			

Related Features			
Data Capture Rules: <i>Collect the anchorage area at its greatest horizontal extents.</i>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal	Vertical	
	N/A	N/A	
Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 5 ft	± 20 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Five hundredth of arc second	Nearest foot	
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature.	
description (VARCHAR2 (255))		Description of the feature.	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	

userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
mooringLocations (Integer)	Specify the number of mooring locations provided in the AnchorageArea.
length (Integer)	Specify the overall length available for the AnchorageArea
width (Integer)	Specify the overall length available for the floating dock
depth (Integer)	Specify the depth of the turning basin with respect to mean lowest low tide to the nearest 0.5 foot.
bottomConditions (String 240)	Specify the type of bottom conditions in the AnchorageArea.
restriction (String 240)	Any restrictions or cautions associated with the AnchorageArea
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.12. Group: SECURITY

5.12.1. Security Area

Definition: An area of the airport in which security measures required by 49 CFR 1542.201 must be carried out [Source: 49 CFR 1542]				
Feature Group	Security			
Feature Class Name	SecurityArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C- SECR-SECA	An area of the airport in which security measures required by 49 CFR 1542.201			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1 MM	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Secret			
Equivalent Standards	AIXM	<i>SecurityElement</i>		Extension
	FGDC	<i>SecurityArea</i>		Extension
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect outline of security area at its greatest horizontal extents. Extents can be defined by fences, paint lines, or specific limits defined by airport authorities.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredths of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	Description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.			

5.12.2. Security Identification Display Area

Definition: Portions of an airport, specified in the airport security program, in which security measures required by regulation must be, carried out. This area includes the security area and may include other areas of the airport. [Source: DHS]				
Feature Group	Security			
Feature Class Name	SecurityIdDisplayArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-AIRF-SECR-SIDA	Security Identification Display Area			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1 MM	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Secret			
Equivalent Standards	AIXM	<i>SecurityElement</i>		Extension
	FGDC	<i>SecurityIdentificationDisplayArea</i>		Extension
	SDSFIE	<i>none</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect outline of security area at its greatest horizontal extents. Extents can be defined by fences, paint lines, or specific limits defined by airport authorities.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	Description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.			

5.12.3. Security Perimeter Line

Definition: Any type of perimeter, such as barbed wire, high fences, motion detectors and armed guards at gates, that ensure no unauthorized visitors can gain entry.	
Feature Group	Security
Feature Class Name	SecurityPerimeterLine

Feature Type	Polygon		
CADD Standard Requirements			
Layer/Level	Description		
C-DETL-FENC-SECU	Security Fencing		
	Color	Linetype	Line Weight
AutoDesk Standards	4	None	1 MM
MicroStation Standards	7		7
Information Assurance Level	Confidential		
Equivalent Standards	AIXM	<i>SecurityElement</i>	Extension
	FGDC	<i>SecurityPerimeterLine</i>	Extension
	SDSFIE	<i>security_perimeter_line</i>	
Documentation and Submission Requirements	None		
Related Features			
Data Capture Rules: <i>Collect outline of security area at its greatest horizontal extents. Extents can be defined by fences, paint lines, or specific limits defined by airport authorities.</i>			
Monumentation	No monumentation required.		
Survey Point Location	Horizontal		Vertical
	N/A		N/A
Accuracy Requirements (in feet)	Horizontal		Vertical
	± 5 ft		Orthometric
			Ellipsoidal
± 5 ft		± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations
	Five hundredth of arc second		Nearest foot
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR2 (50))	Name of the feature.		
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters. [Source: SDSFIE Attribute Table]		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.		

5.12.4. Sterile Area

Definition: Portions of an airport defined in the airport security program that provide passengers access to boarding aircraft and to which the access is generally controlled by TSA, an aircraft operator, or a foreign air carrier. [Source: DHS]	
Feature Group	Security
Feature Class Name	SterileArea
Feature Type	Polygon

CADD Standard Requirements				
Layer/Level	Description			
C-AFLD-SECR-STER	Airfield sterile area			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1 MM	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Secret			
Equivalent Standards	AIXM	<i>SecurityElement</i>		Extension
	FGDC	<i>SterileArea</i>		Extension
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect outline of security area at its greatest horizontal extents. Extents can be defined by fences, paint lines, or specific limits defined by airport authorities.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 (255))		Description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.13. Group: SURFACE TRANSPORTATION

5.13.1. Bridge

Definition: A structure used by vehicles that allows passage over or under an obstacle such as a river, chasm, mountain, road or railroad.				
Feature Group	Surface Transportation			
Feature Class Name	Bridge			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-STRC-OTLN-	Bridges, piers, breakwaters, docks, floats, etc. - outlines			
L-SITE-BRDG-	Bridges			
M-MATL-CRAN-	Bridge cranes, jib cranes, and monorails			
V-SITE-STRC-	Structures (bridges, sheds, foundation pads, footings, etc.)			
V-STRC-OTLN-	Bridges, piers, breakwaters, docks, floats, etc. – outlines			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4 (all)	Continuous (all)	1 (all)	User Defined
MicroStation Standards	7 (all)		7 (all)	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>Bridge</i>	Extension	
	FGDC	<i>Bridge</i>	Extension	
	SDSFIE	<i>road_bridge_area</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Capture the outline of bridge at its greatest horizontal extents.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 (255))		Description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
surfaceMaterial (Enumeration: CodeSurfaceMaterial)		The material used as a surface for the bridge.		

bridgeType (Enumeration: CodeBridgeType)	
verticalStructureMaterial Enumeration: CodeVerticalStructureMaterial)	
directionality (Enumeration: CodeDirectionality)	Code indicating the traffic flow of the bridge being classified.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.13.2. Driveway Area

Definition: An access to a building or other vehicle parking lot or storage area.				
Feature Group	Surface Transportation			
Feature Class Name	DrivewayArea			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-ROAD-DRIV-	Driveway edge of pavement			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>DrivewayArea</i>		Extension
	FGDC	<i>DrivewayArea</i>		Extension
	SDSFIE	<i>driveway_area</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Capture the outline of driveway at its greatest horizontal extents.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	Description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			

surfaceMaterial (enumeration: CodeSurfaceMaterial)	The material used as a surface for the driveway.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.13.3. Driveway Centerline

Definition: The center of the driveway as measured from the edge of the paved surface. The segments of a driveway centerline will coincide with the road segments in order to provide network connectivity.				
Feature Group	Surface Transportation			
Feature Class Name	DrivewayCenterline			
Feature Type	Line			
CADD Standard Requirements				
Layer/Level	Description			
C-ROAD-DRIV-CNTR	Driveway centerline			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>DrivewayCenterline</i>	Extension	
	FGDC	<i>DrivewayCenterline</i>	Extension	
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect in the horizontal plane at the center of driveway, and to intersect with centerline of road/drive/ramp.</i>				
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	Description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.			

5.13.4. Parking Lot

Definition: An area of an airport used for parking of automobiles, buses, etc.				
Feature Group	Surface Transportation			
Feature Class Name	ParkingLot			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-PKNG-ISLD-	Parking islands			
C-PKNG-OTLN-	Parking lots			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	84 (all)	Dashed-Spaced (all)	1 mm (all)	User Defined
MicroStation Standards	256 (all)		7 (all)	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>ParkingLot</i>		Extension
	FGDC	<i>ParkingLot</i>		Extension
	SDSFIE	<i>vehicle_parking_area</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect outline of parking lot at its greatest horizontal extents.</i>				
Monumentation	None			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Any commonly used name for the parking area.		
description (VARCHAR2 (255))		A description of the parking lot.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
parkingLotUse (String 16)		The primary use of the parking area.		
totalNumberSpaces (Integer)		The total parking spaces available in the area including handicapped or reserved spaces.		
numberHandicapSpaces (Integer)		The total number of spaces marked as being handicapped parking.		
owner (Enumeration: CodeOwner)		The owner of the parking lot		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
surfaceType (Enumeration: codeSurfaceType)		Type of different materials used to construct the surface.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.13.5. Railroad Centerline

Definition: Represents the centerline of each pair of rails [Source: ANSI: Data Content Standards For Transportation Networks: Roads]				
Feature Group	Surface Transportation			
Feature Class Name	RailroadCenterline			
Feature Type	Line			
CADD Standard Requirements				
Layer/Level	Description			
C-RAIL-CNTR-	Centerlines			
C-RAIL-TRAK-	Railroads			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	91 (all)	Continuous (all)	1 (all)	User Defined
MicroStation Standards	106 (all)		7 (all)	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>RailroadCenterline</i>		Extension
	FGDC	<i>RailroadCenterline</i>		Extension
	SDSFIE	<i>railroad_centerline</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>In the horizontal plane, collect a line along the centerline of each pair of rails. In the vertical plane, collect the height at the top of highest rail.</i>				
Monumentation	None			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Any commonly used name for the railroad.		
description (VARCHAR2 (255))		Any narrative remarks concerning the railroad.		
Status (Enumeration codeStatus)		The current status as to whether the railroad segment is being used.		
numberOfTracks (Integer)		The number of tracks present		
owner (Enumeration: CodeOwner)		The owner of the rail track		
isBridge (Boolean)		Indicates given railroad segment is bridge (Y- a is bridge, N- is not a bridge).		
istunnel (Boolean)		Indicates given railroad segment is tunnel (Y- is a tunnel, N- is not a tunnel).		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		

directionality (Enumeration: CodeDirectionality)	Code indicating the traffic flow of the railroad segment being classified.
segmentType (Enumeration: CodeSegmentType)	Code indication the sequence or position of the segment being classified by the feature.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.13.6. Railroad Yard

Definition: Represents a railroad yard [Source: ANSI: Data Content Standards For Transportation Networks: Roads]				
Feature Group	Surface Transportation			
Feature Class Name	RailroadYard			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-RAIL-YARD-	Railroad Yard			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>RailroadYard</i>	Extension	
	FGDC	<i>RailroadYard</i>	Extension	
	SDSFIE	<i>railroad_yard_area</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect outline of the yard area its greatest horizontal extents. Represented by fences, road or change in ground surfaces.</i>				
Monumentation	None			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	A name that represent the railroad yard.			
description (VARCHAR2 (255))	Any brief description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
owner (Enumeration: CodeOwner)	The owner of the rail track			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			

Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.
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5.13.7. Road Centerline

Definition: The center of the roadway as measured from the edge of the paved surface. The segments of a road centerline will coincide with the road segments in order to have similar characteristics.				
Feature Group	Surface Transportation			
Feature Class Name	RoadCenterline			
Feature Type	Line			
CADD Standard Requirements				
Layer/Level	Description			
C-ROAD-CNTR-	Centerlines			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>RoadCenterline</i>		Extension
	FGDC	<i>RoadCenterline</i>		Extension
	SDSFIE	<i>road_centerline</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect the centerline of road by splitting the edge of pavement or painted centerline, which ever is better defined.</i>				
Monumentation	None			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
			Orthometric	Ellipsoidal
	± 5 ft		± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Any commonly used name for the road centerline.			
description (VARCHAR2 (255))	Description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
Color (Enumeration: CodeColor)	The color of the centerline marking.			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.			

5.13.8. Road Point

Definition: A point along the roadway system which has some special significance either for starting or ending a road segment or for representing a significant position along the roadway system such as the start or center of a bridge or the center of an intersection [Source: ANSI: Data Content Standards For Transportation Networks: Roads]				
Feature Group	Surface Transportation			
Feature Class Name	RoadPoint			
Feature Type	Point			
CADD Standard Requirements				
Layer/Level	Description			
C-ROAD-POIN-	Road Point			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1 mm	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>RoadPoint</i>		Extension
	FGDC	<i>RoadPoint</i>		Extension
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect point at desired location using the technique necessary to achieve accuracy</i>				
Monumentation	None			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)	Description			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	Description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.			

5.13.9. Road Segment

Definition: Represents a linear section of the physical road system designed for, or the result of, human or vehicular movement; must be continuous (no gaps) and cannot branch; no mandates are provided on how to segment the road system except that data providers adopt a consistent method [Source: ANSI: Data Content Standards For Transportation Networks: Roads]				
Feature Group	Surface Transportation			
Feature Class Name	RoadSegment			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-PROF-ROAD-	Roads			
C-ROAD-CURB-	Curbs			
C-ROAD-OTLN-	Roads			
V-PROF-ROAD-	Roads			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	1 (all)	Continuous (all)	1 mm (all)	User Defined
MicroStation Standards	3 (all)		7 (all)	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>RoadSegment</i>	Extension	
	FGDC	<i>RoadSegment</i>	Extension	
	SDSFIE	<i>road_site</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect all road segments as individual polygon objects. Where two or more roadway segments intersect, collect as separate polygons depicting beginning, intersection and end. Collect roadway at the outer edge of pavement or defined paint line (excluding shoulder).</i>				
Monumentation	None			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		A common name or street name used to refer to the stretch of road.		
description (VARCHAR2 (255))		A general description of the road.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
alternateName (String 30)		The alternate name or second name for the road.		
route1Name (String 30)		The route number or other identifier that is affiliated with the first route type		
route1Type (Enumeration: CodeRouteType)		The first route type for the road (Interstate, US, State, etc.)		

route2Name (String 30)	The route number or other identifier that is affiliated with the second route type
route2Type (Enumeration: CodeRouteType)	The second route type for the road (Interstate, US, State, etc.)
route3Name (String 30)	The number or other identifier that is affiliated with the third route type
route3Type (Enumeration: CodeRouteType)	The third route type for the road (Interstate, US, State, etc.)
numberOfLanes (Integer)	The total number of lanes of traffic, counting both directions, not including turning lanes. [Source: SDSFIE Feature Table]
length (Real)	The length of the road segment measured at the centerline. [Source: SDSFIE Feature Table]
width (Real)	The average width of the road segment. [Source: SDSFIE Feature Table]
isBridge (Boolean)	Indicates given road segment is bridge (Y- a is bridge, N- is not a bridge). [Source: SDSFIE Feature Table]
isTunnel (Boolean)	Indicates given road segment is tunnel (Y- is a tunnel, N is not a tunnel). [Source: SDSFIE Feature Table]
directionality (Enumeration: CodeDirectionality)	Code indicating the traffic flow on the road segment.
segmentType (Enumeration: CodeSegmentType)	Code indicating the type of segment being classified.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
surfaceType (Enumeration: codeSurfaceType)	Type of material used to construct the surface.
surfaceMaterial (Enumeration: CodeSurfaceMaterial)	Material used to construct the surface of the road.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.13.10.Sidewalk

Definition: A paved or concrete pad used as a pedestrian walkway. Usually is composed of one or more SideWalkSegments.				
Feature Group	Surface Transportation			
Feature Class Name	Sidewalk			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-SITE-WALK-	Walks, trails and bicycle paths			
L-SITE-WALK-	Walks and steps			
V-SITE-WALK-	Walks, trails, and bicycle paths			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	8 (all)	Continuous (all)	1 mm (all)	User Defined
MicroStation Standards	9 (all)		7 (all)	
Information Assurance Level	Restricted			

Equivalent Standards	AIXM	<i>Sidewalk</i>	Extension
	FGDC	<i>Sidewalk</i>	Extension
	SDSFIE	<i>pedestrian_sidewalk_area</i>	
Documentation and Submission Requirements	None		
Related Features			
Data Capture Rules: <i>Collect all sidewalks as individual polygon objects. Where two or more sidewalks intersect, collect as separate polygons depicting beginning, intersection and end. Collect sidewalk at the outer edge of pavement.</i>			
Monumentation	None		
Survey Point Location	Horizontal		Vertical
	N/A		N/A
Accuracy Requirements (in feet)	Horizontal		Vertical
	± 5 ft		Orthometric
			Ellipsoidal
Resolution	Geographic Coordinates		Distances and Elevations
	Five hundredth of arc second		Nearest Foot
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature.	
description (VARCHAR2 (255))		A brief description of any special characteristics of the sidewalk.	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
walkUse (String 26)		A short description of the primary use of the sidewalk.	
AmericanDisabilitiesAct (Boolean)		Boolean indicating whether or not the walkway is in compliance with the American Disabilities Act.	
length (Real)		The overall length of the sidewalk section.	
width (Real)		The mean width of the sidewalk section.	
surfaceMaterial (Enumeration: CodeSurfaceMaterial)		Primary material used in the sidewalk and/or trail.	
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
segmentType (Enumeration: CodeSegmentType)		Code indicating the type of segment being classified.	
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.	

5.13.11. Tunnel

Definition: The area of a transportation passage, open at both ends, used to provide access through or under a natural obstacle.	
Feature Group	Surface Transportation
Feature Class Name	Tunnel
Feature Type	Polygon

CADD Standard Requirements				
Layer/Level	Description			
L-SITE-TUNL-	Tunnels			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	7	Continuous	1 MM	User Defined
MicroStation Standards	0		7	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>Tunnel</i>		Extension
	FGDC	<i>Tunnel</i>		Extension
	SDSFIE	<i>tunnel_area</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect the tunnel extending between the entrance points with a width defined by edge of pavement at either entrance.</i>				
Monumentation	None			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 (255))		Description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
type (String 16)		The code that represents the type of tunnel		
verticalClearance (Real)		Indicates the actual vertical clearance to the top of the tunnel imposed by any restrictions.		
averageHeight (Real)		The average height of the tunnel.		
averageWidth (Real)		The average width of the tunnel.		
length (Real)		The length of the tunnel.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
directionality (Enumeration:CodeDirectionality)				
segmentType (Enumeration: CodeSegmentType)		Code indicating the type of segment being classified.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.14. Group: UTILITIES

5.14.1. Tank Site

Definition: An above or below grade receptacle or chamber for holding anything (e.g., fuels, water, waste, etc.) on a temporary basis prior to transfer, use, or disposal. Tanks are typically located on TankSites.				
Feature Group	Utilities			
Feature Class Name	TankSite			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
L-DETL-TKST-	Tank Site			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	4	Continuous	1 MM	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Confidential			
Equivalent Standards	AIXM	<i>VerticalStructure</i>		Core
	FGDC	<i>TankSite</i>		
	SDSFIE	<i>undefined_tank_site</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Outer limits of tank outline.</i>				
Monumentation	As required by local, State, or national standards for this type of data.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	+/- 3 ft		Orthometric	Ellipsoidal
			+/- 3 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredths of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters. [Source: SDSFIE Feature Table]		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
tankType (String 40)		A brief description of the type of tank.		
topElevation (Real)		The dimension indicating the elevation of exterior top surface of the tank's lid, hatch, rim, or roof in feet (English units) or meters (SI units) above some datum, if it is known. [Source: SDSFIE Feature Table]		
lightCode (Boolean)		A code indicating that the obstacle is lighted [Source: AIXM]		
verticalStructureMaterial (Enumeration: CodeVerticalStructureMaterial)		Classifies the predominant material of the vertical object		

lightingType (Enumeration: codeLightingConfigurationType)	A description of the lighting system. Lighting system classifications are Approach; Airport; Runway; Taxiway; and Obstruction
markingFeatureType (Enumeration: codeMarkingFeatureType)	The type of the marking(s)
color (Enumeration: codeColor)	The color of the marking(s)
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.14.2. Utility Line

Definition: Any utility feature typically represented as a line.			
Feature Group	Utilities		
Feature Class Name	UtilityLine		
Feature Type	Line		
CADD Standard Requirements			
Layer/Level	Description	Layer/Level	Description
C-FUEL-ABND-	Abandoned piping	M-HTCW-LTPL-	Main low temperature piping
C-FUEL-DEFL-	Defueling piping	M-HTCW-LTPS-	Low temperature service piping
C-FUEL-MAIN-	Main fuel piping	M-HTCW-STML-	Main steam piping
C-FUEL-SERV-	Service piping	M-HTCW-STMS-	Steam service piping
C-FUEL-TRCH-	Fuel line trench	M-HVAC-RETN-	Return ductwork
C-NGAS-ABND-	Abandoned piping	M-HVAC-SUPP-	Supply ductwork
C-NGAS-MAIN-	Main natural gas piping	M-HYDR-PIPE-	Hydraulic system piping
C-NGAS-SERV-	Service piping	M-INSL-PIPE-	Insulating oil piping
C-PROF-PIPE-	Piping	M-LUBE-PIPE-	Lubrication oil piping
C-SSWR-ABND-	Abandoned piping	M-PROC-PIPE-	Process piping
C-SSWR-MAIN-	Sanitary sewer piping	M-RCOV-PIPE-	Piping (includes fittings, valves)
C-SSWR-SERV-	Sanitary sewer service piping	M-REFG-PIPE-	Piping (includes fittings, valves)
C-STRM-ABND-	Abandoned piping	M-RWTR-PIPE-	Raw water piping
C-STRM-HDWL-	Headwalls and endwalls	M-STEM-PIPE-	Steam piping
C-STRM-MAIN-	Storm sewer piping	P-CMPA-PIPE-	Piping
C-STRM-ROOF-	Roof drain line	P-FUEL-FGAS-	Fuel gas piping
C-STRM-SERV-	Storm sewer service piping	P-FUEL-FOIL-	Fuel oil piping
C-STRM-SUBS-	Subsurface drain piping	P-LGAS-PIPE-	Piping
E-AIRF-DUCT-	Ductbanks	P-MDGS-PIPE-	Piping
E-CABL-COAX-	Coax cable	P-SANR-COND-	Condensate piping
E-CABL-FIBR-	Fiber optics cable	P-SANR-PIPE-	Piping

E-CABL-MULT-	Multi-conductor cable	P-SANR-VENT-	Vent piping
E-CABL-TRAY-	Cable trays and wireways	P-STRM-PIPE-	Storm drain piping
E-CIRC-CTRL-	Control and monitoring circuits	T-CABL-TRAY-	Cable trays and wireways
E-CIRC-MULT-	Multiple circuits	V-AIRF-DUCT-	Ductbanks
E-CIRC-SERS-	Series circuits	V-CIRC-CTRL-	Control and monitoring circuits
E-COMM-OVHD-	Overhead communications/teleph one lines	V-CIRC-MULT-	Multiple circuits
E-COMM-UNDR-	Underground communications/teleph one lines	V-CIRC-SERS-	Series circuits
E-DUCT-MULT-	Ductbank	V-COMM-OVHD-	Overhead communications/teleph one lines
E-GRND-CIRC-	Circuits	V-COMM-UNDR-	Underground communications/teleph one lines
E-LITE-CIRC-	Lighting circuits (including crosslines and homeruns)	V-DUCT-MULT-	Ductbank
E-POWR-CIRC-	Power circuits (including crosslines and homeruns)	V-ELEC-VALT-	Vaults
E-PRIM-OVHD-	Overhead electrical utility lines	V-FUEL-ABND-	Abandoned piping
E-PRIM-UNDR-	Underground electrical utility lines	V-FUEL-DEFL-	Defueling piping
E-SECD-OVHD-	Overhead electrical utility lines	V-FUEL-MAIN-	Main fuel piping
E-SECD-UNDR-	Underground electrical utility lines	V-FUEL-SERV-	Service piping
F-AFFF-PIPE-	Piping	V-FUEL-TRCH-	Fuel line trench
F-CO2S-PIPE-	CO2 piping or CO2 discharge nozzle piping	V-GTHP-PIPE-	Piping (includes fittings, valves)
F-HALN-PIPE-	Halon piping	V-HTCW-ABND-	Abandoned piping
F-IGAS-PIPE-	Inert gas piping	V-HTCW-CHLL-	Main chilled water piping
F-PROT-HOSE-	Fire hoses	V-HTCW-CHLS-	Chilled water service piping
F-SPRN-PIPE-	Sprinkler piping	V-HTCW-HTPL-	Main high temperature piping
F-WATR-PIPE-	Piping	V-HTCW-HTPS-	High temperature service piping
L-DETL-WIRE-	Wiring	V-HTCW-LTPL-	Main low temperature piping
L-IRRG-PIPE-	Piping	V-HTCW-LTPS-	Low temperature service piping

M-ACID-PIPE-	Acid, alkaline, and oil waste piping	V-HTCW-STML-	Main steam piping	
M-ACID-VENT-	Acid, alkaline, and oil waste vent piping	V-HTCW-STMS-	Steam service piping	
M-AFRZ-PIPE-	Anti-freeze piping	V-NGAS-ABND-	Abandoned piping	
M-AFRZ-WAST-	Waste anti-freeze piping	V-PRIM-OVHD-	Overhead electrical utility lines	
M-BRIN-PIPE-	Brine system piping	V-PRIM-UNDR-	Underground electrical utility lines	
M-CHEM-PIPE-	Piping (includes fittings, valves)	V-PROF-PIPE-	Piping	
M-CNDW-PIPE-	Condenser water piping	V-SECD-OVHD-	Overhead electrical utility lines	
M-COND-PIPE-	Condensate piping (includes fittings, valves)	V-SECD-UNDR-	Underground electrical utility lines	
M-CONT-WIRE-	Low voltage wiring	V-SSWR-ABND-	Abandoned piping	
M-CWTR-PIPE-	Piping (includes fittings, valves)	V-SSWR-MAIN-	Sanitary sewer piping	
M-DETL-PIPE-	Piping	V-SSWR-SERV-	Sanitary sewer service piping	
M-DETL-WIRE-	Electrical wiring	V-STRM-ABND-	Abandoned piping	
M-DUAL-PIPE-	Piping (includes fittings, valves)	V-STRM-MAIN-	Storm sewer piping	
M-GTHP-PIPE-	Piping (includes fittings, valves)	V-STRM-SUBS-	Subsurface drain piping	
M-HTCW-ABND-	Abandoned piping	V-UTIL-ELEC-	Power lines, lights, telephone poles, communication lines	
M-HTCW-CHLL-	Main chilled water piping	V-UTIL-STEM-	Steam lines	
M-HTCW-CHLS-	Chilled water service piping	V-UTIL-STRM-	Storm sewer lines, culverts, manholes, and headwalls	
M-HTCW-HTPL-	Main high temperature piping	V-UTIL-WATR-	Water lines, hydrants, tanks	
M-HTCW-HTPS-	High temperature service piping			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6 (all)	Continuous (all)	1 MM (all)	User Defined
MicroStation Standards	5 (all)		7 (all)	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>VerticalStructure</i>		Core
	FGDC	<i>Utility</i>		
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: Capture feature using technique as required to meet accuracies below. Collect in line segments.				

Monumentation	As required by local, State, or national standards for this type of data.		
Survey Point Location	Horizontal		Vertical
	N/A		N/A
Accuracy Requirements (in feet)	Horizontal		Vertical
			Orthometric
	A	± 1 ft	± 0.25 ft
	B	± 3 ft	± 10 ft
	C	± 5 ft	± 10 ft
D	± 10 ft	± 20 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations
A	Hundredth of arc second		Nearest Tenth of a foot
B	Five Hundredths of arc second		Nearest Foot
C	Five Hundredths of arc second		Nearest Foot
D	Tenth of arc second		Nearest Foot
Feature Attributes			
Attribute (Datatype)		Description	
name (VARCHAR2 (50))		Name of the feature.	
description (VARCHAR2 (255))		Description of the feature.	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
utilityType (Enumeration: CodeUtilityType)		The type of utility represented by the feature.	
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
directionality (Enumeration: CodeDirectionality)		Code indicating the flow of the utility being classified.	
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.	

5.14.3. Utility Point

Definition: Any utility feature typically represented as a point.			
Feature Group	Utilities		
Feature Class Name	UtilityPoint		
Feature Type	Point		
CADD Standard Requirements			
Layer/Level	Description	Layer/Level	Description
C-DETL-TANK-	Tanks	V-STRM-INLT-	Inlets (curb, surface, and catch basins)
C-FUEL-DEVC-	Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves	V-STRM-MHOL-	Manholes
C-FUEL-FTTG-	Caps, crosses, and tees	V-STRM-PUMP-	Pump stations
C-FUEL-HYDR-	Hydrant control pits	V-TRAN-PADM-	Pad mounted transformers
C-FUEL-JBOX-	Junction boxes, manholes, handholes, test boxes	V-TRAN-POLE-	Pole mounted transformers

C-FUEL-METR-	Meters	V-UTIL-LINE-	Utilities
C-FUEL-PUMP-	Booster pump stations	V-UTIL-NGAS-	Gas lines, features, and valves
C-FUEL-TANK-	Fuel tanks	V-UTIL-SSWR-	Sanitary lines and manholes
C-FUEL-VENT-	Vent pits	E-SPCL-SRFS-	Surface Sensor System
C-FUEL-VLVE-	Valve pits	T-COMM-ANTN-	Telecommunications antennae
C-NGAS-DEVC-	Hydrant fill points, lights, vents, markers, rectifiers, reducers, regulators, sources, tanks, drip pots, taps, and valves	C-SITE-SECU-	CMRA Security camera locations outside of buildings
C-NGAS-FTTG-	Caps, crosses, and tees	E-LITE-PANL-	Main distribution panels, switchboards, lighting panels
C-NGAS-METR-	Meters	E-LITE-SPCL-	Special fixtures
C-NGAS-PUMP-	Compressor stations	E-LITE-SWCH-	Lighting contactors, photoelectric controls, low-voltage lighting controls, etc.
C-NGAS-REDC-	Reducing stations	E-LITE-WALL-	Wall mounted fixtures
C-NGAS-VENT-	Vent pits	E-LTNG-COND-	Lightning protection conductors
C-NGAS-VLVE-	Valve pits/boxes	E-LTNG-TERM-	Lightning protection terminals
C-SSWR-DEVC-	Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves	E-POLE-UTIL-	Utility poles
C-SSWR-FILT-	Filtration beds	E-POWR-BUSW-	Busways and wireways
C-SSWR-FTTG-	Caps and cleanouts	E-POWR-CABL-	Cable trays
C-SSWR-JBOX-	Junction boxes and manholes	E-POWR-FEED-	Feeders
C-SSWR-PUMP-	Booster pump stations	E-POWR-GENR-	Generators and auxiliary equipment
C-SSWR-TANK-	Septic tanks	E-POWR-JBOX-	Junction boxes
C-STRM-CULV-	Culverts	E-POWR-PANL-	Panelboards, switchboards, MCC, unit substations
C-STRM-DEVC-	Downspouts, flumes, oil/water separators, and flap gates	E-POWR-SWCH-	Disconnect switches, motor starters, contactors, etc.
C-STRM-EROS-	Erosion control (riprap)	E-SERT-BURD-	Buried sensors
C-STRM-FMON-	Flow monitoring station	E-SERT-UNDR-	Buried sensors
C-STRM-FTTG-	Caps and cleanouts	E-SPCL-JBOX-	Junction boxes
C-STRM-INLT-	Inlets (curb, surface, and catch basins)	E-SPCL-PANL-	Panelboards, backing boards, patch panel racks
C-STRM-MHOL-	Manholes	E-SPCL-SYST-	Special systems (UMCS, EMCS, CATV, etc.)
C-STRM-PUMP-	Pump stations	E-TRAN-PADM-	Pad mounted transformers

C-STRM-STRC-	Storm drainage, headwalls, inlets, manholes, culverts, and drainage structures	E-TRAN-POLE-	Pole mounted transformers
E-AIRF-DEVC-	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	F-AFFF-EQPM-	Equipment
E-AIRF-JBOX-	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	F-ALRM-INDC-	Indicating appliances
E-CATH-ANOD-	Sacrificial anode system	F-ALRM-MANL-	Manual fire alarm pull stations
E-CATH-CURR-	Impress current system	F-ALRM-PHON-	Fire service or emergency telephone stations
E-CATH-TEST-	Test stations	F-CO2S-EQPM-	Equipment
E-COMM-EQPM-	Other communications distribution equipment	F-CTRL-PANL-	Control panels
E-COMM-JBOX-	Communication junction boxes, pull boxes, manholes, handholes, pedestals, splices	F-HALN-EQPM-	Halon equipment
E-ELEC-DEVC-	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	F-IGAS-EQPM-	Inert gas equipment
E-ELEC-JBOX-	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	F-LITE-EMER-	Emergency fixtures
E-ELEC-SUBS-	Other substation equipment	F-LITE-EXIT-	Exit fixtures
E-ELEC-SWCH-	Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches	F-LSFT-EGRE-	Egress requirements designator
E-ELEC-VALT-	Vaults	F-LSFT-OCCP-	Occupant load for egress capacity
E-GRND-EQUI-	Equipotential ground system	F-WATR-CONN-	Fire department connections
E-GRND-REFR-	Reference ground system	F-WATR-HYDR-	Hydrants
E-LITE-EMER-	Emergency fixtures (outline of light (if ceiling mounted) should go on E-LITE-CLNG)	F-WATR-PUMP-	Fire pumps
E-LITE-EXIT-	Exit fixtures (outline of light (if ceiling mounted) should go on	H-DECN-EQPM-	Decontamination equipment
E-LITE-CLNG-	Ceiling Fixtures	H-DISP-TANK-	Spill containment tanks
E-LITE-EXTR-	Exterior lights	L-DETL-VLVE-	Valves, fittings
E-LITE-JBOX-	Junction boxes	L-IRRG-SPKL-	Sprinklers
E-LITE-PANL-	Main distribution panels, switchboards, lighting panels	M-ACID-EQPM-	Acid, alkaline, and oil waste equipment
E-LITE-SPCL-	Special fixtures	M-BRIN-EQPM-	Brine system equipment

E-LITE-SWCH-	Lighting contactors, photoelectric controls, low-voltage lighting controls, etc.	M-CHEM-EQPM-	Equipment
E-LITE-WALL-	Wall mounted fixtures	M-CNDW-EQPM-	Condenser water equipment
E-LTNG-COND-	Lightning protection conductors	M-CONT-THER-	Thermostats, controls, instrumentation, and sensors
E-LTNG-TERM-	Lightning protection terminals	M-CWTR-EQPM-	Equipment
E-POLE-UTIL-	Utility poles	M-DETL-BOIL-	Boilers
E-POWR-BUSW-	Busways and wireways	M-DETL-COIL-	Coils and fin tubes
E-POWR-CABL-	Cable trays	M-DETL-DUCT-	Ducts
E-POWR-FEED-	Feeders	M-DETL-EQPT-	Equipment and fixtures
E-POWR-GENR-	Generators and auxiliary equipment	M-DETL-FANS-	Fans
E-POWR-JBOX-	Junction boxes	M-DETL-PUMP-	Pumps and compressors
E-POWR-PANL-	Panelboards, switchboards, MCC, unit substations	M-DETL-TANK-	Tanks
E-POWR-SWCH-	Disconnect switches, motor starters, contactors, etc.	M-DETL-TRAP-	Traps and drains
E-SERT-BURD-	Buried sensors	M-DETL-VENT-	Vents
E-SERT-UNDR-	Buried sensors	M-DETL-VLVE-	Valves and fittings
E-SPCL-JBOX-	Junction boxes	M-DUAL-EQPM-	Equipment
E-SPCL-PANL-	Panelboards, backing boards, patch panel racks	M-DUST-DUCT-	Dust and fume ductwork
E-SPCL-SYST-	Special systems (UMCS, EMCS, CATV, etc.)	M-DUST-EQPM-	Dust and fume collection equipment
E-TRAN-PADM-	Pad mounted transformers	M-GTHP-EQPM-	Equipment
E-TRAN-POLE-	Pole mounted transformers	M-HTCW-CHLP-	Chilled water plant
F-AFFF-EQPM-	Equipment	M-HTCW-DEVC-	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves
F-ALRM-INDC-	Indicating appliances	M-HTCW-FTTG-	Caps and flanges
F-ALRM-MANL-	Manual fire alarm pull stations	M-HTCW-HTPP-	High temperature water plant
F-ALRM-PHON-	Fire service or emergency telephone stations	M-HTCW-JBOX-	Junction boxes, manholes, handholes, test boxes
F-CO2S-EQPM-	Equipment	M-HTCW-PITS-	Valve pits/vaults, steam pits
F-CTRL-PANL-	Control panels	M-HTCW-PUMP-	Pump stations
F-HALN-EQPM-	Halon equipment	M-HTCW-RTRN-	Return for all HTCW lines
F-IGAS-EQPM-	Inert gas equipment	M-HVAC-DAMP-	Fire and smoke dampers
F-LITE-EMER-	Emergency fixtures	M-HVAC-EQPM-	Air system equipment
F-LITE-EXIT-	Exit fixtures	M-HVAC-ROOF-	Roof mounted HVAC equipment
F-LSFT-EGRE-	Egress requirements designator	M-HWTR-EQPM-	Equipment

F-LSFT-OCCP-	Occupant load for egress capacity	M-HWTR-PIPE-	Piping (includes fittings, valves)
F-WATR-CONN-	Fire department connections	M-HYDR-EQPM-	Hydraulic system equipment
F-WATR-HYDR-	Hydrants	M-INSL-EQPM-	Insulating oil equipment
F-WATR-PUMP-	Fire pumps	M-LUBE-EQPM-	Lubrication oil equipment
H-DECN-EQPM-	Decontamination equipment	M-MACH-BASE-	Machinery bases
H-DISP-TANK-	Spill containment tanks	M-MATL-LIFT-	Miscellaneous lifting equipment
L-DETL-VLVE-	Valves, fittings	M-PROC-EQPM-	Equipment
L-IRRG-SPKL-	Sprinklers	M-RCOV-EQPM-	Equipment
M-ACID-EQPM-	Acid, alkaline, and oil waste equipment	M-REFG-EQPM-	Equipment
M-BRIN-EQPM-	Brine system equipment	M-RWTR-EQPM-	Raw water equipment
M-CHEM-EQPM-	Equipment	M-STEM-EQPM-	Equipment
M-CNDW-EQPM-	Condenser water equipment	P-CMPA-EQPM-	Equipment
M-CONT-THER-	Thermostats, controls, instrumentation, and sensors	P-FUEL-EQPM-	Equipment
M-CWTR-EQPM-	Equipment	P-LGAS-EQPM-	Equipment
M-DETL-BOIL-	Boilers	P-MDGS-EQPM-	Equipment
M-DETL-COIL-	Coils and fin tubes	P-SANR-EQPM-	Equipment (e.g., sand/oil/water separators)
M-DETL-DUCT-	Ducts	P-SANR-FLDR-	Floor drains, sinks, and cleanouts
M-DETL-EQPT-	Equipment and fixtures	S-BRAC-VERT-	Vertical bracing
M-DETL-FANS-	Fans	S-GRAT-SUBS-	Subsurface grating
M-DETL-PUMP-	Pumps and compressors	S-PIPE-GATE-	Gates (flap gates, sluice gates, other)
M-DETL-TANK-	Tanks	T-CABL-COAX-	Coax cable
M-DETL-TRAP-	Traps and drains	T-CABL-FIBR-	Fiber optics cable
M-DETL-VENT-	Vents	T-CABL-MULT-	Multi-conductor cable
M-DETL-VLVE-	Valves and fittings	T-COMM-JBOX-	Junction boxes
M-DUAL-EQPM-	Equipment	T-EQPM-COPP-	Distribution equipment for copper
M-DUST-DUCT-	Dust and fume ductwork	T-EQPM-FIBR-	Distribution equipment for fiber optic
M-DUST-EQPM-	Dust and fume collection equipment	T-EQPM-OTHR-	Other telecommunications equipment
M-GTHP-EQPM-	Equipment	T-JACK-DATA-	Data/LAN jacks
M-HTCW-CHLP-	Chilled water plant	T-JACK-PHON-	Telephone jacks

M-HTCW-DEVC-	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves	V-AIRF-DEVC-	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers
M-HTCW-FTTG-	Caps and flanges	V-AIRF-JBOX-	Junction boxes, pull boxes, manholes, handholes, pedestals, splices
M-HTCW-HTPP-	High temperature water plant	V-CATH-ANOD-	Sacrificial anode system
M-HTCW-JBOX-	Junction boxes, manholes, handholes, test boxes	V-CATH-CURR-	Impress current system
M-HTCW-PITS-	Valve pits/vaults, steam pits	V-CATH-TEST-	Test stations
M-HTCW-PUMP-	Pump stations	V-COMM-EQPM-	Other communications distribution equipment
M-HTCW-RTRN-	Return for all HTCW lines	V-COMM-JBOX-	Communication junction boxes, pull boxes, manholes, handholes, pedestals, splices
M-HVAC-DAMP-	Fire and smoke dampers	V-ELEC-DEVC-	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers
M-HVAC-EQPM-	Air system equipment	V-ELEC-JBOX-	Junction boxes, pull boxes, manholes, handholes, pedestals, splices
M-HVAC-ROOF-	Roof mounted HVAC equipment	V-ELEC-SUBS-	Other substation equipment
M-HWTR-EQPM-	Equipment	V-ELEC-SWCH-	Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches
M-HWTR-PIPE-	Piping (includes fittings, valves)	V-FUEL-DEVC-	Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves
M-HYDR-EQPM-	Hydraulic system equipment	V-FUEL-FTTG-	Caps, crosses, and tees
M-INSL-EQPM-	Insulating oil equipment	V-FUEL-HYDR-	Hydrant control pits
M-LUBE-EQPM-	Lubrication oil equipment	V-FUEL-JBOX-	Junction boxes, manholes, handholes, test boxes
M-MACH-BASE-	Machinery bases	V-FUEL-METR-	Meters
M-MATL-LIFT-	Miscellaneous lifting equipment	V-FUEL-PUMP-	Booster pump stations
M-PROC-EQPM-	Equipment	V-FUEL-TANK-	Fuel tanks
M-RCOV-EQPM-	Equipment	V-FUEL-VENT-	Vent pits

M-REFG-EQPM-	Equipment	V-FUEL-VLVE-	Valve pits
M-RWTR-EQPM-	Raw water equipment	V-GTHP-EQPM-	Equipment
M-STEM-EQPM-	Equipment	V-HTCW-CHLP-	Chilled water plant
P-CMPA-EQPM-	Equipment	V-HTCW-DEVC-	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves
P-FUEL-EQPM-	Equipment	V-HTCW-FTTG-	Caps and flanges
P-LGAS-EQPM-	Equipment	V-HTCW-HTPP-	High temperature water plant
P-MDGS-EQPM-	Equipment	V-HTCW-JBOX-	Junction boxes, manholes, handholes, test boxes
P-SANR-EQPM-	Equipment (e.g., sand/oil/water separators)	V-HTCW-PITS-	Valve pits/vaults, steam pits
P-SANR-FLDR-	Floor drains, sinks, and cleanouts	V-HTCW-PUMP-	Pump stations
S-BRAC-VERT-	Vertical bracing	V-HTCW-RTRN-	Return for all HTCW lines
S-GRAT-SUBS-	Subsurface grating	V-LITE-FIXT-	Exterior Lights
S-PIPE-GATE-	Gates (flap gates, sluice gates, other)	V-NGAS-DEVC-	Hydrant fill points, lights, vents, markers, rectifiers, reducers, regulators, sources, tanks, drip pots, taps, and valves
T-CABL-COAX-	Coax cable	V-NGAS-FTTG-	Caps, crosses, and tees
T-CABL-FIBR-	Fiber optics cable	V-NGAS-METR-	Meters
T-CABL-MULT-	Multi-conductor cable	V-NGAS-PUMP-	Compressor stations
T-COMM-JBOX-	Junction boxes	V-NGAS-REDC-	Reducing stations
T-EQPM-COPP-	Distribution equipment for copper	V-NGAS-VENT-	Vent pits
T-EQPM-FIBR-	Distribution equipment for fiber optic	V-NGAS-VLVE-	Valve pits/boxes
T-EQPM-OTHR-	Other telecommunications equipment	V-POLE-UTIL-	Utility poles
T-JACK-DATA-	Data/LAN jacks	V-PROF-MHOL-	Manholes
T-JACK-PHON-	Telephone jacks	V-SPCL-SYST-	Special systems (UMCS, EMCS, CATV, etc.)
V-AIRF-DEVC-	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	V-SSWR-DEVC-	Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves
V-AIRF-JBOX-	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	V-SSWR-FILT-	Filtration beds
V-CATH-ANOD-	Sacrificial anode system	V-SSWR-FTTG-	Caps and cleanouts
V-CATH-CURR-	Impress current system	V-SSWR-JBOX-	Junction boxes and manholes

V-CATH-TEST-	Test stations	V-SSWR-PUMP-	Booster pump stations
V-COMM-EQPM-	Other communications distribution equipment	V-SSWR-TANK-	Septic tanks
V-COMM-JBOX-	Communication junction boxes, pull boxes, manholes, handholes, pedestals, splices	V-STRM-CHUT-	Chutes and concrete erosion control structures
V-ELEC-DEVC-	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	V-STRM-CULV-	Culverts
V-ELEC-JBOX-	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	V-STRM-DEVC-	Downspouts, flumes, oil/water separators, and flap gates
V-ELEC-SUBS-	Other substation equipment	V-STRM-EROS-	Erosion control (riprap)
V-ELEC-SWCH-	Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches	V-STRM-FMON-	Flow monitoring station
V-FUEL-DEVC-	Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves	V-STRM-FTTG-	Caps and cleanouts
V-FUEL-FTTG-	Caps, crosses, and tees	V-STRM-HDWL-	Headwalls and endwalls
V-FUEL-HYDR-	Hydrant control pits	V-STRM-INLT-	Inlets (curb, surface, and catch basins)
V-FUEL-JBOX-	Junction boxes, manholes, handholes, test boxes	V-STRM-MHOL-	Manholes
V-FUEL-METR-	Meters	V-STRM-PUMP-	Pump stations
V-FUEL-PUMP-	Booster pump stations	V-TRAN-PADM-	Pad mounted transformers
V-FUEL-TANK-	Fuel tanks	V-TRAN-POLE-	Pole mounted transformers
V-FUEL-VENT-	Vent pits	V-UTIL-LINE-	Utilities
V-FUEL-VLVE-	Valve pits	V-UTIL-NGAS-	Gas lines, features, and valves
V-GTHP-EQPM-	Equipment	V-UTIL-SSWR-	Sanitary lines and manholes
V-HTCW-CHLP-	Chilled water plant	E-SPCL-SRFS-	Surface Sensor System
V-HTCW-DEVC-	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves	T-COMM-ANTN-	Telecommunications antennae
V-HTCW-FTTG-	Caps and flanges	C-SITE-SECU-	CMRA Security camera locations outside of buildings
V-HTCW-HTPP-	High temperature water plant	F-IGAS-EQPM-	Inert gas equipment
V-HTCW-JBOX-	Junction boxes, manholes, handholes, test boxes	F-LITE-EMER-	Emergency fixtures
V-HTCW-PITS-	Valve pits/vaults, steam pits	F-LITE-EXIT-	Exit fixtures
V-HTCW-PUMP-	Pump stations	F-LSFT-EGRE-	Egress requirements designator

V-HTCW-RTRN-	Return for all HTCW lines	F-LSFT-OCCP-	Occupant load for egress capacity
V-LITE-FIXT-	Exterior Lights	F-WATR-CONN-	Fire department connections
V-NGAS-DEVC-	Hydrant fill points, lights, vents, markers, rectifiers, reducers, regulators, sources, tanks, drip pots, taps, and valves	F-WATR-HYDR-	Hydrants
V-NGAS-FTTG-	Caps, crosses, and tees	F-WATR-PUMP-	Fire pumps
V-NGAS-METR-	Meters	H-DECN-EQPM-	Decontamination equipment
V-NGAS-PUMP-	Compressor stations	H-DISP-TANK-	Spill containment tanks
V-NGAS-REDC-	Reducing stations	L-DETL-VLVE-	Valves, fittings
V-NGAS-VENT-	Vent pits	L-IRRG-SPKL-	Sprinklers
V-NGAS-VLVE-	Valve pits/boxes	M-ACID-EQPM-	Acid, alkaline, and oil waste equipment
V-POLE-UTIL-	Utility poles	M-BRIN-EQPM-	Brine system equipment
V-PROF-MHOL-	Manholes	M-CHEM-EQPM-	Equipment
V-SPCL-SYST-	Special systems (UMCS, EMCS, CATV, etc.)	M-CNDW-EQPM-	Condenser water equipment
V-SSWR-DEVC-	Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves	M-CONT-THER-	Thermostats, controls, instrumentation, and sensors
V-SSWR-FILT-	Filtration beds	M-CWTR-EQPM-	Equipment
V-SSWR-FTTG-	Caps and cleanouts	M-DETL-BOIL-	Boilers
V-SSWR-JBOX-	Junction boxes and manholes	M-DETL-COIL-	Coils and fin tubes
V-SSWR-PUMP-	Booster pump stations	M-DETL-DUCT-	Ducts
V-SSWR-TANK-	Septic tanks	M-DETL-EQPT-	Equipment and fixtures
V-STRM-CHUT-	Chutes and concrete erosion control structures	M-DETL-FANS-	Fans
V-STRM-CULV-	Culverts	M-DETL-PUMP-	Pumps and compressors
V-STRM-DEVC-	Downspouts, flumes, oil/water separators, and flap gates	M-DETL-TANK-	Tanks
V-STRM-EROS-	Erosion control (riprap)	M-DETL-TRAP-	Traps and drains
V-STRM-FMON-	Flow monitoring station	M-DETL-VENT-	Vents
V-STRM-FTTG-	Caps and cleanouts	M-DETL-VLVE-	Valves and fittings
V-STRM-HDWL-	Headwalls and endwalls	M-DUAL-EQPM-	Equipment
V-STRM-INLT-	Inlets (curb, surface, and catch basins)	M-DUST-DUCT-	Dust and fume ductwork
V-STRM-MHOL-	Manholes	M-DUST-EQPM-	Dust and fume collection equipment
V-STRM-PUMP-	Pump stations	M-GTHP-EQPM-	Equipment
V-TRAN-PADM-	Pad mounted transformers	M-HTCW-CHLP-	Chilled water plant

V-TRAN-POLE-	Pole mounted transformers	M-HTCW-DEVC-	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves
V-UTIL-LINE-	Utilities	M-HTCW-FTTG-	Caps and flanges
V-UTIL-NGAS-	Gas lines, features, and valves	M-HTCW-HTPP-	High temperature water plant
V-UTIL-SSWR-	Sanitary lines and manholes	M-HTCW-JBOX-	Junction boxes, manholes, handholes, test boxes
E-SPCL-SRFS-	Surface Sensor System	M-HTCW-PITS-	Valve pits/vaults, steam pits
T-COMM-ANTN-	Telecommunications antennae	M-HTCW-PUMP-	Pump stations
C-SITE-SECU-	MRA Security camera locations outside of buildings	M-HTCW-RTRN-	Return for all HTCW lines
C-STRM-FTTG-	Caps and cleanouts	M-HVAC-DAMP-	Fire and smoke dampers
C-STRM-INLT-	Inlets (curb, surface, and catch basins)	M-HVAC-EQPM-	Air system equipment
C-STRM-MHOL-	Manholes	M-HVAC-ROOF-	Roof mounted HVAC equipment
C-STRM-PUMP-	Pump stations	M-HWTR-EQPM-	Equipment
C-STRM-STRC-	Storm drainage, headwalls, inlets, manholes, culverts, and drainage structures	M-HWTR-PIPE-	Piping (includes fittings, valves)
E-AIRF-DEVC-	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	M-HYDR-EQPM-	Hydraulic system equipment
E-AIRF-JBOX-	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	M-INSL-EQPM-	Insulating oil equipment
E-CATH-ANOD-	Sacrificial anode system	M-LUBE-EQPM-	Lubrication oil equipment
E-CATH-CURR-	Impress current system	M-MACH-BASE-	Machinery bases
E-CATH-TEST-	Test stations	M-MATL-LIFT-	Miscellaneous lifting equipment
E-COMM-EQPM-	Other communications distribution equipment	M-PROC-EQPM-	Equipment
E-COMM-JBOX-	Communication junction boxes, pull boxes, manholes, handholes, pedestals, splices	M-RCOV-EQPM-	Equipment
E-ELEC-DEVC-	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	M-REFG-EQPM-	Equipment
E-ELEC-JBOX-	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	M-RWTR-EQPM-	Raw water equipment
E-ELEC-SUBS-	Other substation equipment	M-STEM-EQPM-	Equipment

E-ELEC-SWCH-	Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches	P-CMPA-EQPM-	Equipment
E-ELEC-VALT-	Vaults	P-FUEL-EQPM-	Equipment
E-GRND-EQUI-	Equipotential ground system	P-LGAS-EQPM-	Equipment
E-GRND-REFR-	Reference ground system	P-MDGS-EQPM-	Equipment
E-LITE-EMER-	Emergency fixtures (outline of light (if ceiling mounted) should go on E-LITE-CLNG)	P-SANR-EQPM-	Equipment (e.g., sand/oil/water separators)
E-LITE-EXIT-	Exit fixtures (outline of light (if ceiling mounted) should go on	P-SANR-FLDR-	Floor drains, sinks, and cleanouts
E-LITE-CLNG-		S-BRAC-VERT-	Vertical bracing
E-LITE-EXTR-	Exterior lights	S-GRAT-SUBS-	Subsurface grating
E-LITE-JBOX-	Junction boxes	S-PIPE-GATE-	Gates (flap gates, sluice gates, other)
E-LITE-PANL-	Main distribution panels, switchboards, lighting panels	T-CABL-COAX-	Coax cable
E-LITE-SPCL-	Special fixtures	T-CABL-FIBR-	Fiber optics cable
E-LITE-SWCH-	Lighting contactors, photoelectric controls, low-voltage lighting controls, etc.	T-CABL-MULT-	Multi-conductor cable
E-LITE-WALL-	Wall mounted fixtures	M-DUAL-EQPM-	Equipment
E-LTNG-COND-	Lightning protection conductors	M-DUST-DUCT-	Dust and fume ductwork
E-LTNG-TERM-	Lightning protection terminals	M-DUST-EQPM-	Dust and fume collection equipment
E-POLE-UTIL-	Utility poles	M-GTHP-EQPM-	Equipment
E-POWR-BUSW-	Busways and wireways	M-HTCW-CHLP-	Chilled water plant
E-POWR-CABL-	Cable trays	M-HTCW-DEVC-	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves
E-POWR-FEED-	Feeders	M-HTCW-FTTG-	Caps and flanges
E-POWR-GENR-	Generators and auxiliary equipment	M-HTCW-HTPP-	High temperature water plant
E-POWR-JBOX-	Junction boxes	M-HTCW-JBOX-	Junction boxes, manholes, handholes, test boxes
E-POWR-PANL-	Panelboards, switchboards, MCC, unit substations	M-HTCW-PITS-	Valve pits/vaults, steam pits
E-POWR-SWCH-	Disconnect switches, motor starters, contactors, etc.	M-HTCW-PUMP-	Pump stations
E-SERT-BURD-	Buried sensors	M-HTCW-RTRN-	Return for all HTCW lines
E-SERT-UNDR-	Buried sensors	M-HVAC-DAMP-	Fire and smoke dampers
E-SPCL-JBOX-	Junction boxes	M-HVAC-EQPM-	Air system equipment
E-SPCL-PANL-	Panelboards, backing boards, patch panel racks	M-HVAC-ROOF-	Roof mounted HVAC equipment

E-SPCL-SYST-	Special systems (UMCS, EMCS, CATV, etc.)	M-HWTR-EQPM-	Equipment
E-TRAN-PADM-	Pad mounted transformers	M-HWTR-PIPE-	Piping (includes fittings, valves)
E-TRAN-POLE-	Pole mounted transformers	M-HYDR-EQPM-	Hydraulic system equipment
F-AFFF-EQPM-	Equipment	M-INSL-EQPM-	Insulating oil equipment
F-ALRM-INDC-	Indicating appliances	M-LUBE-EQPM-	Lubrication oil equipment
F-ALRM-MANL-	Manual fire alarm pull stations	M-MACH-BASE-	Machinery bases
F-ALRM-PHON-	Fire service or emergency telephone stations	M-MATL-LIFT-	Miscellaneous lifting equipment
F-CO2S-EQPM-	Equipment	M-PROC-EQPM-	Equipment
F-CTRL-PANL-	Control panels	M-RCOV-EQPM-	Equipment
F-HALN-EQPM-	Halon equipment	M-REFG-EQPM-	Equipment
F-IGAS-EQPM-	Inert gas equipment	M-RWTR-EQPM-	Raw water equipment
F-LITE-EMER-	Emergency fixtures	M-STEM-EQPM-	Equipment
F-LITE-EXIT-	Exit fixtures	P-CMPA-EQPM-	Equipment
F-LSFT-EGRE-	Egress requirements designator	P-FUEL-EQPM-	Equipment
F-LSFT-OCCP-	Occupant load for egress capacity	P-LGAS-EQPM-	Equipment
F-WATR-CONN-	Fire department connections	P-MDGS-EQPM-	Equipment
F-WATR-HYDR-	Hydrants	P-SANR-EQPM-	Equipment (e.g., sand/oil/water separators)
F-WATR-PUMP-	Fire pumps	P-SANR-FLDR-	Floor drains, sinks, and cleanouts
H-DECN-EQPM-	Decontamination equipment	S-BRAC-VERT-	Vertical bracing
H-DISP-TANK-	Spill containment tanks	S-GRAT-SUBS-	Subsurface grating
L-DETL-VLVE-	Valves, fittings	S-PIPE-GATE-	Gates (flap gates, sluice gates, other)
L-IRRG-SPKL-	Sprinklers	T-CABL-COAX-	Coax cable
M-ACID-EQPM-	Acid, alkaline, and oil waste equipment	T-CABL-FIBR-	Fiber optics cable
M-BRIN-EQPM-	Brine system equipment	T-CABL-MULT-	Multi-conductor cable
M-CHEM-EQPM-	Equipment	P-CMPA-EQPM-	Equipment
M-CNDW-EQPM-	Condenser water equipment	P-FUEL-EQPM-	Equipment
M-CONT-THER-	Thermostats, controls, instrumentation, and sensors	P-LGAS-EQPM-	Equipment
M-CWTR-EQPM-	Equipment	P-MDGS-EQPM-	Equipment
M-DETL-BOIL-	Boilers	P-SANR-EQPM-	Equipment (e.g., sand/oil/water separators)
M-DETL-COIL-	Coils and fin tubes	P-SANR-FLDR-	Floor drains, sinks, and cleanouts
M-DETL-DUCT-	Ducts	S-BRAC-VERT-	Vertical bracing

M-DETL-EQPT-	Equipment and fixtures	S-GRAT-SUBS-	Subsurface grating
M-DETL-FANS-	Fans	S-PIPE-GATE-	Gates (flap gates, sluice gates, other)
M-DETL-PUMP-	Pumps and compressors	T-CABL-COAX-	Coax cable
M-DETL-TANK-	Tanks	T-CABL-FIBR-	Fiber optics cable
M-DETL-TRAP-	Traps and drains	T-CABL-MULT-	Multi-conductor cable
M-DETL-VENT-	Vents	T-COMM-JBOX-	Junction boxes
M-DETL-VLVE-	Valves and fittings	T-EQPM-COPP-	Distribution equipment for copper
M-DUAL-EQPM-	Equipment	T-EQPM-FIBR-	Distribution equipment for fiber optic
M-DUST-DUCT-	Dust and fume ductwork	T-EQPM-OTHR-	Other telecommunications equipment
M-DUST-EQPM-	Dust and fume collection equipment	T-JACK-DATA-	Data/LAN jacks
M-GTHP-EQPM-	Equipment	T-JACK-PHON-	Telephone jacks
M-HTCW-CHLP-	Chilled water plant	V-AIRF-DEVC-	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers
M-HTCW-DEVC-	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves	V-AIRF-JBOX-	Junction boxes, pull boxes, manholes, handholes, pedestals, splices
M-HTCW-FTTG-	Caps and flanges	V-CATH-ANOD-	Sacrificial anode system
M-HTCW-HTPP-	High temperature water plant	V-CATH-CURR-	Impress current system
M-HTCW-JBOX-	Junction boxes, manholes, handholes, test boxes	V-CATH-TEST-	Test stations
M-HTCW-PITS-	Valve pits/vaults, steam pits	V-COMM-EQPM-	Other communications distribution equipment
M-HTCW-PUMP-	Pump stations	V-COMM-JBOX-	Communication junction boxes, pull boxes, manholes, handholes, pedestals, splices
M-HTCW-RTRN-	Return for all HTCW lines	V-ELEC-SUBS-	Other substation equipment markers, oil/water separators, reducers, regulators, and valves
M-HVAC-DAMP-	Fire and smoke dampers	V-FUEL-FTTG-	Caps, crosses, and tees
M-HVAC-EQPM-	Air system equipment	V-FUEL-HYDR-	Hydrant control pits
M-HVAC-ROOF-	Roof mounted HVAC equipment	V-FUEL-JBOX-	Junction boxes, manholes, handholes, test boxes
M-HWTR-EQPM-	Equipment	V-FUEL-METR-	Meters

M-HWTR-PIPE-	Piping (includes fittings, valves)	V-FUEL-PUMP-	Booster pump stations
M-HYDR-EQPM-	Hydraulic system equipment	V-ELEC-SWCH-	Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches
M-INSL-EQPM-	Insulating oil equipment	V-FUEL-DEVC-	Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves
M-LUBE-EQPM-	Lubrication oil equipment	V-FUEL-FTTG-	Caps, crosses, and tees
M-MACH-BASE-	Machinery bases	V-FUEL-HYDR-	Hydrant control pits
M-MATL-LIFT-	Miscellaneous lifting equipment	V-FUEL-JBOX-	Junction boxes, manholes, handholes, test boxes
M-PROC-EQPM-	Equipment	V-FUEL-METR-	Meters
M-RCOV-EQPM-	Equipment	V-FUEL-PUMP-	Booster pump stations
M-REFG-EQPM-	Equipment	V-FUEL-TANK-	Fuel tanks
M-RWTR-EQPM-	Raw water equipment	V-FUEL-VENT-	Vent pits
M-STEM-EQPM-	Equipment	V-FUEL-VLVE-	Valve pits
P-CMPA-EQPM-	Equipment	V-GTHP-EQPM-	Equipment
P-FUEL-EQPM-	Equipment	V-HTCW-CHLP-	Chilled water plant
P-LGAS-EQPM-	Equipment	V-HTCW-DEVC-	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves
P-MDGS-EQPM-	Equipment	V-HTCW-FTTG-	Caps and flanges
P-SANR-EQPM-	Equipment (e.g., sand/oil/water separators)	V-HTCW-HTPP-	High temperature water plant
P-SANR-FLDR-	Floor drains, sinks, and cleanouts	V-HTCW-JBOX-	Junction boxes, manholes, handholes, test boxes
S-BRAC-VERT-	Vertical bracing	V-HTCW-PITS-	Valve pits/vaults, steam pits
S-GRAT-SUBS-	Subsurface grating	V-HTCW-PUMP-	Pump stations
S-PIPE-GATE-	Gates (flap gates, sluice gates, other)	V-HTCW-RTRN-	Return for all HTCW lines
T-CABL-COAX-	Coax cable	V-LITE-FIXT-	Exterior Lights
T-CABL-FIBR-	Fiber optics cable	V-NGAS-DEVC-	Hydrant fill points, lights, vents, markers, rectifiers, reducers, regulators, sources, tanks, drip pots, taps, and valves
T-CABL-MULT-	Multi-conductor cable	V-NGAS-FTTG-	Caps, crosses, and tees

T-COMM-JBOX-	Junction boxes	V-NGAS-METR-	Meters
T-EQPM-COPP-	Distribution equipment for copper	V-NGAS-PUMP-	Compressor stations
T-EQPM-FIBR-	Distribution equipment for fiber optic	V-NGAS-REDC-	Reducing stations
T-EQPM-OTHR-	Other telecommunications equipment	V-NGAS-VENT-	Vent pits
T-JACK-DATA-	Data/LAN jacks	V-NGAS-VLVE-	Valve pits/boxes
T-JACK-PHON-	Telephone jacks	V-POLE-UTIL-	Utility poles
V-AIRF-DEVC-	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	V-PROF-MHOL-	Manholes
V-AIRF-JBOX-	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	V-SPCL-SYST-	Special systems (UMCS, EMCS, CATV, etc.)
V-CATH-ANOD-	Sacrificial anode system	V-SSWR-DEVC-	Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves
V-CATH-CURR-	Impress current system	V-SSWR-FILT-	Filtration beds
V-CATH-TEST-	Test stations	V-SSWR-FTTG-	Caps and cleanouts
V-COMM-EQPM-	Other communications distribution equipment	V-SSWR-JBOX-	Junction boxes and manholes
V-COMM-JBOX-	Communication junction boxes, pull boxes, manholes, handholes, pedestals, splices	V-SSWR-PUMP-	Booster pump stations
V-ELEC-DEVC-	Capacitors, voltage regulators, motors, buses, generators, meters, grounds, and markers	V-SSWR-TANK-	Septic tanks
V-ELEC-JBOX-	Junction boxes, pull boxes, manholes, handholes, pedestals, splices	V-STRM-CHUT-	Chutes and concrete erosion control structures
V-ELEC-SUBS-	Other substation equipment	V-STRM-CULV-	Culverts
V-ELEC-SWCH-	Fuse cutouts, pole mounted switches, circuit breakers, gang operated disconnects, reclosers, cubicle switches	V-STRM-DEVC-	Downspouts, flumes, oil/water separators, and flap gates
V-FUEL-DEVC-	Air eliminators, filter strainers, hydrant fill points, line vents, markers, oil/water separators, reducers, regulators, and valves	V-STRM-EROS-	Erosion control (riprap)
V-FUEL-FTTG-	Caps, crosses, and tees	V-STRM-FMON-	Flow monitoring station
V-FUEL-HYDR-	Hydrant control pits	V-STRM-FTTG-	Caps and cleanouts
V-FUEL-JBOX-	Junction boxes, manholes, handholes, test boxes	V-STRM-HDWL-	Headwalls and endwalls

V-FUEL-METR-	Meters	V-STRM-INLT-	Inlets (curb, surface, and catch basins)
V-FUEL-PUMP-	Booster pump stations	V-STRM-MHOL-	Manholes
V-FUEL-TANK-	Fuel tanks	V-STRM-PUMP-	Pump stations
V-FUEL-VENT-	Vent pits	V-TRAN-PADM-	Pad mounted transformers
V-FUEL-VLVE-	Valve pits	V-TRAN-POLE-	Pole mounted transformers
V-GTHP-EQPM-	Equipment	V-UTIL-LINE-	Utilities
V-HTCW-CHLP-	Chilled water plant	V-UTIL-NGAS-	Gas lines, features, and valves
V-HTCW-DEVC-	Rigid anchors, anchor guides, rectifiers, reducers, markers, meters, pumps, regulators, tanks, and valves	V-UTIL-SSWR-	Sanitary lines and manholes
V-HTCW-FTTG-	Caps and flanges	E-SPCL-SRFS-	Surface Sensor System
V-HTCW-HTPP-	High temperature water plant	T-COMM-ANTN-	Telecommunications antennae
V-HTCW-JBOX-	Junction boxes, manholes, handholes, test boxes	C-SITE-SECU-	CMRA Security camera locations outside of buildings
V-HTCW-PITS-	Valve pits/vaults, steam pits	V-NGAS-VLVE-	Valve pits/boxes
V-HTCW-PUMP-	Pump stations	V-POLE-UTIL-	Utility poles
V-HTCW-RTRN-	Return for all HTCW lines	V-PROF-MHOL-	Manholes
V-LITE-FIXT-	Exterior Lights	V-SPCL-SYST-	Special systems (UMCS, EMCS, CATV, etc.)
V-NGAS-DEVC-	Hydrant fill points, lights, vents, markers, rectifiers, reducers, regulators, sources, tanks, drip pots, taps, and valves	V-SSWR-DEVC-	Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves
V-NGAS-FTTG-	Caps, crosses, and tees	V-SSWR-FILT-	Filtration beds
V-NGAS-METR-	Meters	V-SSWR-FTTG-	Caps and cleanouts
V-NGAS-PUMP-	Compressor stations	V-SSWR-JBOX-	Junction boxes and manholes
V-NGAS-REDC-	Reducing stations	V-SSWR-PUMP-	Booster pump stations
V-NGAS-VENT-	Vent pits	V-SSWR-TANK-	Septic tanks
V-NGAS-VLVE-	Valve pits/boxes	V-STRM-CHUT-	Chutes and concrete erosion control structures
V-POLE-UTIL-	Utility poles	V-STRM-CULV-	Culverts
V-PROF-MHOL-	Manholes	V-STRM-DEVC-	Downspouts, flumes, oil/water separators, and flap gates
V-SPCL-SYST-	Special systems (UMCS, EMCS, CATV, etc.)	V-STRM-EROS-	Erosion control (riprap)
V-SSWR-DEVC-	Grease traps, grit chambers, flumes, neutralizers, oil/water separators, ejectors, and valves	V-STRM-FMON-	Flow monitoring station
V-SSWR-FILT-	Filtration beds	V-STRM-FTTG-	Caps and cleanouts

V-SSWR-FTTG-	Caps and cleanouts	V-STRM-HDWL-	Headwalls and endwalls	
V-SSWR-JBOX-	Junction boxes and manholes	V-STRM-INLT-	Inlets (curb, surface, and catch basins)	
V-SSWR-PUMP-	Booster pump stations	V-STRM-MHOL-	Manholes	
V-SSWR-TANK-	Septic tanks	V-STRM-PUMP-	Pump stations	
V-STRM-CHUT-	Chutes and concrete erosion control structures	V-TRAN-PADM-	Pad mounted transformers	
V-STRM-CULV-	Culverts	V-TRAN-POLE-	Pole mounted transformers	
V-STRM-DEVC-	Downspouts, flumes, oil/water separators, and flap gates	V-UTIL-LINE-	Utilities	
V-STRM-EROS-	Erosion control (riprap)	V-UTIL-NGAS-	Gas lines, features, and valves	
V-STRM-FMON-	Flow monitoring station	V-UTIL-SSWR-	Sanitary lines and manholes	
V-STRM-FTTG-	Caps and cleanouts	E-SPCL-SRFS-	Surface Sensor System	
V-STRM-HDWL-	Headwalls and endwalls	T-COMM-ANTN-	Telecommunications antennae	
		C-SITE-SECU-	CMRA Security camera locations outside of buildings	
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	6 (all)	Continuous (all)	1 MM (all)	User Defined
MicroStation Standards	5 (all)		7 (all)	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>Utility</i>		Core
	FGDC	<i>VerticalStructure</i>		
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect the center of the object at the highest point.</i>				
Monumentation	N/A			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
			Orthometric	Ellipsoidal
	A	± 1ft	± 0.25ft	
	B	± 3 ft	± 10 ft	
	C	± 5 ft	± 10 ft	
D	± 10 ft	± 20 ft		
Resolution	Geographic Coordinates		Distances and Elevations	
A	Hundredth of arc second		Nearest Tenth of a foot	
B	Five Hundredths of arc second		Nearest Foot	
C	Five Hundredths of arc second		Nearest Foot	
D	Tenth of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		

description (VARCHAR2 (255))	Description of the feature.
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
utilityType (Enumeration: CodeUtilityType)	The type of utility the feature represents.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

5.14.4. Utility Polygon

Definition: Any utility feature typically represented as a polygon, or hydro vaults.				
Feature Group	Utilities			
Feature Class Name	UtilityPolygon			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	Description			
C-SSWR-LAGN-	Lagoons			
C-SSWR-LEAC-	Leach field			
C-SSWR-NITF-	Nitrification drain fields			
C-SSWR-PLNT-	Treatment plants			
C-STRM-AFFF-	AFFF lagoon/detention pond			
C-STRM-CHUT-	Chutes and concrete erosion control structures			
C-STRM-LAGN-	Lagoons, ponds, watersheds, and basins			
E-AIRF-VALT-	Airfield lighting vaults			
V-STRM-LAGN-	Lagoons, ponds, watersheds, and basins			
E-COMM-VALT-	Communications vault			
V-COMM-VALT-	Communications vault			
V-SSWR-LAGN-	Lagoons			
V-SSWR-LEAC-	Leach field			
V-SSWR-NITF-	Nitrification drain fields			
V-SSWR-PLNT-	Treatment plants			
V-STRM-AFFF-	AFFF lagoon/detention pond			
	Color	Line type	Line Weight	Symbol
AutoDesk Standards	6 (all)	Continuous (all)	1 MM (all)	User Defined
MicroStation Standards	5 (all)		7 (all)	
Information Assurance Level	Restricted			
Equivalent Standards	AIXM	<i>Utility</i>		Core
	FGDC	<i>VerticalStructure</i>		
	SDSFIE	<i>None</i>		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: <i>Collect the outline of utility feature to its greatest horizontal extents.</i>				
Monumentation	N/A			

Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
			Orthometric	Ellipsoidal
	A	± 1 ft	± 0.25ft	N/A
	B	± 3 ft	± 10 ft	
	C	± 5 ft	± 10 ft	
D	± 10 ft	± 20 ft		
Resolution	Geographic Coordinates		Distances and Elevations	
A	Hundredth of arc second		Nearest Tenth of a foot	
B	Five Hundredths of arc second		Nearest Foot	
C	Five Hundredths of arc second		Nearest Foot	
D	Tenth of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 (255))		Description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
utilityType (Enumeration: CodeUtilityType)		The type of utility the feature represents.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject Item's data.		
Alternative (Number(2))		Discriminator used to tie features of a plan or proposal together into a version.		

5.15. ATTRIBUTE ENUMERATIONS

The following tables contain the expected values in fields that are of type enumeration.

5.15.1. CodeAcquisitionType

Value	Description
FEE SIMPLE	Purchased real property; absolute ownership
EASEMENT	Rights given to use land in a specific manner
LEASED	Restricted use of land for a specific period of time

5.15.2. CodeAirportFacilityType

Value	Description
AD	Airport only
AH	Airport with helicopter landing area
H	Helicopter (the stall speed method of calculating aircraft category does not apply)
HP	Heliport only
LS	Landing Site

5.15.3. CodeApproachCategory

Value	Description
A	Speed less than 91 knots
B	Speed 91 knots or more but less than 121 knots
C	Speed 121 knots or more but less than 141 knots
D	Speed 141 knots or more but less than 166 knots
E	Speed 166 knots or more

5.15.4. CodeApproachGuidance

Value	Description
NON_VERTICAL	Runway is used for or planned use is for Non-Vertically Guided operations
PRECISION_CAT_I	Runway is used for or planned use is for Precision Category I operations
PRECISION_CAT_II	Runway is used for or planned use is for Precision Category II operations
PRECISION_CAT_IIIA	Runway is used for or planned use is for Precision Category IIIa operations.
PRECISION_CAT_IIIB	Runway is used for or planned use is for Precision Category IIIb operations
PRECISION_CAT_IIIC	Runway is used for or planned use is for Precision Category IIIc operations
VERTICAL	Runway is used for or planned use is for Vertically Guided (other than precision) operations
VISUAL	Runway is used for or planned use is for visual operations only

5.15.5. CodeApronType

Value	Description
CARGO	Cargo loading area used for the loading/unloading of cargo
DE ICING	Area used for deicing of aircraft
FUEL	Area used for aircraft fueling

Value	Description
HARDSTAND	Area used for parking a single aircraft. More temporary than parking
LOADING	Passenger loading area used for the loading/unloading of passengers
MAINT	Area used for maintenance of aircraft
MILITARY	Apron used by military
NORMAL	Apron
OTHER	Other
PARKING	Area used to park aircraft
RAMP	Access pavement between maintenance hangars opening to the apron and the apron edge
STAIRS	Stairs
TAXILANE	Area where plane is still under terminal control (airline dispatched) as opposed to tower control.
TEMPORARY	Temporary
TURNAROUND	Area used for aircraft to turn around

5.15.6. CodeBridgeType

Value	Description
ROAD	Road or highway bridge
RR	Railroad or Monorail Bridge
RWY	Runway Bridge
TWY	Taxiway Bridge

5.15.7. CodeBuoyType

Value	Description
Bn	Beacon
C	Can Buoy
F	Fixed
J	Junction (S or T Dayboard)
K	Rectangular (Range Dayboard)
Lb	Lighted buoy
M	Octagonal Dayboard
N	Nun Buoy
O	Other marking
S	Square Dayboard
T	Triangle Dayboard

5.15.8. CodeClassAirspace

Name	Definition
A	Class of Airspace per ICAO Annex 11, Appendix 4
B	Class of Airspace per ICAO Annex 11, Appendix 4
C	Class of Airspace per ICAO Annex 11, Appendix 4
D	Class of Airspace per ICAO Annex 11, Appendix 4
E	Class of Airspace per ICAO Annex 11, Appendix 4
F	Class of Airspace per ICAO Annex 11, Appendix 4
G	Class of Airspace per ICAO Annex 11, Appendix 4
other	Other

5.15.9. CodeColor

Value	Description
AMBER	Amber [U.S. CADD]
BLACK	Black [U.S. CADD]
BLUE	Blue [U.S. CADD]
BROWN	Brown [U.S. CADD]
GREEN	Green [U.S. CADD]
GREEN-GREEN	Bidirectional (Source AC 150/5345-46C)
GREEN-RED	Bidirectional (Source AC 150/5345-46C)
GREEN-YELLOW	Bidirectional (Source AC 150/5345-46C)
GREY	Grey [U.S. CADD]
LIGHTGREY	LightGrey [U.S. CADD]
MAGENTA	Magenta [U.S. CADD]
ORANGE	Orange [U.S. CADD]
OTHER	Other [U.S. CADD]
PINK	Pink [U.S. CADD]
PURPLE	Purple [AIXM]
RED	Red [U.S. CADD]
RED-GREEN	Bidirectional (Source AC 150/5345-46C)
RED-RED	Bidirectional (Source AC 150/5345-46C)
TBD	To be determined
VIOLET	Violet [U.S. CADD]
WHITE	White [U.S. CADD]
WHITE-RED	Bidirectional (Source AC 150/5345-46C)
WHITE-WHITE	Bidirectional (Source AC 150/5345-46C)
WHITE-YELLOW	Bidirectional (Source AC 150/5345-46C)
YELLOW	Yellow [U.S. CADD]
YELLOW-GREEN	Bidirectional (Source AC 150/5345-46C)
YELLOW-RED	Bidirectional (Source AC 150/5345-46C)
YELLOW-YELLOW	Bidirectional (Source AC 150/5345-46C)

5.15.10. CodeCompassLocation

Value	Description
E	East (076 to 105° magnetic)
ESE	East Southeast (106 to 135° magnetic)
N	North (346 to 015° magnetic)
NE	Northeast (046 to 075° magnetic)
NNE	North Northeast (016 to 045° magnetic)
NW	Northwest (316 to 345° magnetic)
S	South (166 to 195° magnetic)
SE	Southeast (136 to 165° magnetic)
SSW	South Southwest (196 to 225° magnetic)
SW	Southwest (226 to 255° magnetic)
W	West (256 to 285° magnetic)
WNW	West NorthWest (286 to 315° magnetic)

5.15.11.CodeCoordinatedUseType

Value	Description
A	Aeronautical
M	Multiple
R	Recreational boating/fishing
S	Commercial Shipping/Fishing

5.15.12.CodeCoordinateZone

Value	Description
AK-1	NAD27 Alaska State Planes- Zone 1- US Foot (EPSG #26731)
AK-10	NAD27 Alaska State Planes- Zone 10- US Foot (EPSG #26740)
AK-2	NAD27 Alaska State Planes- Zone 2- US Foot (EPSG #26732)
AK-3	NAD27 Alaska State Planes- Zone 3- US Foot (EPSG #26733)
AK-4	NAD27 Alaska State Planes- Zone 4- US Foot (EPSG #26734)
AK-5	NAD27 Alaska State Planes- Zone 5- US Foot (EPSG #26735)
AK-6	NAD27 Alaska State Planes- Zone 6- US Foot (EPSG #26736)
AK-7	NAD27 Alaska State Planes- Zone 7- US Foot (EPSG #26737)
AK-8	NAD27 Alaska State Planes- Zone 8- US Foot (EPSG #26738)
AK83-1	NAD83 Alaska State Planes- Zone 1- Meter (EPSG #26931)
AK83-10	NAD83 Alaska State Planes- Zone 10- Meter (EPSG #26940)
AK83-10F	NAD83 Alaska State Planes- Zone 10- US Foot
AK83-1F	NAD83 Alaska State Planes- Zone 1- US Foot
AK83-2	NAD83 Alaska State Planes- Zone 2- Meter (EPSG #26932)
AK83-2F	NAD83 Alaska State Planes- Zone 2- US Foot
AK83-3	NAD83 Alaska State Planes- Zone 3- Meter (EPSG #26933)
AK83-3F	NAD83 Alaska State Planes- Zone 3- US Foot
AK83-4	NAD83 Alaska State Planes- Zone 4- Meter (EPSG #26934)
AK83-4F	NAD83 Alaska State Planes- Zone 4- US Foot
AK83-5	NAD83 Alaska State Planes- Zone 5- Meter (EPSG #26935)
AK83-5F	NAD83 Alaska State Planes- Zone 5- US Foot
AK83-6	NAD83 Alaska State Planes- Zone 6- Meter (EPSG #26936)
AK83-6F	NAD83 Alaska State Planes- Zone 6- US Foot
AK83-7	NAD83 Alaska State Planes- Zone 7- Meter (EPSG #26937)
AK83-7F	NAD83 Alaska State Planes- Zone 7- US Foot
AK83-8	NAD83 Alaska State Planes- Zone 8- Meter (EPSG #26938)
AK83-8F	NAD83 Alaska State Planes- Zone 8- US Foot
AK83-9	NAD83 Alaska State Planes- Zone 9- Meter (EPSG #26939)
AK83-9F	NAD83 Alaska State Planes- Zone 9- US Foot
AK-9	NAD27 Alaska State Planes- Zone 9- US Foot (EPSG #26739)
AL83-E	NAD83 Alabama State Planes- Eastern Zone- Meter (EPSG #26929)
AL83-EF	NAD83 Alabama State Planes- Eastern Zone- US Foot
AL83-W	NAD83 Alabama State Planes- Western Zone- Meter (EPSG #26930)
AL83-WF	NAD83 Alabama State Planes- Western Zone- US Foot
AL-E	NAD27 Alabama State Planes- Eastern Zone- US Foot (EPSG #26729)
ALHP-E	HPGN Alabama State Planes- Eastern Zone- Meter (EPSG #2759)
ALHP-EF	HPGN Alabama State Planes- Eastern Zone- US Foot
ALHP-W	HPGN Alabama State Planes- Western Zone- Meter (EPSG #2760)
ALHP-WF	HPGN Alabama State Planes- Western Zone- US Foot
AL-W	NAD27 Alabama State Planes- Western Zone- US Foot (EPSG #26730)

Value	Description
AR83-N	NAD83 Arkansas State Planes- Northern Zone- Meter (EPSG #26951)
AR83-NF	NAD83 Arkansas State Planes- Northern Zone- US Foot
AR83-S	NAD83 Arkansas State Planes- Southern Zone- Meter (EPSG #26952)
AR83-SF	NAD83 Arkansas State Planes- Southern Zone- US Foot
ARHP-N	HARN (HPGN) Arkansas State Planes- Northern Zone- Meter (EPSG #2764)
ARHP-NF	HARN (HPGN) Arkansas State Planes- Northern Zone- US Foot
ARHP-S	HARN (HPGN) Arkansas State Planes- Southern Zone- Meter (EPSG #2765)
ARHP-SF	HARN (HPGN) Arkansas State Planes- Southern Zone- US Foot
AR-N	NAD27 Arkansas State Planes- Northern Zone- US Foot (EPSG #26751)
AR-S	NAD27 Arkansas State Planes- Southern Zone- US Foot (EPSG #26752)
AZ83-C	NAD83 Arizona State Planes- Central Zone- Meter (EPSG #26949)
AZ83-CCM	NAD83 Arizona State Planes- Central Zone- Centimeter
AZ83-CF	NAD83 Arizona State Planes- Central Zone- US Foot
AZ83-CIF	NAD83 Arizona State Planes- Central Zone- Intl Foot (EPSG #2223)
AZ83-E	NAD83 Arizona State Planes- East Zone- Meter (EPSG #26948)
AZ83-EF	NAD83 Arizona State Planes- East Zone- US Foot
AZ83-EIF	NAD83 Arizona State Planes- East Zone- Intl Foot (EPSG #2222)
AZ83-W	NAD83 Arizona State Planes- West Zone- Meter (EPSG #26950)
AZ83-WF	NAD83 Arizona State Planes- West Zone- US Foot
AZ83-WIF	NAD83 Arizona State Planes- West Zone- Intl Foot (EPSG #2224)
AZ-C	NAD27 Arizona State Planes- Central Zone- US Foot (EPSG #26749)
AZ-E	NAD27 Arizona State Planes- East Zone- US Foot (EPSG #26748)
AZHP-C	HPGN Arizona State Planes- Central Zone- Meter (EPSG #2762)
AZHP-CF	HPGN Arizona State Planes- Central Zone- US Foot
AZHP-CIF	HPGN Arizona State Planes- Central Zone- Intl Foot (EPSG #2868)
AZHP-E	HPGN Arizona State Planes- East Zone- Meter (EPSG #2761)
AZHP-EF	HPGN Arizona State Planes- East Zone- US Foot
AZHP-EIF	HPGN Arizona State Planes- East Zone- Intl Foot (EPSG #2867)
AZHP-W	HPGN Arizona State Planes- West Zone- Meter (EPSG #2763)
AZHP-WF	HPGN Arizona State Planes- West Zone- US Foot
AZHP-WIF	HPGN Arizona State Planes- West Zone- Intl Foot (EPSG #2869)
AZ-W	NAD27 Arizona State Planes- West Zone- US Foot (EPSG #26750)
CA83-I	NAD83 California State Planes- Zone I- Meter (EPSG #26941)
CA83-IF	NAD83 California State Planes- Zone I- US Foot (EPSG #2225)
CA83-II	NAD83 California State Planes- Zone II- Meter (EPSG #26942)
CA83-IIF	NAD83 California State Planes- Zone II- US Foot (EPSG #2226)
CA83-III	NAD83 California State Planes- Zone III- Meter (EPSG #26943)
CA83IIIF	NAD83 California State Planes- Zone III- US Foot (EPSG #2227)
CA83-IV	NAD83 California State Planes- Zone IV- Meter (EPSG #26944)
CA83-IVF	NAD83 California State Planes- Zone IV- US Foot (EPSG #2228)
CA83-V	NAD83 California State Planes- Zone V- Meter (EPSG #26945)
CA83-VF	NAD83 California State Planes- Zone V- US Foot (EPSG #2229)
CA83-VI	NAD83 California State Planes- Zone VI- Meter (EPSG #26946)
CA83-VIF	NAD83 California State Planes- Zone VI- US Foot (EPSG #2230)
CAHP-I	HPGN California State Planes- Zone I- Meter (EPSG #2766)
CAHP-IF	HPGN California State Planes- Zone I- US Foot (EPSG #2870)
CAHP-II	HPGN California State Planes- Zone II- Meter (EPSG #2767)

Value	Description
CAHP-IIF	HPGN California State Planes- Zone II- US Foot (EPSG #2871)
CAHP-III	HPGN California State Planes- Zone III- Meter (EPSG #2768)
CAHPIIIIF	HPGN California State Planes- Zone III- US Foot (EPSG #2872)
CAHP-IV	HPGN California State Planes- Zone IV- Meter (EPSG #2769)
CAHP-IVF	HPGN California State Planes- Zone IV- US Foot (EPSG #2873)
CAHP-V	HPGN California State Planes- Zone V- Meter (EPSG #2770)
CAHP-VF	HPGN California State Planes- Zone V- US Foot (EPSG #2874)
CAHP-VI	HPGN California State Planes- Zone VI- Meter (EPSG #2771)
CAHP-VIF	HPGN California State Planes- Zone VI- US Foot (EPSG #2875)
CA-I	NAD27 California State Planes- Zone I- US Foot (EPSG #26741)
CA-II	NAD27 California State Planes- Zone II- US Foot (EPSG #26742)
CA-III	NAD27 California State Planes- Zone III- US Foot (EPSG #26743)
CA-IV	NAD27 California State Planes- Zone IV- US Foot (EPSG #26744)
CA-V	NAD27 California State Planes- Zone V- US Foot (EPSG #26745)
CA-VI	NAD27 California State Planes- Zone VI- US Foot (EPSG #26746)
CA-VII	NAD27 California State Planes- Zone VII- US Foot (EPSG #26747)
CO83-C	NAD83 Colorado State Planes- Central Zone- Meter (EPSG #26954)
CO83-CF	NAD83 Colorado State Planes- Central Zone- US Foot (EPSG #2232)
CO83-N	NAD83 Colorado State Planes- Northern Zone- Meter (EPSG #26953)
CO83-NF	NAD83 Colorado State Planes- Northern Zone- US Foot (EPSG #2231)
CO83-S	NAD83 Colorado State Planes- Southern Zone- Meter (EPSG #26955)
CO83-SF	NAD83 Colorado State Planes- Southern Zone- US Foot (EPSG #2233)
CO-C	NAD27 Colorado State Planes- Central Zone- US Foot (EPSG #26754)
COHP-C	HPGN Colorado State Planes- Central Zone- Meter (EPSG #2773)
COHP-CF	HPGN Colorado State Planes- Central Zone- US Foot (EPSG #2877)
COHP-N	HPGN Colorado State Planes- Northern Zone- Meter (EPSG #2772)
COHP-NF	HPGN Colorado State Planes- Northern Zone- US Foot (EPSG #2876)
COHP-S	HPGN Colorado State Planes- Southern Zone- Meter (EPSG #2774)
COHP-SF	HPGN Colorado State Planes- Southern Zone- US Foot (EPSG #2878)
CO-N	NAD27 Colorado State Planes- Northern Zone- US Foot (EPSG #26753)
CO-S	NAD27 Colorado State Planes- Southern Zone- US Foot (EPSG #26755)
CT	NAD27 Connecticut State Plane Zone- US Foot (EPSG #26756)
CT83	NAD83 Connecticut State Plane Zone- Meter (EPSG #26956)
CT83F	NAD83 Connecticut State Plane Zone- US Foot (EPSG #2234)
CTHP	HPGN/HARN Connecticut State Plane Zone- Meter (EPSG #2775)
CTHPF	HPGN/HARN Connecticut State Plane Zone- US Foot (EPSG #2879)
DE	NAD27 Delaware State Planes- US Foot (EPSG #26757)
DE83	NAD83 Delaware State Planes- Meter (EPSG #26957)
DE83F	NAD83 Delaware State Planes- US Foot (EPSG #2235)
DEHP	HPGN Delaware State Planes- Meter (EPSG #2776)
DEHPF	HPGN Delaware State Planes- US Foot (EPSG #2880)
FL83-E	NAD83 Florida State Planes- Eastern Zone- Meter (EPSG #26958)
FL83-EF	NAD83 Florida State Planes- Eastern Zone- US Foot (EPSG #2236)
FL83-N	NAD83 Florida State Planes- Northern Zone- Meter (EPSG #26960)
FL83-NF	NAD83 Florida State Planes- Northern Zone- US Foot (EPSG #2238)
FL83-W	NAD83 Florida State Planes- Western Zone- Meter (EPSG #26959)
FL83-WF	NAD83 Florida State Planes- Western Zone- US Foot (EPSG #2237)

Value	Description
FL-E	NAD27 Florida State Planes- Eastern Zone- US Foot (EPSG #26758)
FLHP-E	HPGN Florida State Planes- Eastern Zone- Meter (EPSG #2777)
FLHP-EF	HPGN Florida State Planes- Eastern Zone- US Foot (EPSG #2881)
FLHP-N	HPGN Florida State Planes- Northern Zone- Meter (EPSG #2779)
FLHP-NF	HPGN Florida State Planes- Northern Zone- US Foot (EPSG #2883)
FLHP-W	HPGN Florida State Planes- Western Zone- Meter (EPSG #2778)
FLHP-WF	HPGN Florida State Planes- Western Zone- US Foot (EPSG #2882)
FL-N	NAD27 Florida State Planes- Northern Zone- US Foot (EPSG #26760)
FL-W	NAD27 Florida State Planes- Western Zone- US Foot (EPSG #26759)
GA83-E	NAD83 Georgia State Planes- Eastern Zone- Meter (EPSG #26966)
GA83-EF	NAD83 Georgia State Planes- Eastern Zone- US Foot (EPSG #2239)
GA83-W	NAD83 Georgia State Planes- Western Zone- Meter (EPSG #26967)
GA83-WF	NAD83 Georgia State Planes- Western Zone- US Foot (EPSG #2240)
GA-E	NAD27 Georgia State Planes- Eastern Zone- US Foot (EPSG #26766)
GAHP-E	HARN (HPGN) Georgia State Planes- Eastern Zone- Meter (EPSG #2780)
GAHP-EF	HARN (HPGN) Georgia State Planes- Eastern Zone- US Foot (EPSG #2884)
GAHP-W	HARN (HPGN) Georgia State Planes- Western Zone- Meter (EPSG #2781)
GAHP-WF	HARN (HPGN) Georgia State Planes- Western Zone- US Foot (EPSG #2885)
GA-W	NAD27 Georgia State Planes- Western Zone- US Foot (EPSG #26767)
HI-1	NAD27 Hawaii State Planes- Zone 1- US Foot
HI-2	NAD27 Hawaii State Planes- Zone 2- US Foot
HI-3	NAD27 Hawaii State Planes- Zone 3- US Foot
HI-4	NAD27 Hawaii State Planes- Zone 4- US Foot
HI-5	NAD27 Hawaii State Planes- Zone 5- US Foot
HI83-1	NAD83 Hawaii State Planes- Zone 1- Meter (EPSG #26961)
HI83-1F	NAD83 Hawaii State Planes- Zone 1- US Foot
HI83-2	NAD83 Hawaii State Planes- Zone 2- Meter (EPSG #26962)
HI83-2F	NAD83 Hawaii State Planes- Zone 2- US Foot
HI83-3	NAD83 Hawaii State Planes- Zone 3- Meter (EPSG #26963)
HI83-3F	NAD83 Hawaii State Planes- Zone 3- US Foot
HI83-4	NAD83 Hawaii State Planes- Zone 4- Meter (EPSG #26964)
HI83-4F	NAD83 Hawaii State Planes- Zone 4- US Foot
HI83-5	NAD83 Hawaii State Planes- Zone 5- Meter (EPSG #26965)
HI83-5F	NAD83 Hawaii State Planes- Zone 5- US Foot
HIHP-1	NAD83(HARN) / Hawaii zone 1 (EPSG #2782)
HIHP-2	NAD83(HARN) / Hawaii zone 2 (EPSG #2783)
HIHP-3	NAD83(HARN) / Hawaii zone 3 (EPSG #2784)
HIHP-4	NAD83(HARN) / Hawaii zone 4 (EPSG #2785)
HIHP-5	NAD83(HARN) / Hawaii zone 5 (EPSG #2786)
IA83-N	NAD83 Iowa State Planes- Northern Zone- Meter (EPSG #26975)
IA83-NF	NAD83 Iowa State Planes- Northern Zone- US Foot
IA83-S	NAD83 Iowa State Planes- Southern Zone- Meter (EPSG #26976)
IA83-SF	NAD83 Iowa State Planes- Southern Zone- US Foot
IAHP-N	HARN (HPGN) Iowa State Planes- Northern Zone- Meter (EPSG #2794)
IAHP-NF	HARN (HPGN) Iowa State Planes- Northern Zone- US Foot
IAHP-S	HARN (HPGN) Iowa State Planes- Southern Zone- Meter (EPSG #2795)
IAHP-SF	HARN (HPGN) Iowa State Planes- Southern Zone- US Foot

Value	Description
IA-N	NAD27 Iowa State Planes- Northern Zone- US Foot (EPSG #26775)
IA-S	NAD27 Iowa State Planes- Southern Zone- US Foot (EPSG #26776)
ID83-C	NAD83 Idaho State Planes- Central Zone- Meter (EPSG #26969)
ID83-CF	NAD83 Idaho State Planes- Central Zone- US Foot (EPSG #2242)
ID83-E	NAD83 Idaho State Planes- Eastern Zone- Meter (EPSG #26968)
ID83-EF	NAD83 Idaho State Planes- Eastern Zone- US Foot (EPSG #2241)
ID83-W	NAD83 Idaho State Planes- Western Zone- Meter (EPSG #26970)
ID83-WF	NAD83 Idaho State Planes- Western Zone- US Foot (EPSG #2243)
ID-C	NAD27 Idaho State Planes- Central Zone- US Foot (EPSG #26769)
ID-E	NAD27 Idaho State Planes- Eastern Zone- US Foot (EPSG #26768)
IDHP-C	HARN (HPGN) Idaho State Planes- Central Zone- Meter (EPSG #2788)
IDHP-CF	HARN (HPGN) Idaho State Planes- Central Zone- US Foot (EPSG #2887)
IDHP-E	HARN (HPGN) Idaho State Planes- Eastern Zone- Meter (EPSG #2787)
IDHP-EF	HARN (HPGN) Idaho State Planes- Eastern Zone- US Foot (EPSG #2886)
IDHP-W	HARN (HPGN) Idaho State Planes- Western Zone- Meter (EPSG #2789)
IDHP-WF	HARN (HPGN) Idaho State Planes- Western Zone- US Foot (EPSG #2888)
ID-W	NAD27 Idaho State Planes- Western Zone- US Foot (EPSG #26770)
IL83-E	NAD83 Illinois State Planes- Eastern Zone- Meter (EPSG #26971)
IL83-EF	NAD83 Illinois State Planes- Eastern Zone- US Foot
IL83-W	NAD83 Illinois State Planes- Western Zone- Meter (EPSG #26972)
IL83-WF	NAD83 Illinois State Planes- Western Zone- US Foot
IL-E	NAD27 Illinois State Planes- Eastern Zone- US Foot (EPSG #26771)
ILHP-E	HARN (HPGN) Illinois State Planes- Eastern Zone- Meter (EPSG #2790)
ILHP-EF	HARN (HPGN) Illinois State Planes- Eastern Zone- US Foot
ILHP-W	HARN (HPGN) Illinois State Planes- Western Zone- Meter (EPSG #2791)
ILHP-WF	HARN (HPGN) Illinois State Planes- Western Zone- US Foot
ILLIMAP	NAD27 Illinois Survey Mapping System- US Foot
IL-W	NAD27 Illinois State Planes- Western Zone- US Foot (EPSG #26772)
IN83-E	NAD83 Indiana State Planes- Eastern Zone- Meter (EPSG #26973)
IN83-EF	NAD83 Indiana State Planes- Eastern Zone- US Foot (EPSG #2244)
IN83-W	NAD83 Indiana State Planes- Western Zone- Meter (EPSG #26974)
IN83-WF	NAD83 Indiana State Planes- Western Zone- US Foot (EPSG #2245)
IN-E	NAD27 Indiana State Planes- Eastern Zone- US Foot (EPSG #26773)
INHP-E	HARN (HPGN) Indiana State Planes- Eastern Zone- Meter (EPSG #2792)
INHP-EF	HARN (HPGN) Indiana State Planes- Eastern Zone- US Foot (EPSG #2889)
INHP-W	HARN (HPGN) Indiana State Planes- Western Zone- Meter (EPSG #2793)
INHP-WF	HARN (HPGN) Indiana State Planes- Western Zone- US Foot (EPSG #2890)
IN-W	NAD27 Indiana State Planes- Western Zone- US Foot (EPSG #26774)
KS83-N	NAD83 Kansas State Planes- Northern Zone- Meter (EPSG #26977)
KS83-NF	NAD83 Kansas State Planes- Northern Zone- US Foot
KS83-S	NAD83 Kansas State Planes- Southern Zone- Meter (EPSG #26978)
KS83-SF	NAD83 Kansas State Planes- Southern Zone- US Foot
KSHP-N	HARN (HPGN) Kansas State Planes- Northern Zone- Meter (EPSG #2796)
KSHP-NF	HARN (HPGN) Kansas State Planes- Northern Zone- US Foot
KSHP-S	HARN (HPGN) Kansas State Planes- Southern Zone- Meter (EPSG #2797)
KSHP-SF	HARN (HPGN) Kansas State Planes- Southern Zone- US Foot
KS-N	NAD27 Kansas State Planes- Northern Zone- US Foot (EPSG #26777)

Value	Description
KS-S	NAD27 Kansas State Planes- Southern Zone- US Foot (EPSG #26778)
KY83-N	NAD83 Kentucky State Planes- Northern Zone- Meter (EPSG #26979)
KY83-NF	NAD83 Kentucky State Planes- Northern Zone- US Foot (EPSG #2246)
KY83-S	NAD83 Kentucky State Planes- Southern Zone- Meter (EPSG #26980)
KY83-SF	NAD83 Kentucky State Planes- Southern Zone- US Foot (EPSG #2247)
KYHP-N	HPGN Kentucky State Planes- Northern Zone- Meter (EPSG #2798)
KYHP-NF	HPGN Kentucky State Planes- Northern Zone- US Foot (EPSG #2891)
KYHP-S	HPGN Kentucky State Planes- Southern Zone- Meter (EPSG #2799)
KYHP-SF	HPGN Kentucky State Planes- Southern Zone- US Foot (EPSG #2892)
KY-N	NAD27 Kentucky State Planes- Northern Zone- US Foot (EPSG #26779)
KY-S	NAD27 Kentucky State Planes- Southern Zone- US Foot (EPSG #26780)
LA83-N	NAD83 Louisiana State Planes- Northern Zone- Meter (EPSG #26981)
LA83-NF	NAD83 Louisiana State Planes- Northern Zone- US Foot
LA83-O	NAD83 Louisiana State Planes- Offshore- Meter (EPSG #32199)
LA83-OF	NAD83 Louisiana State Planes- Offshore- US Foot
LA83-S	NAD83 Louisiana State Planes- Southern Zone- Meter (EPSG #26982)
LA83-SF	NAD83 Louisiana State Planes- Southern Zone- US Foot
LAHP-N	HPGN Louisiana State Planes- Northern Zone- Meter (EPSG #2800)
LAHP-NF	HPGN Louisiana State Planes- Northern Zone- US Foot
LAHP-O	HPGN Louisiana State Planes- Offshore- Meter
LAHP-OF	HPGN Louisiana State Planes- Offshore- US Foot
LAHP-S	HPGN Louisiana State Planes- Southern Zone- Meter (EPSG #2801)
LAHP-SF	HPGN Louisiana State Planes- Southern Zone- US Foot
LA-N	NAD27 Louisiana State Planes- Northern Zone- US Foot (EPSG #26781)
LA-O	NAD27 Louisiana State Planes- Offshore- US Foot (EPSG #32099)
LA-S	NAD27 Louisiana State Planes- Southern Zone- US Foot (EPSG #26782)
LL-83	NAD83 Latitude/Longitude- Degrees
LL84	WGS84 Lat/Long- Degrees- -180 ==> +180 (EPSG #4326)
MA	NAD27 Massachusetts State Planes- Mainland Zone- US Foot (EPSG #26786)
MA27-IS	NAD27 Massachusetts State Planes- Island Zone- US Foot (EPSG #26787)
MA83	NAD83 Massachusetts State Planes- Mainland Zone- Meter (EPSG #26986)
MA83F	NAD83 Massachusetts State Planes- Mainland Zone- US Foot (EPSG #2249)
MA83-IS	NAD83 Massachusetts State Planes- Island Zone- Meter (EPSG #26987)
MA83-ISF	NAD83 Massachusetts State Planes- Island Zone- US Foot (EPSG #2250)
MAHP	HPGN/HARN Massachusetts State Planes- Mainland Zone- Meter (EPSG #2805)
MAHPF	HPGN/HARN Massachusetts State Planes- Mainland Zone- US Foot (EPSG #2894)
MAHP-IS	HPGN/HARN Massachusetts State Planes- Island Zone- Meter (EPSG #2806)
MAHP-ISF	HPGN/HARN Massachusetts State Planes- Island Zone- US Foot (EPSG #2895)
MD	NAD27 Maryland State Plane Zone- US Foot (EPSG #26785)
MD83	NAD83 Maryland State Plane Zone- Meter (EPSG #26985)
MD83F	NAD83 Maryland State Plane Zone- US Foot (EPSG #2248)
MDHP	HPGN Maryland State Plane Zone- Meter (EPSG #2804)
MDHPF	HPGN Maryland State Plane Zone- US Foot (EPSG #2893)

Value	Description
ME83-E	NAD83 Maine State Planes- Eastern Zone- Meter (EPSG #26983)
ME83-EF	NAD83 Maine State Planes- Eastern Zone- US Foot
ME83-W	NAD83 Maine State Planes- Western Zone- Meter (EPSG #26984)
ME83-WF	NAD83 Maine State Planes- Western Zone- US Foot
ME-E	NAD27 Maine State Planes- Eastern Zone- US Foot (EPSG #26783)
MEHP-E	HPGN Maine State Planes- Eastern Zone- Meter (EPSG #2802)
MEHP-EF	HPGN Maine State Planes- Eastern Zone- US Foot
MEHP-W	HPGN Maine State Planes- Western Zone- Meter (EPSG #2803)
MEHP-WF	HPGN Maine State Planes- Western Zone- US Foot
ME-W	NAD27 Maine State Planes- Western Zone- US Foot (EPSG #26784)
MI27-C	NAD27 Michigan State Planes- Central Zone- US Foot (EPSG #26812)
MI27-N	NAD27 Michigan State Planes- Northern Zone- US Foot (EPSG #26811)
MI27-S	NAD27 Michigan State Planes- Southern Zone- US Foot (EPSG #26813)
MI83-C	NAD83 Michigan State Planes- Central Zone- Meter (EPSG #26989)
MI83-CF	NAD83 Michigan State Planes- Central Zone- US Foot
MI83-CIF	NAD83 Michigan State Planes- Central Zone- Intl Foot (EPSG #2252)
MI83-N	NAD83 Michigan State Planes- Northern Zone- Meter (EPSG #26988)
MI83-NF	NAD83 Michigan State Planes- Northern Zone- US Foot
MI83-NIF	NAD83 Michigan State Planes- Northern Zone- Intl Foot (EPSG #2251)
MI83-S	NAD83 Michigan State Planes- Southern Zone- Meter (EPSG #26990)
MI83-SF	NAD83 Michigan State Planes- Southern Zone- US Foot
MI83-SIF	NAD83 Michigan State Planes- Southern Zone- Intl Foot (EPSG #2253)
MIHP-C	HARN (HPGN) Michigan State Planes- Central Zone- Meter (EPSG #2808)
MIHP-CF	HARN (HPGN) Michigan State Planes- Central Zone- US Foot
MIHP-CIF	HARN (HPGN) Michigan State Planes- Central Zone- Intl Foot (EPSG #2897)
MIHP-N	HARN (HPGN) Michigan State Planes- Northern Zone- Meter (EPSG #2807)
MIHP-NF	HARN (HPGN) Michigan State Planes- Northern Zone- US Foot
MIHP-NIF	HARN (HPGN) Michigan State Planes- Northern Zone- Intl Foot (EPSG #2896)
MIHP-S	HARN (HPGN) Michigan State Planes- Southern Zone- Meter (EPSG #2809)
MIHP-SF	HARN (HPGN) Michigan State Planes- Southern Zone- US Foot
MIHP-SIF	HARN (HPGN) Michigan State Planes- Southern Zone- Intl Foot (EPSG #2898)
MN83-C	NAD83 Minnesota State Planes- Central Zone- Meter (EPSG #26992)
MN83-CF	NAD83 Minnesota State Planes- Central Zone- US Foot
MN83-N	NAD83 Minnesota State Planes- Northern Zone- Meter (EPSG #26991)
MN83-NF	NAD83 Minnesota State Planes- Northern Zone- US Foot
MN83-S	NAD83 Minnesota State Planes- South Zone- Meter (EPSG #26993)
MN83-SF	NAD83 Minnesota State Planes- South Zone- US Foot
MN-C	NAD27 Minnesota State Planes- Central Zone- US Foot (EPSG #26792)
MNHP-C	HARN (HPGN) Minnesota State Planes- Central Zone- Meter (EPSG #2811)
MNHP-CF	HARN (HPGN) Minnesota State Planes- Central Zone- US Foot
MNHP-N	HARN (HPGN) Minnesota State Planes- Northern Zone- Meter (EPSG #2810)
MNHP-NF	HARN (HPGN) Minnesota State Planes- Northern Zone- US Foot
MNHP-S	HARN (HPGN) Minnesota State Planes- South Zone- Meter (EPSG #2812)
MNHP-SF	HARN (HPGN) Minnesota State Planes- South Zone- US Foot

Value	Description
MN-N	NAD27 Minnesota State Planes- Northern Zone- US Foot (EPSG #26791)
MN-S	NAD27 Minnesota State Planes- South- US Foot (EPSG #26793)
MO83-C	NAD83 Missouri State Planes- Central Zone- Meter (EPSG #26997)
MO83-CF	NAD83 Missouri State Planes- Central Zone- US Foot
MO83-E	NAD83 Missouri State Planes- Eastern Zone- Meter (EPSG #26996)
MO83-EF	NAD83 Missouri State Planes- Eastern Zone- US Foot
MO83-W	NAD83 Missouri State Planes- Western Zone- Meter (EPSG #26998)
MO83-WF	NAD83 Missouri State Planes- Western Zone- US Foot
MO-C	NAD27 Missouri State Planes- Central Zone- US Foot (EPSG #26797)
MO-E	NAD27 Missouri State Planes- Eastern Zone- US Foot (EPSG #26796)
MOHP-C	HARN (HPGN) Missouri State Planes- Central Zone- Meter (EPSG #2816)
MOHP-CF	HARN (HPGN) Missouri State Planes- Central Zone- US Foot
MOHP-E	HARN (HPGN) Missouri State Planes- Eastern Zone- Meter (EPSG #2815)
MOHP-EF	HARN (HPGN) Missouri State Planes- Eastern Zone- US Foot
MOHP-W	HARN (HPGN) Missouri State Planes- Western Zone- Meter (EPSG #2817)
MOHP-WF	HARN (HPGN) Missouri State Planes- Western Zone- US Foot
MO-W	NAD27 Missouri State Planes- Western Zone- US Foot (EPSG #26798)
MS83-E	NAD83 Mississippi State Planes- Eastern Zone- Meter (EPSG #26994)
MS83-EF	NAD83 Mississippi State Planes- Eastern Zone- US Foot (EPSG #2254)
MS83-TM	NAD83 Mississippi Transverse Mercator Projection (meters)
MS83-W	NAD83 Mississippi State Planes- Western Zone- Meter (EPSG #26995)
MS83-WF	NAD83 Mississippi State Planes- Western Zone- US Foot (EPSG #2255)
MS-E	NAD27 Mississippi State Planes- Eastern Zone- US Foot (EPSG #26794)
MSHP-E	HPGN Mississippi State Planes- Eastern Zone- Meter (EPSG #2813)
MSHP-EF	HPGN Mississippi State Planes- Eastern Zone- US Foot (EPSG #2899)
MSHP-W	HPGN Mississippi State Planes- Western Zone- Meter (EPSG #2814)
MSHP-WF	HPGN Mississippi State Planes- Western Zone- US Foot (EPSG #2900)
MS-W	NAD27 Mississippi State Planes- Western Zone- US Foot (EPSG #26795)
MT83	NAD83 Montana State Plane Zone- Meter (EPSG #32100)
MT83F	NAD83 Montana State Plane Zone- US Foot
MT83IF	NAD83 Montana State Planes- Intl Foot (EPSG #2256)
MT-C	NAD27 Montana State Planes- Central Zone- US Foot (EPSG #32002)
MTHP	HPGN Montana State Plane Zone- Meter (EPSG #2818)
MTHPF	HPGN Montana State Plane Zone- US Foot
MTHPIF	HPGN Montana State Planes- Intl Foot (EPSG #2901)
MT-N	NAD27 Montana State Planes- Northern Zone- US Foot (EPSG #32001)
MT-S	NAD27 Montana State Planes- Southern Zone- US Foot (EPSG #32003)
NB83	NAD83 Nebraska State Planes- Meter (EPSG #32104)
NB83F	NAD83 Nebraska State Planes- US Foot
NBHP	HPGN/HARN Nebraska State Planes- Meter (EPSG #2819)
NBHPF	HPGN/HARN Nebraska State Planes- US Foot
NB-N	NAD27 Nebraska State Planes- Northern Zone- US Foot (EPSG #32005)
NB-S	NAD27 Nebraska State Planes- Southern Zone- US Foot (EPSG #32006)
NC	NAD27 North Carolina State Planes- US Foot (EPSG #32019)
NC83	NAD83 North Carolina State Planes- Meter (EPSG #32119)
NC83F	NAD83 North Carolina State Planes- US Foot (EPSG #2264)
NCHP	HARN (HPGN) North Carolina State Planes- Meter

Value	Description
NCHPF	HARN (HPGN) North Carolina State Planes- US Foot
ND83-N	NAD83 North Dakota State Planes- Northern Zone- Meter (EPSG #32120)
ND83-NF	NAD83 North Dakota State Planes- Northern Zone- US Foot
ND83-S	NAD83 North Dakota State Planes- Southern Zone- Meter (EPSG #32121)
ND83-SF	NAD83 North Dakota State Planes- Southern Zone- US Foot
NDHP-N	HARN (HPGN) North Dakota State Planes- Northern Zone- Meter (EPSG #2832)
NDHP-NF	HARN (HPGN) North Dakota State Planes- Northern Zone- US Foot
NDHP-S	HARN (HPGN) North Dakota State Planes- Southern Zone- Meter (EPSG #2833)
NDHP-SF	HARN (HPGN) North Dakota State Planes- Southern Zone- US Foot
ND-N	NAD27 North Dakota State Planes- Northern Zone- US Foot (EPSG #32020)
ND-S	NAD27 North Dakota State Planes- Southern Zone- US Foot (EPSG #32021)
NE83	NAD83 Nebraska State Planes- Meter
NE83F	NAD83 Nebraska State Planes- US Foot
NE-N	NAD27 Nebraska State Planes- Northern Zone- US Foot
NE-S	NAD27 Nebraska State Planes- Southern Zone- US Foot
NH	NAD27 New Hampshire State Planes- US Foot (EPSG #32010)
NH83	NAD83 New Hampshire State Planes- Meter (EPSG #32110)
NH83F	NAD83 New Hampshire State Planes- US Foot
NHHP	HPGN/HARN New Hampshire State Planes- Meter (EPSG #2823)
NHHPF	HPGN/HARN New Hampshire State Planes- US Foot
NJ	NAD27 New Jersey State Planes- US Foot (EPSG #32011)
NJ83	NAD83 New Jersey State Planes- Meter (EPSG #32111)
NJ83F	NAD83 New Jersey State Planes- US Foot
NJHP	HARN (HPGN) New Jersey State Planes- Meter (EPSG #2824)
NJHPF	HARN (HPGN) New Jersey State Planes- US Foot
NM83-C	NAD83 New Mexico State Planes- Central Zone- Meter (EPSG #32113)
NM83-CF	NAD83 New Mexico State Planes- Central Zone- US Foot (EPSG #2258)
NM83-E	NAD83 New Mexico State Planes- Eastern Zone- Meter (EPSG #32112)
NM83-EF	NAD83 New Mexico State Planes- Eastern Zone- US Foot (EPSG #2257)
NM83-W	NAD83 New Mexico State Planes- Western Zone- Meter (EPSG #32114)
NM83-WF	NAD83 New Mexico State Planes- Western Zone- US Foot (EPSG #2259)
NM-C	NAD27 New Mexico State Planes- Central Zone- US Foot (EPSG #32013)
NM-E	NAD27 New Mexico State Planes- Eastern Zone- US Foot (EPSG #32012)
NMHP-C	HPGN New Mexico State Planes- Central Zone- Meter (EPSG #2826)
NMHP-CF	HPGN New Mexico State Planes- Central Zone- US Foot (EPSG #2903)
NMHP-E	HPGN New Mexico State Planes- Eastern Zone- Meter (EPSG #2825)
NMHP-EF	HPGN New Mexico State Planes- Eastern Zone- US Foot (EPSG #2902)
NMHP-W	HPGN New Mexico State Planes- Western Zone- Meter (EPSG #2827)
NMHP-WF	HPGN New Mexico State Planes- Western Zone- US Foot (EPSG #2904)
NM-W	NAD27 New Mexico State Planes- Western Zone- US Foot (EPSG #32014)
NV83-C	NAD83 Nevada State Planes- Central Zone- Meter (EPSG #32108)
NV83-CF	NAD83 Nevada State Planes- Central Zone- US Foot
NV83-E	NAD83 Nevada State Planes- Eastern Zone- Meter (EPSG #32107)
NV83-EF	NAD83 Nevada State Planes- Eastern Zone- US Foot
NV83-W	NAD83 Nevada State Planes- Western Zone- Meter (EPSG #32109)

Value	Description
NV83-WF	NAD83 Nevada State Planes- Western Zone- US Foot
NV-C	NAD27 Nevada State Planes- Central Zone- US Foot (EPSG #32008)
NV-E	NAD27 Nevada State Planes- Eastern Zone- US Foot (EPSG #32007)
NVHP-C	HARN (HPGN) Nevada State Planes- Central Zone- Meter (EPSG #2821)
NVHP-CF	HARN (HPGN) Nevada State Planes- Central Zone- US Foot
NVHP-E	HARN (HPGN) Nevada State Planes- Eastern Zone- Meter (EPSG #2820)
NVHP-EF	HARN (HPGN) Nevada State Planes- Eastern Zone- US Foot
NVHP-W	HARN (HPGN) Nevada State Planes- Western Zone- Meter (EPSG #2822)
NVHP-WF	HARN (HPGN) Nevada State Planes- Western Zone- US Foot
NV-W	NAD27 Nevada State Planes- Western Zone- US Foot (EPSG #32009)
NY83-C	NAD83 New York State Planes- Central Zone- Meter (EPSG #32116)
NY83-CF	NAD83 New York State Planes- Central Zone- US Foot (EPSG #2261)
NY83-E	NAD83 New York State Planes- Eastern Zone- Meter (EPSG #32115)
NY83-EF	NAD83 New York State Planes- Eastern Zone- US Foot (EPSG #2260)
NY83-LI	NAD83 New York State Planes- Long Island- Meter (EPSG #32118)
NY83-LIF	NAD83 New York State Planes- Long Island- US Foot (EPSG #2263)
NY83-W	NAD83 New York State Planes- Western Zone- Meter (EPSG #32117)
NY83-WF	NAD83 New York State Planes- Western Zone- US Foot (EPSG #2262)
NY-C	NAD27 New York State Planes- Central Zone- US Foot (EPSG #32016)
NY-E	NAD27 New York State Planes- Eastern Zone- US Foot (EPSG #32015)
NYHP-C	HARN (HPGN) New York State Planes- Central Zone- Meter (EPSG #2829)
NYHP-CF	HARN (HPGN) New York State Planes- Central Zone- US Foot (EPSG #2906)
NYHP-E	HARN (HPGN) New York State Planes- Eastern Zone- Meter (EPSG #2828)
NYHP-EF	HARN (HPGN) New York State Planes- Eastern Zone- US Foot (EPSG #2905)
NYHP-LI	HARN (HPGN) New York State Planes- Long Island- Meter (EPSG #2831)
NYHP-LIF	HARN (HPGN) New York State Planes- Long Island- US Foot (EPSG #2908)
NYHP-W	HARN (HPGN) New York State Planes- Western Zone- Meter (EPSG #2830)
NYHP-WF	HARN (HPGN) New York State Planes- Western Zone- US Foot (EPSG #2907)
NY-LI	NAD27 New York State Planes- Long Island- US Foot (EPSG #32018)
NY-W	NAD27 New York State Planes- Western Zone- US Foot (EPSG #32017)
OH83-N	NAD83 Ohio State Planes- Northern Zone- Meter (EPSG #32122)
OH83-NF	NAD83 Ohio State Planes- Northern Zone- US Foot
OH83-S	NAD83 Ohio State Planes- Southern Zone- Meter (EPSG #32123)
OH83-SF	NAD83 Ohio State Planes- Southern Zone- US Foot
OHHP-N	HARN (HPGN) Ohio State Planes- Northern Zone- Meter (EPSG #2834)
OHHP-NF	HARN (HPGN) Ohio State Planes- Northern Zone- US Foot
OHHP-S	HARN (HPGN) Ohio State Planes- Southern Zone- Meter (EPSG #2835)
OHHP-SF	HARN (HPGN) Ohio State Planes- Southern Zone- US Foot
OH-N	NAD27 Ohio State Planes- Northern Zone- US Foot (EPSG #32022)
OH-S	NAD27 Ohio State Planes- Southern Zone- US Foot (EPSG #32023)
OK83-N	NAD83 Oklahoma State Planes- Northern Zone- Meter (EPSG #32124)
OK83-NF	NAD83 Oklahoma State Planes- Northern Zone- US Foot (EPSG #2267)
OK83-S	NAD83 Oklahoma State Planes- Southern Zone- Meter (EPSG #32125)
OK83-SF	NAD83 Oklahoma State Planes- Southern Zone- US Foot (EPSG #2268)

Value	Description
OKHP-N	HPGN Oklahoma State Planes- Northern Zone- Meter (EPSG #2836)
OKHP-NF	HPGN Oklahoma State Planes- Northern Zone- US Foot (EPSG #2911)
OKHP-S	HPGN Oklahoma State Planes- Southern Zone- Meter (EPSG #2837)
OKHP-SF	HPGN Oklahoma State Planes- Southern Zone- US Foot (EPSG #2912)
OK-N	NAD27 Oklahoma State Planes- Northern Zone- US Foot (EPSG #32024)
OK-S	NAD27 Oklahoma State Planes- Southern Zone- US Foot (EPSG #32025)
OR83-N	NAD83 Oregon State Planes- Northern Zone- Meter (EPSG #32126)
OR83-NF	NAD83 Oregon State Planes- Northern Zone- US Foot
OR83-NIF	NAD83 Oregon State Planes- Northern Zone- Intl Foot (EPSG #2269)
OR83-S	NAD83 Oregon State Planes- Southern Zone- Meter (EPSG #32127)
OR83-SF	NAD83 Oregon State Planes- Southern Zone- US Foot
OR83-SIF	NAD83 Oregon State Planes- Southern Zone- Intl Foot (EPSG #2270)
OR83-SSCGIS	NAD83 Oregon GIS- International Foot (EPSG #2992)
ORHP-N	HPGN Oregon State Planes- Northern Zone- Meter (EPSG #2838)
ORHP-NF	HPGN Oregon State Planes- Northern Zone- US Foot
ORHP-NIF	HPGN Oregon State Planes- Northern Zone- Intl Foot (EPSG #2913)
ORHP-S	HPGN Oregon State Planes- Southern Zone- Meter (EPSG #2839)
ORHP-SF	HPGN Oregon State Planes- Southern Zone- US Foot
ORHP-SIF	HPGN Oregon State Planes- Southern Zone- Intl Foot (EPSG #2914)
OR-N	NAD27 Oregon State Planes- Northern Zone- US Foot (EPSG #32026)
OR-S	NAD27 Oregon State Planes- Southern Zone- US Foot (EPSG #32027)
PA83-N	NAD83 Pennsylvania State Planes- Northern Zone- Meter (EPSG #32128)
PA83-NF	NAD83 Pennsylvania State Planes- Northern Zone- US Foot (EPSG #2271)
PA83-S	NAD83 Pennsylvania State Planes- Southern Zone- Meter (EPSG #32129)
PA83-SF	NAD83 Pennsylvania State Planes- Southern Zone- US Foot (EPSG #2272)
PAHP-N	HARN (HPGN) Pennsylvania State Planes- Northern Zone- Meter
PAHP-NF	HARN (HPGN) Pennsylvania State Planes- Northern Zone- US Foot
PAHP-S	HARN (HPGN) Pennsylvania State Planes- Southern Zone- Meter
PAHP-SF	HARN (HPGN) Pennsylvania State Planes- Southern Zone- US Foot
PA-N	NAD27 Pennsylvania State Planes- Northern Zone- US Foot (EPSG #32028)
PA-S	NAD27 Pennsylvania State Planes- Southern Zone- US Foot (EPSG #32029)
PR-1	NAD27 Puerto Rico and Virgin Islands- Zone 1- US Foot
PR-2	NAD27 Puerto Rico- St Croix Virgin Island- Zone 2- US Foot
PR83	NAD83 Puerto Rico and Virgin Islands- Meter (EPSG #32161)
PR83F	NAD83 Puerto Rico and Virgin Islands- US Foot
PRHP	HPGN Puerto Rico and Virgin Islands- Meter (EPSG #2866)
PRHPF	HPGN Puerto Rico and Virgin Islands- US Foot
RI	NAD27 Rhode Island State Planes- US Foot (EPSG #32030)
RI83	NAD83 Rhode Island State Planes- Meter (EPSG #32130)
RI83F	NAD83 Rhode Island State Planes- US Foot
RIHP	HPGN/HARN Rhode Island State Planes- Meter (EPSG #2840)
RIHPF	HPGN/HARN Rhode Island State Planes- US Foot
SC83	NAD83 South Carolina State Planes- Meter (EPSG #32133)
SC83F	NAD83 South Carolina State Planes- US Foot
SC83IF	NAD83 South Carolina State Planes- Intl Foot (EPSG #2273)
SCHP	HARN (HPGN) South Carolina State Planes- Meter

Value	Description
SCHPF	HARN (HPGN) South Carolina State Planes- US Foot
SCHPIF	HARN (HPGN) South Carolina State Planes- Intl Foot
SC-N	NAD27 South Carolina State Planes- Northern Zone- US Foot (EPSG #32031)
SC-S	NAD27 South Carolina State Planes- Southern Zone- US Foot (EPSG #32033)
SD83-N	NAD83 South Dakota State Planes- Northern Zone- Meter (EPSG #32134)
SD83-NF	NAD83 South Dakota State Planes- Northern Zone- US Foot
SD83-S	NAD83 South Dakota State Planes- Southern Zone- Meter (EPSG #32135)
SD83-SF	NAD83 South Dakota State Planes- Southern Zone- US Foot
SDHP-N	HARN (HPGN) South Dakota State Planes- Northern Zone- Meter (EPSG #2841)
SDHP-NF	HARN (HPGN) South Dakota State Planes- Northern Zone- US Foot
SDHP-S	HARN (HPGN) South Dakota State Planes- Southern Zone- Meter (EPSG #2842)
SDHP-SF	HARN (HPGN) South Dakota State Planes- Southern Zone- US Foot
SD-N	NAD27 South Dakota State Planes- Northern Zone- US Foot (EPSG #32034)
SD-S	NAD27 South Dakota State Planes- Southern Zone- US Foot (EPSG #32035)
TN	NAD27 Tennessee State Plane Zone- US Foot (EPSG #2204)
TN83	NAD83 Tennessee State Plane Zone- Meter (EPSG #32136)
TN83F	NAD83 Tennessee State Plane Zone- US Foot (EPSG #2274)
TNHP	HPGN Tennessee State Plane Zone- Meter (EPSG #2843)
TNHPF	HPGN Tennessee State Plane Zone- US Foot (EPSG #2915)
TX83-C	NAD83 Texas State Planes- Central Zone- Meter (EPSG #32139)
TX83-CF	NAD83 Texas State Planes- Central Zone- US Foot (EPSG #2277)
TX83-N	NAD83 Texas State Planes- Northern Zone- Meter (EPSG #32137)
TX83-NC	NAD83 Texas State Planes- North Central Zone- Meter (EPSG #32138)
TX83-NCF	NAD83 Texas State Planes- North Central Zone- US Foot (EPSG #2276)
TX83-NF	NAD83 Texas State Planes- Northern Zone- US Foot (EPSG #2275)
TX83-S	NAD83 Texas State Planes- Southern Zone- Meter (EPSG #32141)
TX83-SC	NAD83 Texas State Planes- South Central Zone- Meter (EPSG #32140)
TX83-SCF	NAD83 Texas State Planes- South Central Zone- US Foot (EPSG #2278)
TX83-SF	NAD83 Texas State Planes- Southern Zone- US Foot (EPSG #2279)
TX-C	NAD27 Texas State Planes- Central Zone- US Foot (EPSG #32039)
TXHP-C	HPGN/HARN Texas State Planes- Central Zone- Meter (EPSG #2846)
TXHP-CF	HPGN/HARN Texas State Planes- Central Zone- US Foot (EPSG #2918)
TXHP-N	HPGN/HARN Texas State Planes- Northern Zone- Meter (EPSG #2844)
TXHP-NC	HPGN/HARN Texas State Planes- North Central Zone- Meter (EPSG #2845)
TXHP-NCF	HPGN/HARN Texas State Planes- North Central Zone- US Foot (EPSG #2917)
TXHP-NF	HPGN/HARN Texas State Planes- Northern Zone- US Foot (EPSG #2916)
TXHP-S	HPGN/HARN Texas State Planes- Southern Zone- Meter (EPSG #2848)
TXHP-SC	HPGN/HARN Texas State Planes- South Central Zone- Meter (EPSG #2847)
TXHP-SCF	HPGN/HARN Texas State Planes- South Central Zone- US Foot (EPSG #2919)
TXHP-SF	HPGN/HARN Texas State Planes- Southern Zone- US Foot (EPSG #2920)
TX-N	NAD27 Texas State Planes- Northern Zone- US Foot (EPSG #32037)
TX-NC	NAD27 Texas State Planes- North Central Zone- US Foot (EPSG #32038)

Value	Description
TX-S	NAD27 Texas State Planes- Southern Zone- US Foot (EPSG #32041)
TX-SC	NAD27 Texas State Planes- South Central Zone- US Foot (EPSG #32040)
UT83-C	NAD83 Utah State Planes- Central Zone- Meter (EPSG #32143)
UT83-CF	NAD83 Utah State Planes- Central Zone- US Foot
UT83-CIF	NAD83 Utah State Planes- Central Zone- Intl Foot (EPSG #2281)
UT83-N	NAD83 Utah State Planes- Northern Zone- Meter (EPSG #32142)
UT83-NF	NAD83 Utah State Planes- Northern Zone- US Foot
UT83-NIF	NAD83 Utah State Planes- Northern Zone- Intl Foot (EPSG #2280)
UT83-S	NAD83 Utah State Planes- Southern Zone- Meter (EPSG #32144)
UT83-SF	NAD83 Utah State Planes- Southern Zone- US Foot
UT83-SIF	NAD83 Utah State Planes- Southern Zone- Intl Foot (EPSG #2282)
UT-C	NAD27 Utah State Planes- Central Zone- US Foot (EPSG #32043)
UTHP-C	HARN (HPGN) Utah State Planes- Central Zone- Meter (EPSG #2850)
UTHP-CF	HARN (HPGN) Utah State Planes- Central Zone- US Foot
UTHP-CIF	HARN (HPGN) Utah State Planes- Central Zone- Intl Foot (EPSG #2922)
UTHP-N	HARN (HPGN) Utah State Planes- Northern Zone- Meter (EPSG #2849)
UTHP-NF	HARN (HPGN) Utah State Planes- Northern Zone- US Foot
UTHP-NIF	HARN (HPGN) Utah State Planes- Northern Zone- Intl Foot (EPSG #2921)
UTHP-S	HARN (HPGN) Utah State Planes- Southern Zone- Meter (EPSG #2851)
UTHP-SF	HARN (HPGN) Utah State Planes- Southern Zone- US Foot
UTHP-SIF	HARN (HPGN) Utah State Planes- Southern Zone- Intl Foot (EPSG #2923)
UTM27-1	NAD27 UTM- Zone 1 North- Meter
UTM27-10	NAD27 UTM- Zone 10 North- Meter (EPSG #26710)
UTM27-10F	NAD27 UTM- Zone 10 North- US Foot
UTM27-10IF	NAD27 UTM- Zone 10 North- Intl Foot
UTM27-11	NAD27 UTM- Zone 11 North- Meter (EPSG #26711)
UTM27-11F	NAD27 UTM- Zone 11 North- US Foot
UTM27-11IF	NAD27 UTM- Zone 11 North- Intl Foot
UTM27-12	NAD27 UTM- Zone 12 North- Meter (EPSG #26712)
UTM27-12F	NAD27 UTM- Zone 12 North- US Foot
UTM27-12IF	NAD27 UTM- Zone 12 North- Intl Foot
UTM27-13	NAD27 UTM- Zone 13 North- Meter (EPSG #26713)
UTM27-13F	NAD27 UTM- Zone 13 North- US Foot
UTM27-13IF	NAD27 UTM- Zone 13 North- Intl Foot
UTM27-14	NAD27 UTM- Zone 14 North- Meter (EPSG #26714)
UTM27-14F	NAD27 UTM- Zone 14 North- US Foot
UTM27-14IF	NAD27 UTM- Zone 14 North- Intl Foot
UTM27-15	NAD27 UTM- Zone 15 North- Meter (EPSG #26715)
UTM27-15F	NAD27 UTM- Zone 15 North- US Foot
UTM27-15IF	NAD27 UTM- Zone 15 North- Intl Foot
UTM27-16	NAD27 UTM- Zone 16 North- Meter (EPSG #26716)
UTM27-16F	NAD27 UTM- Zone 16 North- US Foot
UTM27-16IF	NAD27 UTM- Zone 16 North- Intl Foot
UTM27-17	NAD27 UTM- Zone 17 North- Meter (EPSG #26717)
UTM27-17F	NAD27 UTM- Zone 17 North- US Foot
UTM27-17IF	NAD27 UTM- Zone 17 North- Intl Foot
UTM27-18	NAD27 UTM- Zone 18 North- Meter (EPSG #26718)

Value	Description
UTM27-18F	NAD27 UTM- Zone 18 North- US Foot
UTM27-18IF	NAD27 UTM- Zone 18 North- Intl Foot
UTM27-19	NAD27 UTM- Zone 19 North- Meter (EPSG #26719)
UTM27-19F	NAD27 UTM- Zone 19 North- US Foot
UTM27-19IF	NAD27 UTM- Zone 19 North- Intl Foot
UTM27-1N	NAD27 / UTM zone 1N (EPSG #26701)
UTM27-2	NAD27 UTM- Zone 2 North- Meter
UTM27-20	NAD27 UTM- Zone 20 North- Meter (EPSG #26720)
UTM27-20F	NAD27 UTM- Zone 20 North- US Foot
UTM27-20IF	NAD27 UTM- Zone 20 North- Intl Foot
UTM27-21	NAD27 UTM- Zone 21 North- Meter (EPSG #26721)
UTM27-21F	NAD27 UTM- Zone 21 North- US Foot
UTM27-21IF	NAD27 UTM- Zone 21 North- Intl Foot
UTM27-22	NAD27 UTM- Zone 22 North- Meter (EPSG #26722)
UTM27-22F	NAD27 UTM- Zone 22 North- US Foot
UTM27-22IF	NAD27 UTM- Zone 22 North- Intl Foot
UTM27-23	NAD27 UTM- Zone 23 North- Meter
UTM27-23F	NAD27 UTM- Zone 23 North- US Foot
UTM27-23IF	NAD27 UTM- Zone 23 North- Intl Foot
UTM27-2N	NAD27 / UTM zone 2N (EPSG #26702)
UTM27-3	NAD27 UTM- Zone 3 North- Meter (EPSG #26703)
UTM27-3F	NAD27 UTM- Zone 3 North- US Survey Foot
UTM27-3IF	NAD27 UTM- Zone 3 North- Intl Foot
UTM27-4	NAD27 UTM- Zone 4 North- Meter (EPSG #26704)
UTM27-4F	NAD27 UTM- Zone 4 North- US Survey Foot
UTM27-4IF	NAD27 UTM- Zone 4 North- Intl Foot
UTM27-5	NAD27 UTM- Zone 5 North- Meter (EPSG #26705)
UTM27-58	NAD27 UTM- Zone 58 North- Meter
UTM27-59	NAD27 UTM- Zone 59 North- Meter
UTM27-5F	NAD27 UTM- Zone 5 North- US Foot
UTM27-5IF	NAD27 UTM- Zone 5 North- Intl Foot
UTM27-6	NAD27 UTM- Zone 6 North- Meter (EPSG #26706)
UTM27-60	NAD27 UTM- Zone 60 North- Meter
UTM27-6F	NAD27 UTM- Zone 6 North- US Foot
UTM27-6IF	NAD27 UTM- Zone 6 North- Intl Foot
UTM27-7	NAD27 UTM- Zone 7 North- Meter (EPSG #26707)
UTM27-7F	NAD27 UTM- Zone 7 North- US Foot
UTM27-7IF	NAD27 UTM- Zone 7 North- Intl Foot
UTM27-8	NAD27 UTM- Zone 8 North- Meter (EPSG #26708)
UTM27-8F	NAD27 UTM- Zone 8 North- US Foot
UTM27-8IF	NAD27 UTM- Zone 8 North- Intl Foot
UTM27-9	NAD27 UTM- Zone 9 North- Meter (EPSG #26709)
UTM27-9F	NAD27 UTM- Zone 9 North- US Foot
UTM27-9IF	NAD27 UTM- Zone 9 North- Intl Foot
UTM83-1	NAD83 UTM- Zone 1 North- Meter (EPSG #26901)
UTM83-10	NAD83 UTM- Zone 10 North- Meter (EPSG #26910)
UTM83-10F	NAD83 UTM- Zone 10 North- US Foot

Value	Description
UTM83-10IF	NAD83 UTM- Zone 10 North- Intl Foot
UTM83-11	NAD83 UTM- Zone 11 North- Meter (EPSG #26911)
UTM83-11F	NAD83 UTM- Zone 11 North- US Foot
UTM83-11IF	NAD83 UTM- Zone 11 North- Intl Foot
UTM83-12	NAD83 UTM- Zone 12 North- Meter (EPSG #26912)
UTM83-12F	NAD83 UTM- Zone 12 North- US Foot
UTM83-12IF	NAD83 UTM- Zone 12 North- Intl Foot
UTM83-13	NAD83 UTM- Zone 13 North- Meter (EPSG #26913)
UTM83-13F	NAD83 UTM- Zone 13 North- US Foot
UTM83-13IF	NAD83 UTM- Zone 13 North- Intl Foot
UTM83-14	NAD83 UTM- Zone 14 North- Meter (EPSG #26914)
UTM83-14F	NAD83 UTM- Zone 14 North- US Foot
UTM83-14IF	NAD83 UTM- Zone 14 North- Intl Foot
UTM83-15	NAD83 UTM- Zone 15 North- Meter (EPSG #26915)
UTM83-15F	NAD83 UTM- Zone 15 North- US Foot
UTM83-15IF	NAD83 UTM- Zone 15 North- Intl Foot
UTM83-16	NAD83 UTM- Zone 16 North- Meter (EPSG #26916)
UTM83-16F	NAD83 UTM- Zone 16 North- US Foot
UTM83-16IF	NAD83 UTM- Zone 16 North- Intl Foot
UTM83-17	NAD83 UTM- Zone 17 North- Meter (EPSG #26917)
UTM83-17F	NAD83 UTM- Zone 17 North- US Foot
UTM83-17IF	NAD83 UTM- Zone 17 North- Intl Foot
UTM83-18	NAD83 UTM- Zone 18 North- Meter (EPSG #26918)
UTM83-18F	NAD83 UTM- Zone 18 North- US Foot
UTM83-18IF	NAD83 UTM- Zone 18 North- Intl Foot
UTM83-19	NAD83 UTM- Zone 19 North- Meter (EPSG #26919)
UTM83-19F	NAD83 UTM- Zone 19 North- US Foot
UTM83-19IF	NAD83 UTM- Zone 19 North- Intl Foot
UTM83-2	NAD83 UTM- Zone 2 North- Meter (EPSG #26902)
UTM83-20	NAD83 UTM- Zone 20 North- Meter (EPSG #26920)
UTM83-20F	NAD83 UTM- Zone 20 North- US Foot
UTM83-20IF	NAD83 UTM- Zone 20 North- Intl Foot
UTM83-21	NAD83 UTM- Zone 21 North- Meter (EPSG #26921)
UTM83-21F	NAD83 UTM- Zone 21 North- US Foot
UTM83-21IF	NAD83 UTM- Zone 21 North- Intl Foot
UTM83-22	NAD83 UTM- Zone 22 North- Meter (EPSG #26922)
UTM83-22F	NAD83 UTM- Zone 22 North- US Foot
UTM83-22IF	NAD83 UTM- Zone 22 North- Intl Foot
UTM83-23	NAD83 Universal Transverse Mercator- Zone 23 North- Meter
UTM83-3	NAD83 UTM- Zone 3 North- Meter (EPSG #26903)
UTM83-3F	NAD83 UTM- Zone 3 North- US Survey Foot
UTM83-4	NAD83 UTM- Zone 4 North- Meter (EPSG #26904)
UTM83-4F	NAD83 UTM- Zone 4 North- US Survey Foot
UTM83-5	NAD83 UTM- Zone 5 North- Meter (EPSG #26905)
UTM83-58	NAD83 UTM- Zone 58 North- Meter
UTM83-59	NAD83 UTM- Zone 59 North- Meter
UTM83-5F	NAD83 UTM- Zone 5 North- US Survey Foot

Value	Description
UTM83-5IF	NAD83 UTM- Zone 5 North- Intl Foot
UTM83-6	NAD83 UTM- Zone 6 North- Meter (EPSG #26906)
UTM83-60	NAD83 UTM- Zone 60 North- Meter
UTM83-6F	NAD83 UTM- Zone 6 North- US Foot
UTM83-6IF	NAD83 UTM- Zone 6 North- Intl Foot
UTM83-7	NAD83 UTM- Zone 7 North- Meter (EPSG #26907)
UTM83-7F	NAD83 UTM- Zone 7 North- US Foot
UTM83-7IF	NAD83 UTM- Zone 7 North- Intl Foot
UTM83-8	NAD83 UTM- Zone 8 North- Meter (EPSG #26908)
UTM83-8F	NAD83 UTM- Zone 8 North- US Foot
UTM83-8IF	NAD83 UTM- Zone 8 North- Intl Foot
UTM83-9	NAD83 UTM- Zone 9 North- Meter (EPSG #26909)
UTM83-9F	NAD83 UTM- Zone 9 North- US Foot
UTM83-9IF	NAD83 UTM- Zone 9 North- Intl Foot
UTM84-10N	WGS 1984 UTM- Zone 10 North- Meter (EPSG #32610)
UTM84-10S	WGS 1984 UTM- Zone 10 South- Meter (EPSG #32710)
UTM84-11N	WGS 1984 UTM- Zone 11 North- Meter (EPSG #32611)
UTM84-11S	WGS 1984 UTM- Zone 11 South- Meter (EPSG #32711)
UTM84-12N	WGS 1984 UTM- Zone 12 North- Meter (EPSG #32612)
UTM84-12S	WGS 1984 UTM- Zone 12 South- Meter (EPSG #32712)
UTM84-13N	WGS 1984 UTM- Zone 13 North- Meter (EPSG #32613)
UTM84-13S	WGS 1984 UTM- Zone 13 South- Meter (EPSG #32713)
UTM84-14N	WGS 1984 UTM- Zone 14 North- Meter (EPSG #32614)
UTM84-14S	WGS 1984 UTM- Zone 14 South- Meter (EPSG #32714)
UTM84-15N	WGS 1984 UTM- Zone 15 North- Meter (EPSG #32615)
UTM84-15S	WGS 1984 UTM- Zone 15 South- Meter (EPSG #32715)
UTM84-16N	WGS 1984 UTM- Zone 16 North- Meter (EPSG #32616)
UTM84-16S	WGS 1984 UTM- Zone 16 South- Meter (EPSG #32716)
UTM84-17N	WGS 1984 UTM- Zone 17 North- Meter (EPSG #32617)
UTM84-17S	WGS 1984 UTM- Zone 17 South- Meter (EPSG #32717)
UTM84-18N	WGS 1984 UTM- Zone 18 North- Meter (EPSG #32618)
UTM84-18S	WGS 1984 UTM- Zone 18 South- Meter (EPSG #32718)
UTM84-19N	WGS 1984 UTM- Zone 19 North- Meter (EPSG #32619)
UTM84-19S	WGS 1984 UTM- Zone 19 South- Meter (EPSG #32719)
UTM84-1N	WGS 1984 UTM- Zone 1 North- Meter (EPSG #32601)
UTM84-1S	WGS 1984 UTM- Zone 1 South- Meter (EPSG #32701)
UTM84-20N	WGS 1984 UTM- Zone 20 North- Meter (EPSG #32620)
UTM84-20S	WGS 1984 UTM- Zone 20 South- Meter (EPSG #32720)
UTM84-21N	WGS 1984 UTM- Zone 21 North- Meter (EPSG #32621)
UTM84-21S	WGS 1984 UTM- Zone 21 South- Meter (EPSG #32721)
UTM84-22N	WGS 1984 UTM- Zone 22 North- Meter (EPSG #32622)
UTM84-22S	WGS 1984 UTM- Zone 22 South- Meter (EPSG #32722)
UTM84-23N	WGS 1984 UTM- Zone 23 North- Meter (EPSG #32623)
UTM84-23S	WGS 1984 UTM- Zone 23 South- Meter (EPSG #32723)
UTM84-24N	WGS 1984 UTM- Zone 24 North- Meter (EPSG #32624)
UTM84-24S	WGS 1984 UTM- Zone 24 South- Meter (EPSG #32724)
UTM84-25N	WGS 1984 UTM- Zone 25 North- Meter (EPSG #32625)

Value	Description
UTM84-25S	WGS 1984 UTM- Zone 25 South- Meter (EPSG #32725)
UTM84-26N	WGS 1984 UTM- Zone 26 North- Meter (EPSG #32626)
UTM84-26S	WGS 1984 UTM- Zone 26 South- Meter (EPSG #32726)
UTM84-27N	WGS 1984 UTM- Zone 27 North- Meter (EPSG #32627)
UTM84-27S	WGS 1984 UTM- Zone 27 South- Meter (EPSG #32727)
UTM84-28N	WGS 1984 UTM- Zone 28 North- Meter (EPSG #32628)
UTM84-28S	WGS 1984 UTM- Zone 28 South- Meter (EPSG #32728)
UTM84-29N	WGS 1984 UTM- Zone 29 North- Meter (EPSG #32629)
UTM84-29S	WGS 1984 UTM- Zone 29 South- Meter (EPSG #32729)
UTM84-2N	WGS 1984 UTM- Zone 2 North- Meter (EPSG #32602)
UTM84-2S	WGS 1984 UTM- Zone 2 South- Meter (EPSG #32702)
UTM84-30N	WGS 1984 UTM- Zone 30 North- Meter (EPSG #32630)
UTM84-30S	WGS 1984 UTM- Zone 30 South- Meter (EPSG #32730)
UTM84-31N	WGS 1984 UTM- Zone 31 North- Meter (EPSG #32631)
UTM84-31S	WGS 1984 UTM- Zone 31 South- Meter (EPSG #32731)
UTM84-32N	WGS 1984 UTM- Zone 32 North- Meter (EPSG #32632)
UTM84-32S	WGS 1984 UTM- Zone 32 South- Meter (EPSG #32732)
UTM84-33N	WGS 1984 UTM- Zone 33 North- Meter (EPSG #32633)
UTM84-33S	WGS 1984 UTM- Zone 33 South- Meter (EPSG #32733)
UTM84-34N	WGS 1984 UTM- Zone 34 North- Meter (EPSG #32634)
UTM84-34S	WGS 1984 UTM- Zone 34 South- Meter (EPSG #32734)
UTM84-35N	WGS 1984 UTM- Zone 35 North- Meter (EPSG #32635)
UTM84-35S	WGS 1984 UTM- Zone 35 South- Meter (EPSG #32735)
UTM84-36N	WGS 1984 UTM- Zone 36 North- Meter (EPSG #32636)
UTM84-36S	WGS 1984 UTM- Zone 36 South- Meter (EPSG #32736)
UTM84-37N	WGS 1984 UTM- Zone 37 North- Meter (EPSG #32637)
UTM84-37S	WGS 1984 UTM- Zone 37 South- Meter (EPSG #32737)
UTM84-38N	WGS 1984 UTM- Zone 38 North- Meter (EPSG #32638)
UTM84-38S	WGS 1984 UTM- Zone 38 South- Meter (EPSG #32738)
UTM84-39N	WGS 1984 UTM- Zone 39 North- Meter (EPSG #32639)
UTM84-39S	WGS 1984 UTM- Zone 39 South- Meter (EPSG #32739)
UTM84-3N	WGS 1984 UTM- Zone 3 North- Meter (EPSG #32603)
UTM84-3S	WGS 1984 UTM- Zone 3 South- Meter (EPSG #32703)
UTM84-40N	WGS 1984 UTM- Zone 40 North- Meter (EPSG #32640)
UTM84-40S	WGS 1984 UTM- Zone 40 South- Meter (EPSG #32740)
UTM84-41N	WGS 1984 UTM- Zone 41 North- Meter (EPSG #32641)
UTM84-41S	WGS 1984 UTM- Zone 41 South- Meter (EPSG #32741)
UTM84-42N	WGS 1984 UTM- Zone 42 North- Meter (EPSG #32642)
UTM84-42S	WGS 1984 UTM- Zone 42 South- Meter (EPSG #32742)
UTM84-43N	WGS 1984 UTM- Zone 43 North- Meter (EPSG #32643)
UTM84-43S	WGS 1984 UTM- Zone 43 South- Meter (EPSG #32743)
UTM84-44N	WGS 1984 UTM- Zone 44 North- Meter (EPSG #32644)
UTM84-44S	WGS 1984 UTM- Zone 44 South- Meter (EPSG #32744)
UTM84-45N	WGS 1984 UTM- Zone 45 North- Meter (EPSG #32645)
UTM84-45S	WGS 1984 UTM- Zone 45 South- Meter (EPSG #32745)
UTM84-46N	WGS 1984 UTM- Zone 46 North- Meter (EPSG #32646)
UTM84-46S	WGS 1984 UTM- Zone 46 South- Meter (EPSG #32746)

Value	Description
UTM84-47N	WGS 1984 UTM- Zone 47 North- Meter (EPSG #32647)
UTM84-47S	WGS 1984 UTM- Zone 47 South- Meter (EPSG #32747)
UTM84-48N	WGS 1984 UTM- Zone 48 North- Meter (EPSG #32648)
UTM84-48S	WGS 1984 UTM- Zone 48 South- Meter (EPSG #32748)
UTM84-49N	WGS 1984 UTM- Zone 49 North- Meter (EPSG #32649)
UTM84-49S	WGS 1984 UTM- Zone 49 South- Meter (EPSG #32749)
UTM84-4N	WGS 1984 UTM- Zone 4 North- Meter (EPSG #32604)
UTM84-4S	WGS 1984 UTM- Zone 4 South- Meter (EPSG #32704)
UTM84-50N	WGS 1984 UTM- Zone 50 North- Meter (EPSG #32650)
UTM84-50S	WGS 1984 UTM- Zone 50 South- Meter (EPSG #32750)
UTM84-51N	WGS 1984 UTM- Zone 51 North- Meter (EPSG #32651)
UTM84-51S	WGS 1984 UTM- Zone 51 South- Meter (EPSG #32751)
UTM84-52N	WGS 1984 UTM- Zone 52 North- Meter (EPSG #32652)
UTM84-52S	WGS 1984 UTM- Zone 52 South- Meter (EPSG #32752)
UTM84-53N	WGS 1984 UTM- Zone 53 North- Meter (EPSG #32653)
UTM84-53S	WGS 1984 UTM- Zone 53 South- Meter (EPSG #32753)
UTM84-54N	WGS 1984 UTM- Zone 54 North- Meter (EPSG #32654)
UTM84-54S	WGS 1984 UTM- Zone 54 South- Meter (EPSG #32754)
UTM84-55N	WGS 1984 UTM- Zone 55 North- Meter (EPSG #32655)
UTM84-55S	WGS 1984 UTM- Zone 55 South- Meter (EPSG #32755)
UTM84-56N	WGS 1984 UTM- Zone 56 North- Meter (EPSG #32656)
UTM84-56S	WGS 1984 UTM- Zone 56 South- Meter (EPSG #32756)
UTM84-57N	WGS 1984 UTM- Zone 57 North- Meter (EPSG #32657)
UTM84-57S	WGS 1984 UTM- Zone 57 South- Meter (EPSG #32757)
UTM84-58N	WGS 1984 UTM- Zone 58 North- Meter (EPSG #32658)
UTM84-58S	WGS 1984 UTM- Zone 58 South- Meter (EPSG #32758)
UTM84-59N	WGS 1984 UTM- Zone 59 North- Meter (EPSG #32659)
UTM84-59S	WGS 1984 UTM- Zone 59 South- Meter (EPSG #32759)
UTM84-5N	WGS 1984 UTM- Zone 5 North- Meter (EPSG #32605)
UTM84-5S	WGS 1984 UTM- Zone 5 South- Meter (EPSG #32705)
UTM84-60N	WGS 1984 UTM- Zone 60 North- Meter (EPSG #32660)
UTM84-60S	WGS 1984 UTM- Zone 60 South- Meter (EPSG #32760)
UTM84-6N	WGS 1984 UTM- Zone 6 North- Meter (EPSG #32606)
UTM84-6S	WGS 1984 UTM- Zone 6 South- Meter (EPSG #32706)
UTM84-7N	WGS 1984 UTM- Zone 7 North- Meter (EPSG #32607)
UTM84-7S	WGS 1984 UTM- Zone 7 South- Meter (EPSG #32707)
UTM84-8N	WGS 1984 UTM- Zone 8 North- Meter (EPSG #32608)
UTM84-8S	WGS 1984 UTM- Zone 8 South- Meter (EPSG #32708)
UTM84-9N	WGS 1984 UTM- Zone 9 North- Meter (EPSG #32609)
UTM84-9S	WGS 1984 UTM- Zone 9 South- Meter (EPSG #32709)
UTM89-30N	WGS 1984 UTM- Zone 30 North- Meter
UTMHP-10	HPGN UTM- Zone 10 North- Meter
UTMHP-10F	HPGN UTM- Zone 10 North- US Foot
UTMHP-10IF	HPGN UTM- Zone 10 North- Intl Foot
UTMHP-11	HPGN UTM- Zone 11 North- Meter
UTMHP-11F	HPGN UTM- Zone 11 North- US Foot
UTMHP-11IF	HPGN UTM- Zone 11 North- Intl Foot

Value	Description
UTMHP-12	HPGN UTM- Zone 12 North- Meter
UTMHP-12F	HPGN UTM- Zone 12 North- US Foot
UTMHP-12IF	HPGN UTM- Zone 12 North- Intl Foot
UTMHP-13	HPGN UTM- Zone 13 North- Meter
UTMHP-13F	HPGN UTM- Zone 13 North- US Foot
UTMHP-13IF	HPGN UTM- Zone 13 North- Intl Foot
UTMHP-14	HPGN UTM- Zone 14 North- Meter
UTMHP-14F	HPGN UTM- Zone 14 North- US Foot
UTMHP-14IF	HPGN UTM- Zone 14 North- Intl Foot
UTMHP-15	HPGN UTM- Zone 15 North- Meter
UTMHP-15F	HPGN UTM- Zone 15 North- US Foot
UTMHP-15IF	HPGN UTM- Zone 15 North- Intl Foot
UTMHP-16	HPGN UTM- Zone 16 North- Meter
UTMHP-16F	HPGN UTM- Zone 16 North- US Foot
UTMHP-16IF	HPGN UTM- Zone 16 North- Intl Foot
UTMHP-17	HPGN UTM- Zone 17 North- Meter
UTMHP-17F	HPGN UTM- Zone 17 North- US Foot
UTMHP-17IF	HPGN UTM- Zone 17 North- Intl Foot
UTMHP-18	HPGN UTM- Zone 18 North- Meter
UTMHP-18F	HPGN UTM- Zone 18 North- US Foot
UTMHP-18IF	HPGN UTM- Zone 18 North- Intl Foot
UT-N	NAD27 Utah State Planes- Northern Zone- US Foot (EPSG #32042)
UT-S	NAD27 Utah State Planes- Southern Zone- US Foot (EPSG #32044)
VA83-N	NAD83 Virginia State Planes- Northern Zone- Meter (EPSG #32146)
VA83-NF	NAD83 Virginia State Planes- Northern Zone- US Foot (EPSG #2283)
VA83-S	NAD83 Virginia State Planes- Southern Zone- Meter (EPSG #32147)
VA83-SF	NAD83 Virginia State Planes- Southern Zone- US Foot (EPSG #2284)
VAHP-N	HPGN/HARN Virginia State Planes- Northern Zone- Meter (EPSG #2853)
VAHP-NF	HPGN/HARN Virginia State Planes- Northern Zone- US Foot (EPSG #2924)
VAHP-S	HPGN/HARN Virginia State Planes- Southern Zone- Meter (EPSG #2854)
VAHP-SF	HPGN/HARN Virginia State Planes- Southern Zone- US Foot (EPSG #2925)
VA-N	NAD27 Virginia State Planes- Northern Zone- US Foot (EPSG #32046)
VA-S	NAD27 Virginia State Planes- Southern Zone- US Foot (EPSG #32047)
VT	NAD27 Vermont State Planes- US Foot (EPSG #32045)
VT83	NAD83 Vermont State Planes- Meter (EPSG #32145)
VT83F	NAD83 Vermont State Planes- US Foot
VTHP	HPGN/HARN Vermont State Planes- Meter (EPSG #2852)
VTHPF	HPGN/HARN Vermont State Planes- US Foot
WA83-N	NAD83 Washington State Planes- Northern Zone- Meter (EPSG #32148)
WA83-NF	NAD83 Washington State Planes- Northern Zone- US Foot (EPSG #2285)
WA83-S	NAD83 Washington State Planes- Southern Zone- Meter (EPSG #32149)
WA83-SF	NAD83 Washington State Planes- Southern Zone- US Foot (EPSG #2286)
WAHP-N	HPGN Washington State Planes- Northern Zone- Meter (EPSG #2855)
WAHP-NF	HPGN Washington State Planes- Northern Zone- US Foot (EPSG #2926)
WAHP-S	HPGN Washington State Planes- Southern Zone- Meter (EPSG #2856)
WAHP-SF	HPGN Washington State Planes- Southern Zone- US Foot (EPSG #2927)
WA-N	NAD27 Washington State Planes- Northern Zone- US Foot (EPSG #32048)

Value	Description
WA-S	NAD27 Washington State Planes- Southern Zone- US Foot (EPSG #32049)
WI83-C	NAD83 Wisconsin State Planes- Central Zone- Meter (EPSG #32153)
WI83-CF	NAD83 Wisconsin State Planes- Central Zone- US Foot (EPSG #2288)
WI83-N	NAD83 Wisconsin State Planes- Northern Zone- Meter (EPSG #32152)
WI83-NF	NAD83 Wisconsin State Planes- Northern Zone- US Foot (EPSG #2287)
WI83-S	NAD83 Wisconsin State Planes- Southern Zone- Meter (EPSG #32154)
WI83-SF	NAD83 Wisconsin State Planes- Southern Zone- US Foot (EPSG #2289)
WI-C	NAD27 Wisconsin State Planes- Central Zone- US Foot (EPSG #32053)
WIHP-C	HPGN Wisconsin State Planes- Central Zone- Meter (EPSG #2860)
WIHP-CF	HPGN Wisconsin State Planes- Central Zone- US Foot (EPSG #2929)
WIHP-N	HPGN Wisconsin State Planes- Northern Zone- Meter (EPSG #2859)
WIHP-NF	HPGN Wisconsin State Planes- Northern Zone- US Foot (EPSG #2928)
WIHP-S	HPGN Wisconsin State Planes- Southern Zone- Meter (EPSG #2861)
WIHP-SF	HPGN Wisconsin State Planes- Southern Zone- US Foot (EPSG #2930)
WI-N	NAD27 Wisconsin State Planes- Northern Zone- US Foot (EPSG #32052)
WI-S	NAD27 Wisconsin State Planes- Southern Zone- US Foot (EPSG #32054)
WV83-N	NAD83 West Virginia State Planes- Northern Zone- Meter (EPSG #32150)
WV83-NF	NAD83 West Virginia State Planes- Northern Zone- US Foot
WV83-S	NAD83 West Virginia State Planes- Southern Zone- Meter (EPSG #32151)
WV83-SF	NAD83 West Virginia State Planes- Southern Zone- US Foot
WVHP-N	HARN (HPGN) West Virginia State Planes- Northern Zone- Meter (EPSG #2857)
WVHP-NF	HARN (HPGN) West Virginia State Planes- Northern Zone- US Foot
WVHP-S	HARN (HPGN) West Virginia State Planes- Southern Zone- Meter (EPSG #2858)
WVHP-SF	HARN (HPGN) West Virginia State Planes- Southern Zone- US Foot
WV-N	NAD27 West Virginia State Planes- Northern Zone- US Foot (EPSG #32050)
WV-S	NAD27 West Virginia State Planes- Southern Zone- US Foot (EPSG #32051)
WY83-E	NAD83 Wyoming State Planes- Eastern- Meter (EPSG #32155)
WY83-EC	NAD83 Wyoming State Planes- East Central Zone- Meter (EPSG #32156)
WY83-ECF	NAD83 Wyoming State Planes- East Central Zone- US Foot
WY83-EF	NAD83 Wyoming State Planes- Eastern- US Foot
WY83-W	NAD83 Wyoming State Planes- Western- Meter (EPSG #32158)
WY83-WC	NAD83 Wyoming State Planes- West Central Zone- Meter (EPSG #32157)
WY83-WCF	NAD83 Wyoming State Planes- West Central Zone- US Foot
WY83-WF	NAD83 Wyoming State Planes- Western- US Foot
WY-E	NAD27 Wyoming State Planes- Eastern Zone- US Foot (EPSG #32055)
WY-EC	NAD27 Wyoming State Planes- East Central Zone- US Foot (EPSG #32056)
WYHP-E	HPGN/HARN Wyoming State Planes- Eastern- Meter (EPSG #2862)
WYHP-EC	HPGN/HARN Wyoming State Planes- East Central Zone- Meter (EPSG #2863)
WYHP-ECF	HPGN/HARN Wyoming State Planes- East Central Zone- US Foot
WYHP-EF	HPGN/HARN Wyoming State Planes- Eastern- US Foot
WYHP-W	HPGN/HARN Wyoming State Planes- Western- Meter (EPSG #2865)
WYHP-WC	HPGN/HARN Wyoming State Planes- West Central Zone- Meter (EPSG #2864)
WYHP-WCF	HPGN/HARN Wyoming State Planes- West Central Zone- US Foot
WYHP-WF	HPGN/HARN Wyoming State Planes- Western- US Foot

Value	Description
WY-W	NAD27 Wyoming State Planes- Western Zone- US Foot (EPSG #32058)
WY-WC	NAD27 Wyoming State Planes- West Central Zone- US Foot (EPSG #32057)

5.15.13.CodeDesignGroup

Group #	Tail Height (ft)	Wingspan (ft)
I	<20	<49
II	20 - <30	49 - <79
III	30 - <45	79 - <118
IV	45 - <60	118 - <171
V	60 - <66	171 - <214
VI	66 - <80	214 - <262

5.15.14.CodeDesignSurfaceType

Value	Description
BRL	Building restriction line (not a standard)
FATO	Final Approach and Takeoff Clearance Surface
HAS	Heliport Safety Area
HPZ	Heliport Protection Zone
IAOFZ	Inner Approach Obstacle Free Zone
ITOFZ	Inner Transitional Obstacle Free Zone
OFZ	Obstacle Free Zone
POFZ	Precision obstacle free zone (See AC 150/5300-13)
PRSFVR	Parallel Runway Separation Simultaneous IFR Operations
PRSVFR	Parallel Runway Separation Simultaneous VFR Operations
ROFA	Runway Object Free Area
RPZ	Runway protection zone (See AC 150/5300-13)
RSA	Runway safety area
RWYPTX	Runway to Parallel Taxiway and Taxiline Separation
TOFA	Taxiway and taxilane object free area (See AC 150/5300-13)
TSA	Threshold sighting area
TSS	Threshold Siting Surface (See AC 150/5300-13)
TXSA	Taxiway safety area (See AC 150/5300-13)

5.15.15.CodeDirectionality

Value	Description
BI	Bidirectional
ES	One way from end-to-startpoint
SE	One way from start-to-endpoint

5.15.16.CodeFaaRegion

Value	Description
AAL	Alaska
ACE	Central
AEA	Eastern
AGL	Great Lakes
ANE	New England
ANM	Northwest Mountain
ASO	Southern

Value	Description
ASW	Southwest
AWP	Western Pacific

5.15.17.CodeFuel

Value	Description
A	Jet A, without icing inhibitor
A+	Jet A+, Kerosene fuel, Type A, Jet A or JP-1 With icing inhibitor.
A1	Jet A1, without icing inhibitor
A1+	Jet A1+, Jet A1 with icing inhibitor.
B	Jet B, Wide cut turbine fuel, Without icing inhibitor.
B+	Jet B+, wide cut turbine fuel with icing inhibitor.
C	91/96 octane gasoline, leaded, No MIL Spec.
F	80 octane gasoline, unleaded, No MIL Spec.
G	Aviation Gasoline (AVGAS), octane unknown
H	108/135 octane gasoline, leaded, No MIL Spec
J	Jet fuel available but type is unknown
J4	JP-4, Wide cut turbine fuel MIL Spec T-5624
J5	JP-5, Kerosene MIL Spec T-5624
J8	JP-8, Semi Kerosene MIL Spec T-83133, without icing inhibitor
K	73 octane gasoline, unleaded, No MIL Spec
X	Storage tanks available and fuel type unknown or the tanks were used at one time for aviation products but may now store other products
7	JP-7, Jet Propellant type 7 (Glass Tank Fuel)
80	80/87 octane gasoline, leaded, MIL-L-5572F (RED)
100	100/130 octane gasoline, leaded, MIL-L-5572F (GREEN)
100LL	100/130 MIL Spec, low lead, aviation gasoline (BLUE)
115	115/145 octane gasoline, leaded, MIL-L-5572F (PURPLE)

5.15.18.CodeGateStandType

Name	Definition
ANG-NI	Angled nose-in parking position
ANG-NO	Angled nose-out parking position
HS	Hard stand
ISO	Isolated parking position.
JB	Jet bridge
NI	Nose-in parking position.
OTHER	Other
PR	Portable ramp
RMT	Remote parking position.
SR	Stairs
TM	Temporary
UNK	unknown

5.15.19.CodeGridType

Name	Definition
ed50	European Datum 1950
gaussKruger	Gauss Kruger
GEOREF	World Geographic Reference System

Name	Definition
ING	Irish National Grid Reference Survey
LCC	Lambert Conformal Conic
LL	Latitude, longitude
MIL	Military
OTHER	Other
RT90	Swedish Coordinate System
SPCS	State Plane Coordinate System
UPS	Universal Polar Stereographic
USNG	United States National Grid for Spatial Addressing
UTM	Universal Transverse Mercator

5.15.20.CodeHazardCategory

Class	Division	Description
1		Explosives are any substance or article, including a device, which is designed to function by explosion or which, by chemical reaction within itself is able to function in a similar manner even if not designed to function by explosion (unless the article is otherwise classed under a provision of 49CFR).
	1.1	Explosives that have a mass explosion hazard. A mass explosion is one which affects almost the entire load instantaneously
	1.2	Explosives that have a projection hazard but not a mass explosion hazard
	1.3	Explosives that have a fire hazard and either a minor blast hazard or a minor projection hazard or, both but not a mass explosion hazard.
	1.4	Explosives that present a minor explosion hazard. The explosive effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package.
	1.5	Blasting agents consist of very insensitive explosives. This division comprises substances which have a mass explosion hazard but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.
	1.6	Consists of extremely insensitive articles which do not have a mass explosive hazard. This division comprises articles which contain only extremely insensitive detonating substances and which demonstrate a negligible probability of accidental initiation or propagation.
2		HazMat Class 2 includes all gases which are compressed and stored for transportation. Class 2 has three divisions: Flammable (also called combustible), Non-Flammable/Non-Poisonous, and Poisonous.
	2.1	Flammable Gas - 454 kg (1001 lb) of any material which is a gas at 20 °C (68 °F) or less and 101.3 kPa (14.7 psi) of pressure (a material which has a boiling point of 20 °C (68 °F) or less at 101.3 kPa (14.7 psi)) which- <ol style="list-style-type: none"> 1. Is ignitable at 101.3 kPa (14.7 psi) when in a mixture of 13 percent or less by volume with air; or 2. Has a flammable range at 101.3 kPa (14.7 psi) with air of at least 12 percent regardless of the lower limit.

Class	Division	Description
	2.2	<p>Non-Flammable, Non-Poisonous Gas - This division includes compressed gas, liquefied gas, pressurized cryogenic gas, compressed gas in solution, asphyxiant gas and oxidizing gas. A non-flammable, nonpoisonous compressed gas (Division 2.2) means any material (or mixture) which:</p> <ol style="list-style-type: none"> 1. Exerts in the packaging an absolute pressure of 280 kPa (40.6 psia) or greater at 20 °C (68 °F), and 2. Does not meet the definition of Division 2.1 or 2.3.
	2.3	<p>Poison Gas - Gas poisonous by inhalation means a material which is a gas at 20 °C or less and a pressure of 101.3 kPa (a material which has a boiling point of 20 °C or less at 101.3kPa (14.7 psi)) and which:</p> <ol style="list-style-type: none"> 1. Is known to be so toxic to humans as to pose a hazard to health during transportation, or 2. In the absence of adequate data on human toxicity, is presumed to be toxic to humans because when tested on laboratory animals it has an LC50 value of not more than 5000 ml/m³. See 49CFR 173.116(a) for assignment of Hazard Zones A, B, C or D. LC50 values for mixtures may be determined using the formula in 49 CFR 173.133(b)(1)(i)
3		HazMat Class 3 are flammable liquids. They are liquids with flash point of not more than 60.5°C (141°F), or any material in a liquid phase with a flash point at or above 37.8°C (100°F).
4		HazMat Class 4 are Flammable solids. Flammable Solids are any materials in the solid phase of matter that can readily undergo combustion in the presence of a source of ignition under standard circumstances, i.e. without: Artificially changing variables such as pressure or density; or Adding accelerants.
	4.1	Flammable Solid
	4.2	Spontaneously Combustible
	4.3	Dangerous When Wet - Dangerous when wet material is material that, by contact with water, is liable to become spontaneously flammable or to give off flammable or toxic gas at a rate greater than 1 liter per kilogram of the material, per hour, when tested in accordance with the UN Manual of Tests and Criteria.
5		HazMat Class 5 Oxidizing Agents and Organic Peroxides - An oxidizer is a chemical that readily yields oxygen in reactions, thereby causing or enhancing combustion
	5.1	Oxidizers - An oxidizer is a material that may, generally by yielding oxygen, cause or enhance the combustion of other materials
	5.2	Organic Peroxides - An organic peroxide is any organic compound containing oxygen (O) in the bivalent -O-O- structure and which may be considered a derivative of hydrogen peroxide, where one or more of the hydrogen atoms have been replaced by organic radicals (with some exceptions)

Class	Division	Description
6		HazMat Class 6 is Toxic and Infectious Substances. Poisonous material is a material, other than a gas, known to be so toxic to humans that it presents a health hazard during transportation
	6.1	Poisonous material is a material, other than a gas, which is known to be so toxic to humans as to afford a hazard to health during transportation, or which, in the absence of adequate data on human toxicity:
	6.2	Biohazards
7		HazMat Class 7 is Radioactive substances. Radioactive substances are materials that emit radiation.
8		Hazmat Class 8 is Corrosive Substances. A corrosive material is a liquid or solid that causes full thickness destruction of human skin at the site of contact within a specified period of time. A liquid that has a severe corrosion rate on steel or aluminum based on the criteria in 49CFR 173.137(c)(2) is also a corrosive material.
9		HazMat Class 9 is Miscellaneous Substances. The miscellaneous hazardous materials category encompasses all hazardous materials that do not fit one of the definitions listed in Class 1 through Class 8.

5.15.21. CodeHazardType

Value	Description
BASH	Bird Aircraft Strike Hazard
DEER STRIKE	
TBD	Hazard yet to be determined
TORTOISE PITFALL	
UNKNOWN	

5.15.22. CodeHowAcquired

Value	Description
AIP_DEVELOPMENT	Land acquired using AIP funds for airport development
AIP_APPROACH_PROTECTION	Land acquired using AIP funds for approach protection
AIP_NOISE	Land acquired using AIP funds for noise
DONATION	Land acquired by donation
PFC_DEVELOPMENT	Land acquired using PFC funds for airport development
PFC_APPROACH_PROTECTION	Land acquired using PFC funds for approach protection
PFC_NOISE	Land acquired using PFC funds for noise
SURPLUS_PROPERTY	Land acquired as surplus property

5.15.23. CodeLandmarkType

Value	Description
AERIAL CABLEWAY	
AGRICULTURE AREA	
AIRPORT	
ATHLETIC FIELD	
BOAT RAMP	
BREAKWATER	
CANAL	
CEMETERY	
CREEK	

Value	Description
DAM	
FENCE	
GOLF COURSE	
LEVEE	
MILITARY AREA	
MOUNTAIN PASS	
OTHER	
PIER	
POWERPLANT	
QUARRY	
QUAY	
RACECOURSE OR TRACK	
RAILROAD	
RIVER	
ROAD	
SHORELINE	
STADIUM	
STREAM	
TANK TRAP	
TRENCH	
URBAN AREA	
UTILITY LINE	
WALL	
WHARF	

5.15.24.CodeLandUseType

Value	Description
1000	Residential activities (Source: APA LBCS)
1100	Household activities (Source: APA LBCS)
1200	Transient living (Source: APA LBCS)
1300	Institutional living (Source: APA LBCS)
2000	Shopping, business, or trade activities (Source: APA LBCS)
2100	Shopping (Source: APA LBCS)
2110	Goods-oriented shopping (Source: APA LBCS)
2120	Service-oriented shopping (Source: APA LBCS)
2200	Restaurant-type activity (Source: APA LBCS)
2210	Restaurant-type activity with drive-through (Source: APA LBCS)
2300	Office activities (Source: APA LBCS)
2310	Office activities with high turnover of people (Source: APA LBCS)
2320	Office activities with high turnover of automobiles (Source: APA LBCS)
3000	Industrial, manufacturing, and waste-related activities (Source: APA LBCS)
3100	Plant, factory, or heavy goods storage or handling activities (Source: APA LBCS)
3110	Primarily plant or factory-type activities (Source: APA LBCS)
3120	Primarily goods storage or handling activities (Source: APA LBCS)
3200	Solid waste management activities (Source: APA LBCS)
3210	Solid waste collection and storage (Source: APA LBCS)
3220	Landfilling or dumping (Source: APA LBCS)
3230	Waste processing or recycling (Source: APA LBCS)

Value	Description
3300	Construction activities (grading, digging, etc.) (Source: APA LBCS)
4000	Social, institutional, or infrastructure-related activities (Source: APA LBCS)
4100	School or library activities (Source: APA LBCS)
4110	Classroom-type activities (Source: APA LBCS)
4120	Training or instructional activities outside classrooms (Source: APA LBCS)
4130	Other instructional activities including those that occur in libraries (Source: APA LBCS)
4200	Emergency response or public-safety-related activities (Source: APA LBCS)
4210	Fire and rescue-related activities (Source: APA LBCS)
4220	Police, security, and protection-related activities (Source: APA LBCS)
4230	Emergency or disaster-response-related activities (Source: APA LBCS)
4300	Activities associated with utilities (water, sewer, power, etc.) (Source: APA LBCS)
4310	Water-supply-related activities (Source: APA LBCS)
4311	Water storing, pumping, or piping (Source: APA LBCS)
4312	Water purification and filtration activities (Source: APA LBCS)
4313	Irrigation water storage and distribution activities (Source: APA LBCS)
4314	Flood control, dams, and other large irrigation activities (Source: APA LBCS)
4320	Sewer-related control, monitor, or distribution activities (Source: APA LBCS)
4321	Sewage storing, pumping, or piping (Source: APA LBCS)
4322	Sewer treatment and processing (Source: APA LBCS)
4330	Power generation, control, monitor, or distribution activities (Source: APA LBCS)
4331	Power transmission lines or control activities (Source: APA LBCS)
4332	Power generation, storage, or processing activities (Source: APA LBCS)
4340	Telecommunications-related control, monitor, or distribution activities (Source: APA LBCS)
4350	Natural gas or fuels-related control, monitor, or distribution Activities (Source: APA LBCS)
4400	Mass storage, inactive (Source: APA LBCS)
4410	Water storage (Source: APA LBCS)
4420	Storage of natural gas, fuels, etc. (Source: APA LBCS)
4430	Storage of chemical, nuclear, or other materials (Source: APA LBCS)
4500	Health care, medical, or treatment activities (Source: APA LBCS)
4600	Interment, cremation, or grave digging activities (Source: APA LBCS)
4700	Military base activities (Source: APA LBCS)
4710	Ordnance storage (Source: APA LBCS)
4720	Range and test activities (Source: APA LBCS)
5000	Travel or movement activities (Source: APA LBCS)
5100	Pedestrian movement (Source: APA LBCS)
5200	Vehicular movement (Source: APA LBCS)
5210	Vehicular parking, storage, etc. (Source: APA LBCS)
5220	Drive-in, drive through, stop-n-go, etc. (Source: APA LBCS)
5400	Trains or other rail movement (Source: APA LBCS)
5410	Rail maintenance, storage, or related activities (Source: APA LBCS)
5500	Sailing, boating, and other port, marine and water-based Activities (Source: APA LBCS)
5510	Boat mooring, docking, or servicing (Source: APA LBCS)
5520	Port, ship-building, and related activities (Source: APA LBCS)
5600	Aircraft takeoff, landing, taxiing, and parking (Source: APA LBCS)

Value	Description
5700	Spacecraft launching and related activities (Source: APA LBCS)
6000	Mass assembly of people (Source: APA LBCS)
6100	Passenger assembly (Source: APA LBCS)
6200	Spectator sports assembly (Source: APA LBCS)
6300	Movies, concerts, or entertainment shows (Source: APA LBCS)
6400	Gatherings at fairs and exhibitions (Source: APA LBCS)
6500	Mass training, drills, etc. (Source: APA LBCS)
6600	Social, cultural, or religious assembly (Source: APA LBCS)
6700	Gatherings at galleries, museums, aquariums, zoological parks, etc. (Source: APA LBCS)
6800	Historical or cultural celebrations, parades, reenactments, etc. (Source: APA LBCS)
7000	Leisure activities (Source: APA LBCS)
7100	Active leisure sports and related activities (Source: APA LBCS)
7110	Running, jogging, bicycling, aerobics, exercising, etc. (Source: APA
7120	Equestrian sporting activities (Source: APA LBCS)
7130	Hockey, ice skating, etc. (Source: APA LBCS)
7140	Skiing, snowboarding, etc. (Source: APA LBCS)
7150	Automobile and motorbike racing (Source: APA LBCS)
7160	Golf (Source: APA LBCS)
7180	Tennis (Source: APA LBCS)
7190	Track and field, team sports (baseball, basketball, etc.), or other sports (Source: APA LBCS)
7200	Passive leisure activity (Source: APA LBCS)
7210	Camping (Source: APA LBCS)
7220	Gambling (Source: APA LBCS)
7230	Hunting (Source: APA LBCS)
7240	Promenading and other activities in parks (Source: APA LBCS)
7250	Shooting (Source: APA LBCS)
7260	Trapping (Source: APA LBCS)
7300	Flying or air-related sports (Source: APA LBCS)
7400	Water sports and related leisure activities (Source: APA LBCS)
7410	Boating, sailing, etc. (Source: APA LBCS)
7420	Canoeing, kayaking, etc. (Source: APA LBCS)
7430	Swimming, diving, etc. (Source: APA LBCS)
7440	Fishing, angling, etc. (Source: APA LBCS)
7450	Scuba diving, snorkeling, etc. (Source: APA LBCS)
7460	Water-skiing (Source: APA LBCS)
8000	Natural resources-related activities (Source: APA LBCS)
8100	Farming, tilling, plowing, harvesting, or related activities (Source: APA)
8200	Livestock related activities (Source: APA LBCS)
8300	Pasturing, grazing, etc. (Source: APA LBCS)
8400	Logging (Source: APA LBCS)

5.15.25. CodeLightingConfigurationType

Value	Description
ALSF-1	High Intensity Approach Lighting System - Configuration 1
ALSF-2	High Intensity Approach Lighting System - Configuration 2
APAP	Alignment of Element Systems

Value	Description
APBN	Airport Rotating Beacon
CLRBAR	Taxiway Clearance Bar Lights
CODEBEACON	Code Beacon
COURSE	Course Lights
F	Fixed
FL	Flashing (Sea Plane Navigation Buoy use only)
FL (2)	Group Flashing (Sea Plane Navigation Buoy use only)
FL (2+1)	Composite Group-Flashing (Sea Plane Navigation Buoy use only)
HLL	Hover Lane Light
HLLL	Hover Lane Limit Light
HPIL	Helipad Perimeter Inset Light
HPPEL	Helipad Perimeter Light (Elevated)
HPPLSF	Helipad Perimeter Light (Semiflush)
ISO	Isophase (Sea Plane Navigation Buoy use only)
L-804	Unidirectional elevated runway guard lights
L-850A	Bi directional or unidirectional runway in pavement light used for runway centerline, Land and Hold Short Operations (LAHSO).
L-850B	Unidirectional runway in pavement light used for runway touchdown zone and medium intensity approach light system applications.
L-850C	Bi directional runway in pavement light used for runway edge lights and displaced threshold applications.
L-850D	Bi directional or unidirectional runway in pavement lights used for runway threshold or runway end light applications.
L-850E	Unidirectional runway in pavement light used for runway threshold light and Medium Intensity Approach Light System applications
L-850F	Unidirectional runway in pavement lights white flashing lights used for LAHSO
L-852A	Bi directional or unidirectional taxiway centerline in pavement lights used for the straight sections of taxiways where operations are permitted when the Runway Visual Range (RVR) is greater than or equal to 1200 feet.
L-852B	Bi directional or unidirectional taxiway centerline in pavement lights for curved sections of taxiways where operations are permitted when the Runway Visual Range (RVR) is greater than or equal to 1200 feet.
L-852C	bi directional or unidirectional taxiway centerline in pavement lights for straight portions of taxiways where operations are permitted when the Runway Visual Range (RVR) is less than 1200 feet.
L-852D	Bi directional or unidirectional taxiway centerline in pavement lights used for curved portions of taxiways where operations are permitted when the Runway Visual Range is less than 1200 feet.
L-852E	Omni directional taxiway intersection in pavement lights where operations are permitted when the Runway Visual Range is greater than or equal to 1200 feet.
L-852E/F	Runway Guard Light in-pavement
L-852F	Omni directional taxiway intersection in pavement lights where operations are permitted when the Runway Visual Range is less than 1200 feet.
L-852G	Unidirectional Runway Guard in pavement lights

Value	Description
L-852G/S	Combination Runway Guard/Stop bar light in-pavement
L-852J	Bi directional taxiway centerline in pavement lights for the curved portions of taxiways where operations are permitted when the Runway Visual Range is greater than or equal to 1200 feet.
L-852K	Bi directional taxiway centerline in pavement lights for the curved portions of taxiway where operation are permitted when the Runway Visual Ranger is less than 1200 feet.
L-852S	Unidirectional in pavement Stop Bar lights
L-852T	Omni directional in pavement taxiway edge and Apron edge lights
L-853	Reflective Marker
L-854	Radio Controller (Pilot Controlled Lights)
L-860	Omni directional elevated runway edge lights for Visual Flight Rules (VFR) operations.
L-860E	Bi directional or unidirectional elevated runway threshold or runway end lights for Visual Flight Rules operations.
L-861	Omni directional or bi directional elevated runway edge or displaced threshold lights for non-precision Instrument Flight Rules (IFR) operations.
L-861E	Bi directional or unidirectional elevated runway threshold or runway end lights for non-precision Instrument Flight Rule operations.
L-861SE	Bi directional and unidirectional elevated runway threshold, runway end, and displaced threshold lights for non-precision Instrument Flight Rule operations
L-861T	Omni directional elevated taxiway and apron edge lights.
L-862	Bi directional elevated runway edge, threshold, and displaced threshold lights for precision Instrument Flight Rule operations.
L-862E	Bi directional or unidirectional elevated runway threshold, runway end, and displaced threshold lights for precision Instrument Flight Rule operations.
L-862S	Unidirectional elevated stop bar lights
L-880/L881	Precision Approach Path Indicator
LDIN	Lead In Lighting System
MALS	Medium Intensity Approach Lighting System
MALSF	Medium Intensity Approach Lighting System with Sequenced Flashing Lights
MALSR	Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (RAIL)
MO (A)	Morse Code (Sea Plane Navigation Buoy use only)
NONE	No lights
OBSCAT	Catenary Lighting
OBSDUAL	A combination of OBSRED and OBSWHT
OBSRED	Aviation red Obstruction Lights
OBSWHITE	Flashing White Obstruction Lights
OC	Occluding (Sea Plane Navigation Buoy use only)
ODALS	Omnidirectional Approach Lighting System
OTHER	Other
PAPI2	Precision Approach Path Indicator with 2 lights
PAPI4	Precision Approach Path Indicator with 4 lights

Value	Description
PORTABLE	Portable Lights
PVASI	Pulsating visual Approach Slope Indicator
Q	Quick (Flashing) (Sea Plane Navigation Buoy use only)
RAIL	Runway Alignment Indicator Lights
REIL	Runway End Identifier Lights
RWSL	Runway Status Lights
SALS	Short Approach lighting System
SMGCS	Surface Movement Guidance Control System
SSALF	Short Simplified Approach Light System with Sequenced Flashing Lights
SSALR	Simplified Short Approach Lighting System with Runway Alignment Indicator
TRCV	TriColor VASI
T-VASI	“T” Visual Approach Slope Indicator
TWYON_OFFLGT	Taxiway Lead on/off lights
VASI-12	Visual Approach Slope Indicator with 2 bars and 12 boxes
VASI-16	Visual Approach Slope Indicator with 3 bars and 16 boxes
VASI-2	Visual Approach Slope Indicator with 2 bars
VASI-2-2	Visual Approach Slope Indicator with 2 bars and 2 boxes
VASI-3	Visual Approach Slope Indicator with 3 bars

5.15.26.CodeLoadingBridgeType

Value	Description
ARM	Moveable Arm
PORTABLE_RAMP	Portable Ramp
PORTABLE_STAIRS	Portable Stairs
OTHER	Other

5.15.27.CodeLowVisibilityCategory

Value	Description
0	No low visibility operation supported
1	Supports ILS CAT I low visibility operations
2	Supports ILS CAT II III low visibility operations

5.15.28.CodeMarkingFeatureType

Value	Description
AIMING_POINT	Runway Aiming Point (Geometry Type: Polygon) [Source: AC 150/5340-1]
ALTBAND	Alternating bands of aviation orange and white [Source AC 70/7640-1]
APRON_SIGN	Surface painted apron position/entrance sign (Geometry Type: Polygon) [Source: AC 150/5340-1]
ARROW	Arrows identify the displaced threshold area to provide centerline guidance for takeoffs and rollouts (Geometry Type: Line) [Source: AC 150/5340-1]
ARROW_HEAD	Arrow heads are used in conjunction with a threshold bar to further highlight the beginning of a runway (Geometry Type: Line) [Source: AC 150/5340-1]

Value	Description
CHECKERBOARD	Checkerboard obstruction marking pattern [Source AC 70/7640-1]
CHEVRON	A marking used to designate blast pads and other areas that are not suitable for aircraft (Geometry Type: Line) [Source: AC 150/5340-1]
DEMARICATION	Demarcation Bar (Geometry Type: Line) [Source: AC 150/5340-1]
DIR_SIGN	Surface painted taxiway direction signs (Geometry Type: Polygon) [Source: AC 150/5340-1]
GATE_LINE	All painted taxilines covering a parking stand area are regarded as stand guidance lines and will be individual objects in the database. There may be several stand guidance taxilines leading to an aircraft stand to accommodate different aircraft types.
GATE_SIGN	Surface painted gate position signs (Geometry Type: Polygon) [Source: AC 150/5340-1]
HOLD_SIGN	Surface painted holding position signs (Geometry Type: AC 150/5340-1)
ILS_HOLD	Holding position markings for Instrument Landing Systems (Geometry Type: Polygon) [Source: AC 150/5340-1]
INTERSECTION_HOLD	Holding position marking for taxiway/taxiway intersections (Geometry Type: Line) [Source: AC 150/5340-1]
LAHSO	Marking associated with a Land And Hold Short Operations (LAHSO)
LOCATION_SIGN	Surface painted taxiway location signs (Geometry Type: Polygon) [Source: AC 150/5340-1]
NON_MOVE_AREA	Non-movement area marking (Geometry Type: Line) [Source: AC 150/5340-1]
NONE	No marking(s)
OTHER	Other markings not listed
OTHER_LINE	Other markings suitable for representation as a line
OTHER_POLYGON	Other markings suitable for representation as a polygon
PERM_CLOSED	Markings for permanently closed runways and taxiways (Geometry Type: Polygon) [Source: AC 150/5340-1]
POS_SIGN	Geographic position markings (Geometry Type: Polygon) [Source: AC 150/5340-1]
RWY_CL	Runway Centerline (Geometry Type: Line) [Source: AC150/5340-1]
RWY_HOLD	Runway holding position markings on Runways (Geometry Type: Polygon) [Source: AC 150/5340-1]
RWY_ID	Runway Designation Marking (Geometry Type: Polygon) [Source: AC 150/5340-1]
RWY_SHD	Runway shoulder markings (Geometry Type: Line) [Source: AC 150/5340-1]
RWY_THRSH	Runway Threshold Marking (Geometry Type: Polygon) [Source: AC 150/5340-1]
SIDE_STRP	Runway Side Stripe Marking (Geometry Type: Line) [Source: AC 150/5340-1]
SOLID	Solid pattern obstruction marking [Source AC 70/7640-1]
TDZ_MARK	Runway Touchdown Zone Marking (Geometry Type: Polygon) [Source: AC 150/5340-1]

Value	Description
TEMP_CLOSED	Markings for temporarily closed runways and taxiways (Geometry Type: Line) [Source: AC 150/5340-1]
THRSH_BAR	Runway Threshold Bar (Geometry Type: Polygon) [Source: AC 150/5340-1]
TIEDOWN	Aircraft tiedown
TWY_CL	Taxiway Centerline (Geometry Type: Line) [Source: AC 150/5340-1]
TWY_EDGE	Taxiway edge marking (Geometry Type: Line) [Source: AC 150/5340-1]
TWY_HOLD	Runway hold position markings on taxiways (Geometry Type: Polygon) [Source: AC 150/5340-1]
TWY_SHD	Taxiway shoulder marking (Geometry Type: Line) [Source: AC 150/5340-1]
VEHICLE	Vehicle roadway markings (Geometry Type: Line) [Source: AC 150/5340-1]

5.15.29.CodeMonumentType

Value	Description
1ST_ORDER_CLASS_I	Meets the standards and specifications for geodetic control network accuracy according to the Federal Geodetic Control Subcommittee [NGS]
1ST_ORDER_CLASS_II	Meets the standards and specifications for geodetic control network accuracy according to the Federal Geodetic Control Subcommittee [NGS]
2ND_ORDER_CLASS_I	Meets the standards and specifications for geodetic control network accuracy according to the Federal Geodetic Control Subcommittee [NGS]
2ND_ORDER_CLASS_II	Meets the standards and specifications for geodetic control network accuracy according to the Federal Geodetic Control Subcommittee [NGS]
3RD_ORDER_NO_TABLET	Meets the standards and specifications for geodetic control network accuracy according to the Federal Geodetic Control Subcommittee [NGS]
3RD_ORDER_WITH_TABLET	Meets the standards and specifications for geodetic control network accuracy according to the Federal Geodetic Control Subcommittee [NGS]
A_Order	Meets the standards and specifications for geodetic control network accuracy according to the Federal Geodetic Control Subcommittee [FGCS]
B_Order	Meets the standards and specifications for geodetic control network accuracy according to the Federal Geodetic Control Subcommittee [FGCS]
BM	Benchmark is a location whose elevation and horizontal position has been surveyed as accurately as possible. Benchmarks are designed for use as reference points, and are usually marked by small brass plates

Value	Description
FOUND_CLOSING_CORNER	A found corner is a corner whose original or restored monument or mark is recovered, or whose position is definitely established by one or more witness corners or monuments
FOUND_SECTION_CORNER	A found corner is a corner whose original or restored monument or mark is recovered, or whose position is definitely established by one or more witness corners or monuments
MEANDER_CORNER	A corner established where a township line, section line, or other survey intersects the bank of a navigable stream or other meanderable body of water [USGS, 1996, Part 5: Public Land Survey System]
SPOT	A point with a measured vertical position of less than third order accuracy, measured relative to a reference datum [USGS, 2001, Part 7: Hypsography]
UNMONUMENTED	Indicates that no permanent marker has been placed
WEAK_CORNER	Corners established by the USDA Forest Service that have been found but their location has not been tied to their true ground position [USGS, 2003]
WITNESS_CORNER	A monumented station on a line of the survey that is used to perpetuate an important location more or less remote from and without special relation to any regular corner [USGS, 1996, Part 5: Public Land Survey System]

5.15.30.CodeNavaidEquipmentType

Value	Description
ARSR	Air Route Surveillance Radar
ASR	Airport Surveillance Radar
DF	Direction Finding Equipment
DME	Distance Measuring Equipment
FM	Fan Marker
FMH	Fan Marker located with a radio beacon
GS CE	Glide Slope Capture Effect
GS EF	Glide Slope End Fire
GS NR	Glide Slope Null Reference
GS SB	Glide Slope Side Band
LOC	Localizer
MLSAZ	Microwave Landing System Azimuth Antenna
MLSDME	Microwave Landing System DME
MLSEL	Microwave Landing System Elevation Antenna
MSBLS-AZ	Microwave Scan Beam Landing System Azimuth
MSBLS-DME	Microwave Scan Beam Landing System Distance Measuring Equipment
MSBLS-EL	Microwave Scan Beam Landing System Elevation
MTI	Moving Target Indicator Reflector
NDB/C	Nondirectional Radio Beacon -- Compass Locator
NDB/H	Nondirectional Radio Beacon -- High Frequency
NDB/M	Nondirectional Radio Beacons/Medium HF

Value	Description
NDB/U	Nondirectional Radio Beacons/Ultra HF
PAR	Precision Approach Radar
SDF	Simplified Direction Finding Equipment
SECRA	Secondary Radar Antenna
TACAN	Tactical Air Navigation
TDR	Touchdown Reflector
TLS-APGS	Transponder Landing System Approach Glideslope
TLS-LOC	Transponder Landing System – Localizer
VISUAL	Used to identify the navaid as a visual system
VOR	VHF Omnidirectional Range
VORTAC	VOR and collocated TACAN
VOT	VOR Test Facility

5.15.31.CodeNavaidSystemType

Value	Description
DF	Direction Finder
ILS	Instrument Landing System
MLS	Microwave Landing System
MSBLS	Microwave Scan Beam Landing System
NDB/C	Nondirectional Radio Beacon -- Compass Locator
NDB/H	Nondirectional Radio Beacon -- High Frequency
NDB/M	Nondirectional Radio Beacons/Medium HF
NDB/U	Nondirectional Radio Beacons/Ultra HF
PAR	Precision Approach Radar
TLS	Transponder Landing System

5.15.32.CodeObstacleSource

Value	Description
AD	Airport Design and Planning
AF	FAA Tech Ops Field Survey
AO	Airports Field Office
DD	Digital Terrain Elevation Data
DI	U.S. Department of Interior Maps
DM	USGS Digital Elevation Model
EO	Estimated by Airport Owner
F77	Part 77 Analysis
FI	Flight Inspection
NV	Non-Vertically Guided Airport Airspace Analysis
OF	Digital Obstacle File (FAA)
OR	Other Source not named
RS	Remote Sensed
SE	Spot Elevations
SR	Shuttle Radar Terrain Model
ST	State Coded
SV	Field Survey
TE	TERPS Analysis
VG	Vertically Guided Airport Airspace Analysis
WW	Worldwide DoD

5.15.33.CodeObstacleType

Value	Description
AERIAL CABLEWAY	
AERIAL CABLEWAY PYLON	
AGRICULTURE EQUIPMENT	Generic for any agricultural equipment
AIRCRAFT	Generic for a parked or moving aircraft
AMUSEMENT PARK STRUCTURE	
ANTENNA	
AQUEDUCT	
ARCH	
ATHLETIC FIELD	Generic for any type of athletic field or stadium
BILLBOARD	
BLAST FURNACE	
BLEACHERS	
BRIDGE SUPERSTRUCTURE	Generic for larger bridges such as cable stayed bridges etc.
BRIDGE TOWER	
BRIDGE/OVERPASS/VIADUCT	Generic for any type of bridge
BUILDING	Generic for any type of building
BUSH	Generic for bushes and other low growing vegetation
CABLE CAR/RAILWAY	
CATALYTIC CRACKER	An oil refinery unit in which the cracking of petroleum takes place in the presence of a catalyst
CATENARY	The curve formed by a perfectly flexible, uniformly dense, and inextensible cable suspended from its endpoints.
CHIMMNEY/SMOKESTACK	
CHURCH	Generic for houses of worship
COMMUNICATION BUILDING	
COMMUNICATION TOWER	
CONTROL TOWER	
CONVEYOR	
COOLING TOWER	A large tower or similar structure typically attached to a power plant through which water is circulated to lower its temperature by partial evaporation
CRANE	
DAM	
DEBRIS/RUINS	
DIRT PILE	
DOME	
DREDGE/POWERSHOVEL /DRAG	
ELEVATOR	
FLAGPOLE	
FLARE PIPE	
FORTIFICATION OR FORT	
GRAIN BIN/SILO	
GRAIN ELEVATOR	
HOPPER	
HORIZONTAL POINT	Point of known horizontal position

Value	Description
INTERSTATE	Interstate highways with 17 foot vehicle allowance added to the features elevation
LAUNCHPAD	
LIGHT RAILWAY	Generic for people mover systems serving airports
LIGHT SUPPORT STRUCTURE	
LIGHT VESSEL/LIGHTSHIP	
LIGHTHOUSE	
MONUMENT	Generic for historical or cultural monuments
NATURAL HIGH POINT	Generic for high terrain features
NAVAID	Used when defined as an obstacle
NUCLEAR REACTOR	
OFF-SHORE PLATFORM	
PARKING LOT	
PLANT	Generic for manufacturing facilities
POLE	Generic for utility or light poles providing local service
POWER PLANT	
POWER TRANSMISSION LINE	Larger Tower high power Utility lines
POWER TRANSMISSION PYLON	Larger tower high power utility structures
PRIMARY ROAD	Non-Interstate roads with 15 foot vehicle allowance added to the features elevation
PROCESING/TREATMENT PLANT	
RAILROAD	Railroad track with 23 foot vehicle allowance added to the features elevation.
REFINERY	
RIG/SUPERSTRUCTURE	
ROAD SIGN	Interstate highway overhead signs
SCRUB	
SECONDARY ROAD	Local city, county state roads with 10 foot vehicle allowance added to the features elevation
SHIP	Ship underway
SHIP STORAGE	Ship manufacturing or storage facilities
SIGN	Generic for any type of sign other than interstate or street signs
SKI JUMP	
SKI LIFT	
SKI PYLON	
SKYSCRAPER	
SPIRE	
STACK	
STADIUM	
STEEPLE	
STORAGE DEPOT	
STREET SIGN	Signs used to control traffic or provide direction information other than interstate signs
SUBSTATION/TRANSFORMER	
TANK	Generic for other types of tanks
TELEPHONE LINE	

Value	Description
TELEPHONE PYLON/POLE	
TETHERED BALLOON	
TOWER (NON-COMMUNICATON TOWERS)	
TRAFFIC LIGHT/SIGNAL	
TRAMWAY	
TREE	Generic for a single or small group of trees
TREE OUTLINE	Dense area of trees
UTILITY LINE	Generic for local utility service
VEGETATION	
VEHICLE	Generic for any type of vehicle
VERTICAL POINT	Point of known elevation
VERTICAL STRUCTURE	Generic for items not classified otherwise in this list
WALL	
WATER TOWER	Generic for water towers
WIND MOTOR	
WINDMILL	Single windmill
WINDMILL FARMS	Multiple Windmills located close together

5.15.34. CodeObstructionAreaType

Value	Description
AG EQUIP	Agricultural equipment
BUILDING	
GROUND	
MOBILE CRANE	
OTHER	
TREE	
URBAN	
VESSEL	

5.15.35. CodeOffsetDirection

Value	Description
CL	On centerline
L	Offset to the left
R	Offset to the right

5.15.36. CodeOisSurfaceCondition

Value	Description
PRIMARY	Identifies an obstructing area solely within a single surface.
SUPPLEMENTARY	Used to identify when an obstructing area covers more than a single OIS.

5.15.37. CodeOisSurfaceType

Value	Description
AAAA	Approach Surfaces
AAAC	Conical Surface
AAAH	Horizontal Surface

Value	Description
AAAP	Primary Surfaces
AAAT	Transitional Surfaces
AAAV	Vertical Guidance Protection Surface
APRC77	14 CFR Part 77 Approach Surfaces
CONL77	14 CFR Part 77 Conical Surface
DEPT	Departure Analysis
HORZ 77	14 CFR Part 77 Horizontal Surface
OEIA	One Engine Inoperative Analysis
PRIM77	14 CFR Part 77 Primary Surface
TERP	TERPS Surfaces
TRNS77	14 CFR Part 77 Transitional Surfaces

5.15.38.CodeOisZoneType

Value	Description
APPROACH	
CONICAL	
HORIZONTAL	
PRIMARY	
TRANSITION	

5.15.39.CodeOperationsType

Value	Description
CIVIL	Civil operations only
JOINT	Joint military and civil operations
MIL	Military operations only

5.15.40.CodeOwner

Value	Description
A	Air Force
B	Public
C	Coast Guard
E	FAA F&E Projects
F	FAA (Other Than F&E)
H	International Public
I	International
J	International Private
K	International Military
L	International (U.S. Aid Funds)
N	Navy
O	Other (Specify In Metadata)
P	Private
R	Army
S	State
X	Special

5.15.41.CodePointType

Value	Description
AIRPORT_ELEVATION	Indicates the point of highest elevation on the landing surface of the airport.
ARP	Point identified is computed as the Airport reference point for the airport
ASOS	Location of the Automated Surface Observing System
AWOS	Location of the Aviation Weather Observing System
CENTERLINE_POINT	A point collected along the runway centerline whose location is variable based on collection method etc. Typically this point is used for runway profile points.
DISPLACED_THRESHOLD	Point provides the location of the displaced threshold for a runway
HELIPAD_REFERENCE_POINT	The point defined as the HelipadReferencePoint
IMAGERY	Imagery Control Point
OTHER	
PACS	Point referenced is the airport's Primary Airport Control Station
RUNWAY_CONTROL_POINT	Point provides the location and elevation of a specific point on the runway such as the point abeam an offset navaid or the intersection point of two runways defined in this standard as required information.
SACS	Point referenced is the airport's Secondary Airport Control Station
SAWS	Location of the Stand Alone Weather System
SEGMENTED_CIRCLE	Location of the airport segmented circle
SPOT_ELEVATION	Spot Elevation Point
STOPWAY_END	Point provides the end point for the stopway
TDZE	Touchdown Zone Elevation (TDZE) - Indicates the highest point along the runway centerline within the first 3000 feet from the threshold.
TEMPORARY_SURVEY_MARK	Temporary Survey Mark
VERTICAL_OBJECT	Point reference is a VerticalPointObject not classified by another feature but of possible significance
WIND_CONE	Location of the wind cone

5.15.42.CodeProjectStatus

Value	Description
IN_PROGRESS	In progress
PLAN_ON_FILE	Indicates a project that is part of a long term (11 + years) plan
PLANNED	Indicates a project that is a part of a short term (0 - 5 year) plan
PROPOSED	Indicates a project that is part of a midterm (6 - 10 year) plan

5.15.43.CodeRecoveredCondition

Value	Description
Disturbed but not missing	Surface mark destroyed (do not classify a mark as destroyed unless the actual disk is found and returned to the setting agency).
Good	Mark recovered in good condition
Other	

Value	Description
Poor	Mark recovered in poor condition and should be considered for replacement
Set now (for a first time description)	To identify a condition not available in the list.
Surface mark destroyed	Underground mark destroyed (do not classify a mark as destroyed unless the actual disk is found and returned to the setting agency).
Underground mark destroyed	Newly established mark

5.15.44.CodeRouteType

Value	Description
ALLEY	Hard-surface or loose-surface narrow street or passageway primarily found between or behind buildings
CITY	City or subdivision streets
COUNTY	Hard-surface roads not included in a higher class and improved, loose-surface roads passable in all kinds of weather. These roads are adjuncts to the primary and secondary highway systems. These roads are under the jurisdiction and maintained by county authorities
FIFTHCLASS	Fifth Class Unimproved roads passable only with 4-wheel-drive vehicles [USGS, 2001, Part 3: Transportation]
FIRSTCLASS	
FOURTHCLASS	Unimproved roads which are generally passable only in fair weather and used mostly for local traffic. Also included are driveways, regardless of construction [USGS, 2001, Part 3: Transportation]
INTERSTATE	First Class - Hard-surface highways including Interstate and U.S. numbered highways (including alternates), primary State routes, and all controlled access highways [USGS, 2001, Part 3: Transportation]
JEEPTRAIL	Unimproved roads passable only with 4-wheel-drive vehicles
LOCAL	Local jurisdiction roads
NATIONAL	First Class - Hard-surface highways including Interstate and U.S. numbered highways (including alternates), primary State routes, and all controlled access highways [USGS, 2001, Part 3: Transportation]. E.g. U.S. 66
OTHER	Other class of road
SECONDCCLASS	Second Class Hard-surface highways including secondary State routes, primary county routes, and other highways that connect principal cities and towns, and link these places with primary highway system [USGS, 2001, Part 3: Transportation]
STATE	Hard-surface State routes under the control and jurisdiction of State authorities
THIRDCLASS	Hard-surface roads not included in a higher class and improved, loose-surface roads passable in all kinds of weather. These roads are adjuncts to the primary and secondary highway systems. Also included are important private roads such as main logging or industrial roads which serve as connecting links to the regular road network [USGS, 2001, Part 3: Transportation]
TRAIL	Unimproved roads passable only with 4-wheel-drive vehicles, snowmobiles, motocross bikes, and so forth

5.15.45. CodeRunwayProtectionAreaType

Value	Description
CWY	Clearway
ILS	ILS protection area. Protects ILS signal distortion by forbidding large objects in the area.
LIGHT	Light Plane Surface
OTHER	Other
SNOW	Area protected from snow accumulation
STOPWAY	A defined rectangular area on the ground at the end of take-off run available prepared as a suitable area in which an aircraft can be stopped in the case of an abandoned take-off.
VGSI	Visual Glide Slope Indicator (VGSI) protection area. Protects VGSI signal coverage by forbidding objects in the area.

5.15.46. CodeSamplePointLocation

Value	Description
AS	Air sample
BH	Borehole
BIO	Biological sample
GWS	Ground water sample
OTHER	Other
SEDS	Sediment sample
SOIL	Soil sample
SOLM	Solid material sample
SURF	Surface water sample
WAS	Waste water sample
WL	Well

5.15.47. CodeSegmentType

Value	Description
BEGIN	Beginning section of the segment
CONNECTING	Intermediate segments connecting beginning and ending, beginning and intersection, or intersection and end.
END	Ending section of the segment
INTERSECTION	Defined intersection of multiple segments

5.15.48. CodeShorelineType

Value	Description
APPARENT	Apparent edge of vegetation. Representation of the vegetative border is considered approximate because this line cannot be accurately identified on the ground, due to intricate growth patterns and change over time
INDEFINITE	Conditions prevent the feature from being confidently positioned. Horizontal data are confidently positioned within 0.02", at map scale, of the true ground position. Vertical data are confidently positioned within one-half contour interval of true ground position
MEAN_HIGH_LEVEL	The average limit of dry land during periods of highest water level (for example, high tide)
MEAN_LOW_LEVEL	The average limit of dry land during periods of lowest water level (for example, low tide)

Value	Description
MEAN_SEA_LEVEL	The arithmetic mean of hourly heights observed over some specified time

5.15.49.CodeShoulderType

Value	Description
O	Other airfield pavement with a shoulder
R	Runway
T	Taxiway

5.15.50.CodeSignTypeCode

Value	Description
CARGO	Inbound Destination Sign - areas set aside for cargo handling
FBO	Inbound Destination Sign - fixed base operator
FUEL	Inbound Destination Sign - areas where aircraft are fueled or serviced
HOLD_INSTRUMENT_LANDING_SYSTEM	Holding Position Sign for ILS Critical Areas
HOLD_RUNWAY_APPROACH	Holding Position Sign for Runway Approach Areas
HOLD_RUNWAY_INTERSECTION	Holding Position Sign for Runway/Runway Intersections
INFO	Signs installed on the airside of an airport, other than taxiway guidance signs or runway distance remaining signs.
MIL	Inbound Destination Sign - areas set aside for military aircraft
NO_ENTRY	No Entry Sign
OUTBOUND_DESTINATION	Outbound Destination Sign
PAX	Inbound Destination Sign - areas set aside for passenger handling
ROAD_STOP	Stop sign in areas where vehicle roadways intersect runways or taxiways
ROAD_YIELD	Yield sign in areas where vehicle roadways intersect runways or taxiways
RSA_RUNWAY_APPROACH	Runway Safety Area/OFZ and Runway Approach Boundary Sign
RUNWAY_DISTANCE_REMAINING	Sign that designates the remaining runway distance to pilots during takeoff and landing operations
RUNWAY_EXIT	Runway Exit Sign
RUNWAY_LOCATION	Runway Location Sign
TAXIWAY_DIRECTION	Taxiway Direction Sign
TAXIWAY_END	Taxiway Ending Marker
TAXIWAY_LOCATION	Taxiway Location Sign
TERMINAL	Inbound Destination Sign - gate positions at which aircraft are loaded and unloaded

5.15.51.CodeStatus

Value	Description
ABANDONED	Abandoned
ACTIVE	Active surface
AIRSPACED	A favorable airspace determination has been issued
AS_BUILT	
BROKEN	Broken or rough surface
CLOSED	Closed surface
CONDEMNED	
DEMOLISHED	
ENV_CLEARED	All required environmental actions and documentation described in FAAO 5050.4 "National Environmental Policy Act (NEPA) have been satisfied
FAILED_AID	Failure or irregular operation of visual aides
INACTIVE	
LIMITED	Limited operations]
LONG_TERM	Indicates the feature is part of a long term (11 + years) plan
MEDIUM_TERM	Indicates the feature is part of a midterm (6 - 10 year) plan
NON_OPERATIONAL	Non-operational
OCCUPIED	
OPERATIONAL	Operational (fully)
OTHER	
PARKED	Parked or disabled aircraft
PERMANENT	
PORTABLE	
RELEASED	Used to track land released by the airport
S_POWER	Secondary power supply in operation
SEMI_PERMANENT	
SHORT_TERM	Indicates the feature is part of a short term (0 - 5 year) plan
TBD	To be determined
TEMPORARY	
TERMINATED	Terminated no longer used
UNDER_CONSTRUCTION	Planned or under construction
UNKNOWN	
UNOCCUPIED	
WORK_IN_PROGRESS	Construction or work in progress

5.15.52.CodeStructureType

Value	Description
APARTMENT	Apartment building
APM_STATION	Automated People Mover station
APM_TRACK	Automated People Mover tracks
ARENA	Sports Arena or facility
ARFF_STATION	Aircraft Rescue and Firefighting station
ATC_FACILITY	Combined or Single (other than the airport control tower) Air Traffic Control Facility
ATC_TOWER	Air Traffic Control Tower
BANK	Bank
BARN	barn

Value	Description
CAPITOL	Capitol
CHURCH	church/temple
CITY_HALL	City Hall
COMMUNITY_CENTER	Community Center
CONCERT_HALL	Concert Hall
CONDO	condominium
COURT_HOUSE	Court House
DRY_STORAGE_DOCK	Dry Storage Dock
DUPLEX	house, duplex
DWELLING	dwelling
EARTHWORKS	Earthworks
FBO	Fixed Base operator
GARAGE	A structure used for the maintenance, storage, and display of motor vehicles
GRAIN_ELEVATOR	Grain Elevator
HANGAR	A structure used for the maintenance, storage, and display of aircraft
HIGHRISE	A multi-story structure with at least 12 floors or 35 meters (115 feet) in height
HOSPITAL	Hospital
HOUSE	house, single family
JAIL_OR_PRISON	Jail or Prison
MEDICAL_CENTER	Medical Center
MEMORIAL	Memorial
MOBILE_HOME	Mobile home or trailer
MUSEUM	Museum.
OFFICE	office building
OFFSHORE_PLATFORM	Offshore Platform
OTHER	Other
PARKING_GARAGE	Parking garage or facility
POLICE	Police Station
POST_OFFICE	Post Office
POWER_PLANT	A facility used in the production and distribution of electrical power
PUBLIC_TRANSPORTATION	Public transportation facility (buses, taxi, etc.)
RADIO_FACILITY	Radio Facility
RAILROAD_STATION	Railroad Station
RAIN_SHED	Rain Shed
RENTAL_FACILITY	Rental Car facility
SCHOOL	Any building or structure whose primary purpose is education
SECURITY	Security Office
SKYSCRAPER	Office or housing where the building clearly stands out above its surrounding built environment and significantly changes the overall skyline of that particular city
SNOW_SHED	A structure used for the storage, maintenance of Snow removal equipment
STORAGE_FACILITY	A structure used for any type of storage

Value	Description
TBD	to be determined
TERMINAL	Airport Terminal building
THEATER	Theater (any type)
TOWER	Tower
TOWN HALL	Town Hall
TOWNHOUSE	townhouse
WATER TANK	Water Tank

5.15.53.CodeSurfaceCondition

Value	Description
FAIR	Fair condition
GOOD	Good condition
POOR	Poor condition
UNSAFE	Surface is deemed unsafe for operations
OTHER	

5.15.54.CodeSurfaceMaterial

Value	Description
AG	Asphalt grooved
Ags	Asphalt and turf
ANG	Asphalt ungrooved
BE	Bare earth
CA	Concrete and asphalt
CG	Concrete grooved
CGS	Concrete and turf
CNG	Concrete ungrooved
DS	Desert/Sand
DT	Dirt
EMAS	Engineered Material Arresting System
FW	Fresh Water
GR	Gravel
GS	Turf
SI	Snow/Ice
SW	Salt Water
W	Water

5.15.55.CodeSurfaceType

Value	Description
P	Specially prepared hard surface—Paved
S	Specially prepared hard surface—Unpaved
U	Not a specially prepared hard surface

5.15.56.CodeTaxiwayType

Value	Description
AIR TAXIWAY	Air taxiway
AIR TLANE	Air taxilane
APRON	Apron taxiway
BYPASS	Bypass holding bay

Value	Description
CROSS_OVER	Crossover taxiway
EAT	End Around Taxiway
ENTER_EXIT_TAXIWAY	Entrance and Exit taxiway
EXIT	Exit/turnoff taxiway
FASTEXIT	Rapid exit/turnoff taxiway
GATE_TLANE	Gate/stand taxilane
GND	Ground taxiway
HOLDING	Holding bay
INLINE	Inline taxiway
OTHER	Those not listed here
PARALLEL	Parallel taxiway
STUB	Stub taxiway
TLANE	Taxilane
TURN_AROUND	Turn around taxiway

5.15.57.CodeThresholdType

Value	Description
Displaced	An indication that the landing threshold is located at a point other than the runway end
Normal	An indication that the landing threshold corresponds to the end of the runway

5.15.58.CodeUseCode

Value	Description
C	Compass Locator
H	High Altitude for VOR/VORTAC/TACAN; All Altitudes for NDB at 50–90 watts
HH	All Altitudes for NDB; 2000 watts or more
L	Low Altitude
MH	All Altitudes for NDB; Under 50 watts
T	Terminal

5.15.59.CodeUtilityType

Value	Description
COMMUNICATION_SYSTEM	Telephone, telegraph, cable, video and voice transmission lines
COMPRESSED_AIR_SYSTEM	The components of a compressed air system.
CONTROL_MONITORING_SYSTEM	The components of an electronic monitoring and control system (EMCS) including cables, devices, etc.
ELECTRICAL_EXT_LIGHT	The components of an electrical exterior lighting system including cables, switches, devices, transformers, etc. Does not include airfield, NAVAID or approach lighting.
ELECTRICAL_SYSTEM	The components of an electrical distribution system including cables, switches, devices, motors, transformers, etc.
FUEL_SYSTEM	The components of a fuel distribution system consisting of pipes, fittings, fixtures, pumps, tanks, etc.

Value	Description
GENERAL_UTILITY	The components of utility system which are universal in use and purpose and do not belong to a specific utility.
HEAT_COOL_SYSTEM	The components of a heating and cooling distribution system consisting of pipes, fittings, fixtures, etc.
INDUSTRIAL_SYSTEM	The components of an industrial waste collection system including pipes, fittings, fixtures, tanks, lagoons, etc.
NATURAL_GAS_SYSTEM	The components of a natural gas distribution system consisting of pipes, fittings, fixtures, etc.
NUCLEAR_REACTOR	The components of a nuclear system such as nuclear fuel, Nuclear research, nuclear waste, and nuclear weapons.
POWER_SYSTEM	Power transmission lines
SALTWATER_SYSTEM	The components of a salt water collection system.
STORM_SYSTEM	The components of a storm drainage collection system including pipes, fittings, fixtures, etc.
TRANSMISSION_LINE	Objects related to the long distance transmission of gas, oil, or hazardous liquid.
WASTEWATER_SYSTEM	The components of a wastewater collection system including pipes, fittings, fixtures, treatment plants, collection locations, etc.
WATER_SYSTEM	The components of a water system including pipes, fittings, fixtures, treatment plants, etc.

5.15.60.CodeVerticalStructureMaterial

Value	Description
COMPOSITION	Composition
CONCRETE	Concrete
METAL	Metal
ROCK	Rock
STONE_BRICK	Stone/brick
WOOD	Wood

5.15.61.CodeZoneType

Value	Description
5_YEAR	Areas subject to 5 year flooding.
10_YEAR	Areas subject to 10 year flooding.
15_YEAR	Areas subject to 15 year flooding.
25_YEAR	Areas subject to 25 year flooding.
50_YEAR	Areas subject to 50 year flooding.
100_YEAR	Areas subject to 100 year flooding.
500_YEAR	Areas subject to 500 year flooding.
GENERAL	Areas prone to flooding in general.
PROJECTED	Areas expected to be subject to flooding in the future.
OTHER	Other

5.15.62.CodeZoningClass

Value	Description
COMMERCIAL	Areas which are zoned for merchandising, shopping, or other commercial development. (Source SDSFIE)
INDUSTRIAL	Areas which are zoned for factory, manufacturing, or other industrial development. (Source SDSFIE)
QUASI_PUBLIC	Areas which are zoned public although under private ownership or control. (Source SDSFIE)
RESIDENTIAL	Areas which are zoned for housing or residential development. (Source SDSFIE)
OTHER	Other Zoning

Intentionally left blank.