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

<table>
<tr><td colspan="5">Definition: Definition of feature.</td></tr>
<tr><td>Feature Group</td><td colspan="4">The Feature Group of the element.</td></tr>
<tr><td>Feature Class Name</td><td colspan="4">The proper name of the Feature Class.</td></tr>
<tr><td>Feature Type</td><td colspan="4">The compliant geometry of element.</td></tr>
<tr><td colspan="5">CADD Standard Requirements</td></tr>
<tr><td>Layer/Level</td><td colspan="4">Description</td></tr>
<tr><td>Compliant layer name.</td><td colspan="4">Compliant layer description. [Siting]</td></tr>
<tr><td></td><td>Color</td><td>Line type</td><td>Line Weight</td><td>Symbol</td></tr>
<tr><td>AutoDesk Standards</td><td>Color code AutoCAD</td><td rowspan="2">Line type required</td><td>Line weight AutoCAD</td><td rowspan="2">Symbol type is user defined</td></tr>
<tr><td>MicroStation Standards</td><td>Color code MicroStation</td><td>Line weight MicroStation</td></tr>
<tr><td>Information Assurance Level</td><td colspan="4">Security level credential</td></tr>
<tr><td rowspan="3">Equivalent Standards</td><td>AIXM</td><td colspan="3">AIXM equivalent of feature.</td></tr>
<tr><td>FGDC</td><td colspan="3">FGDC equivalent of feature.</td></tr>
<tr><td>SDSFIE</td><td colspan="3">SDSFIE equivalent of feature.</td></tr>
<tr><td>Documentation and Submission Requirements</td><td colspan="4">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.</td></tr>
<tr><td>Related Features</td><td colspan="4"></td></tr>
<tr><td colspan="5">Data Capture Rules: Description of proper collection limits and requirements for feature class element.</td></tr>
<tr><td>Monumentation</td><td colspan="4">Monumentation requirements.</td></tr>
<tr><td rowspan="2">Survey Point Location</td><td colspan="2">Horizontal</td><td colspan="2">Vertical</td></tr>
<tr><td colspan="2">Description of specific HSP location.</td><td colspan="2">Description of specific VSP location.</td></tr>
</table>

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

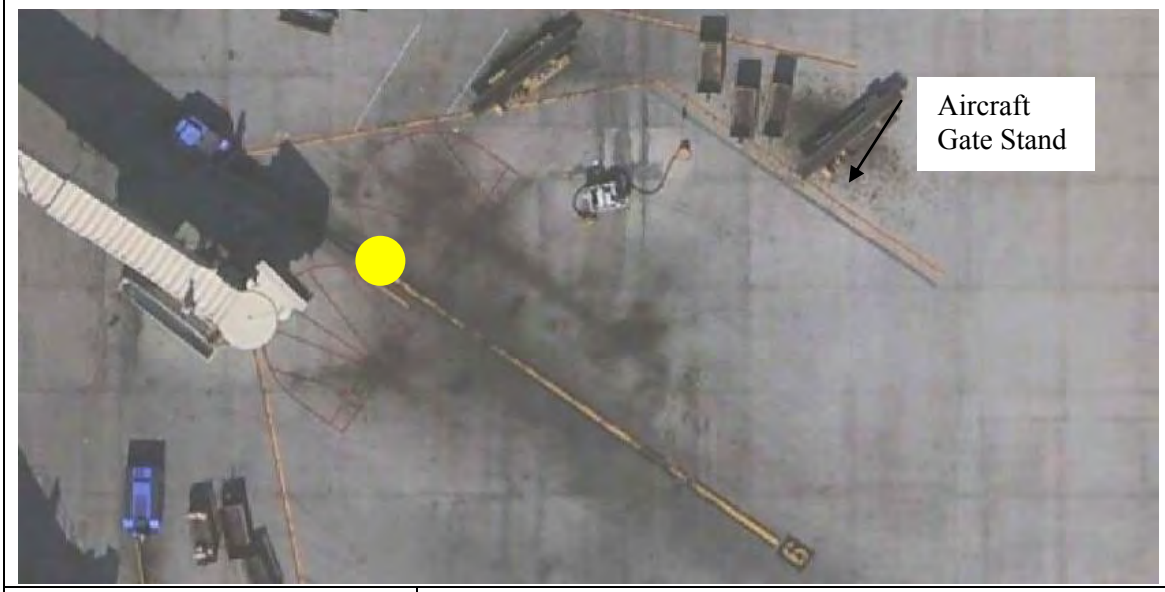
5.4. Group: AIRFIELD

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**	*ApronElement*		Core
	FGDC	*AircraftGateStand*		
	SDSFIE	*airfield_surface_site*		
Documentation and Submission Requirements	No documentation is required for this feature.			

Related Features	

Data Capture Rules: *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.*



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**	*NonMovementArea*		Core
	FGDC	*AircraftNonMovementArea*		
	SDSFIE	*None*		
Documentation and Submission Requirements	None			

Related Features	

Data Capture Rules: *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.*

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**	
		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.
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

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]

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: *Collect a closed polygon to the greatest horizontal extents as defined by the airport security plan.*				
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
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-RNWY-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**	*LightElementExtension*	Extension
	FGDC	*AirfieldLight*	Extension
	SDSFIE	*airfield_light_point*	
Documentation and Submission Requirements	None		
Related Features			

Data Capture Rules: *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.*

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))	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**	*ArrestingGear*		Core
	FGDC	*ArrestingGear*		
	SDSFIE	*airfield_linear_safety_feature_line*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *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.*				
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
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**	*Frequency*		Core
	FGDC	*FrequencyArea*		
	SDSFIE	*communications_groundwave_polygon_area*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *Collect a closed polygon to its greatest extents.*				
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
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**	*PassengerLoadingBridge*		Core
	FGDC	*PassengerLoadingBridge*		
	SDSFIE	*None*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				

Data Capture Rules: *Outline of the boarding Bridge with the vertical on the top of the bridge.*

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**	*RunwayMarking*		Core
	FGDC	*RunwayCenterline*		
	SDSFIE	*airfield_surface_centerline*		
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**	*RunwayFATODesignSurface*		Extension
	FGDC	*RunwayHelipadDesignSurface*		Extension
	SDSFIE	*airfield_imaginary_surface_area*		
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**	
		Orthometric	**Ellipsoidal**
	N/A	N/A	N/A
Resolution	**Geographic Coordinates**	**Distances and Elevations**	
	Hundredth of arc second	Tenth of a foot	

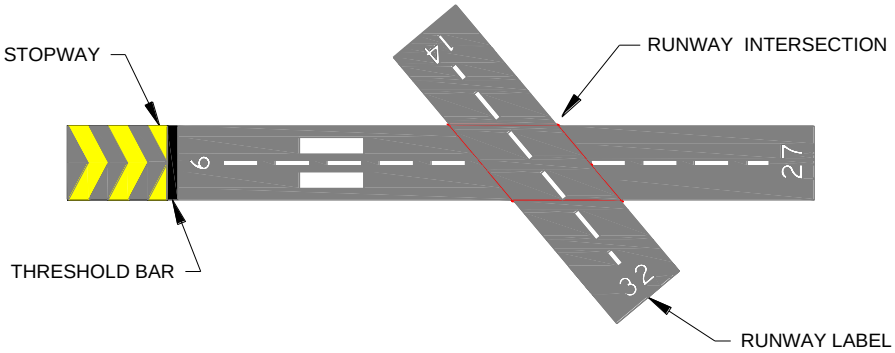
Feature Attributes	
Attribute (Datatype)	**Description**
name (VARCHAR2(50))	The name of the feature. [Source: SDSFIE Feature Table]
description (String 255)	Description of the feature
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is 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.

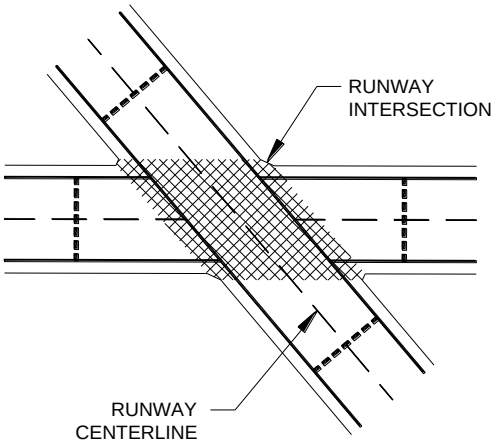
5.4.10. Runway Intersection

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**	*RunwayElement*		Core
	FGDC	*RunwayElement*		
	SDSFIE	*None*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				

Data Capture Rules: *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.*





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.
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**	*RunwayMarking*		Core
	FGDC	*RunwayLAHSO*		
	SDSFIE	*None*		
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**	
		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.
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

Feature Class Name	RunwayElement			
Feature Type	Polygon			
CADD Standard Requirements				
Layer/Level	**Description**			
C-RUNW-SEGM-	Runway Element			
	Color	**Linetype**	**Line Weight**	**Symbol**
AutoDesk Standards	3	Continuous	1 MM	User Defined
MicroStation Standards	2		7	
Information Assurance Level	None			
Equivalent Standards	**AIXM**	*RunwayElementExtension*		Extension
	FGDC	*RunwayElement*		Extension
	SDSFIE	*None*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *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.*				
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

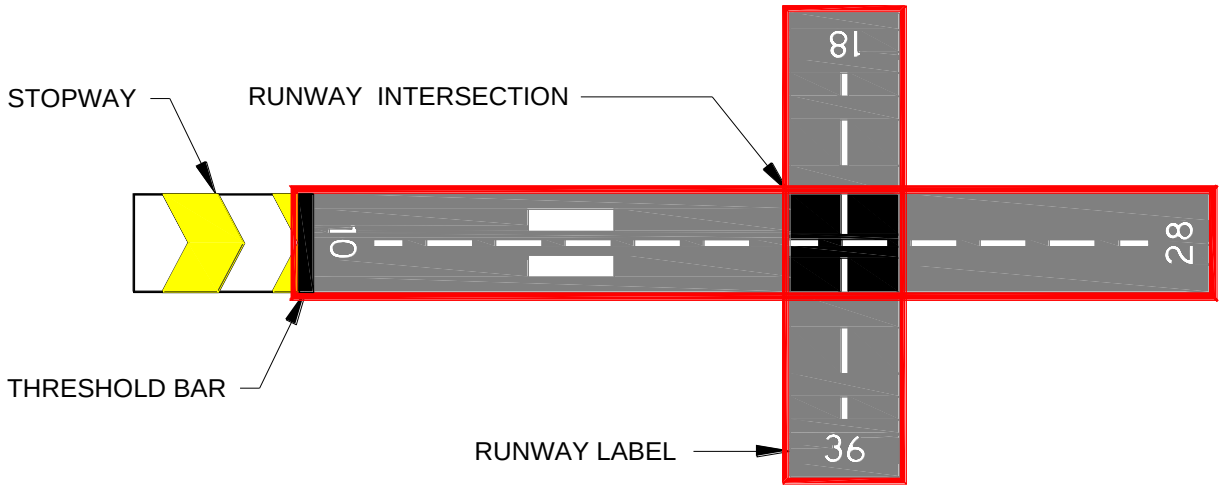
Attribute (Datatype)	Description
name (VARCHAR2(50))	The name of the feature.
description (String 255)	Description of the feature
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status
userFlag (String 254)	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: *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.*



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**	*TaxiHoldingPosition*		Core
	FGDC	*TaxiwayHoldingPosition*		
	SDSFIE	*None*		

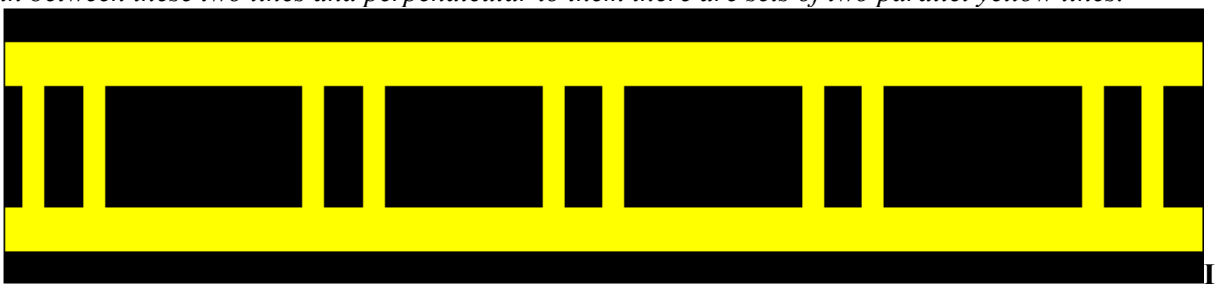
Documentation and Submission Requirements	None
Related Features	

Data Capture Rules: *The painted markings extend across the taxiway and may consist of one of the following:*

- *Runway holding position markings are a set of four yellow lines and three spaces.*
- *The side with the two solid lines is the holding side.*

Runway Holding Position Marking.

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.



ILS/MLS Holding Position Marking.

Collect taxiway holding position line as a line at the outer edge of the painted marking (stop bar) farthest away from the corresponding runway.

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 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.
lowVisibilityCategroy (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**	*AirportSign*		Extension
	FGDC	*AirportSign*		Extension
	SDSFIE	*general_improvement_feature_point*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *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.*				
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**	
			Orthometric	**Ellipsoidal**
	± 3 ft		± 5 ft	N/A
Resolution	**Geographic Coordinates**		**Distances and Elevations**	
	Hundredth of arc second		Tenth of foot	

Feature Attributes

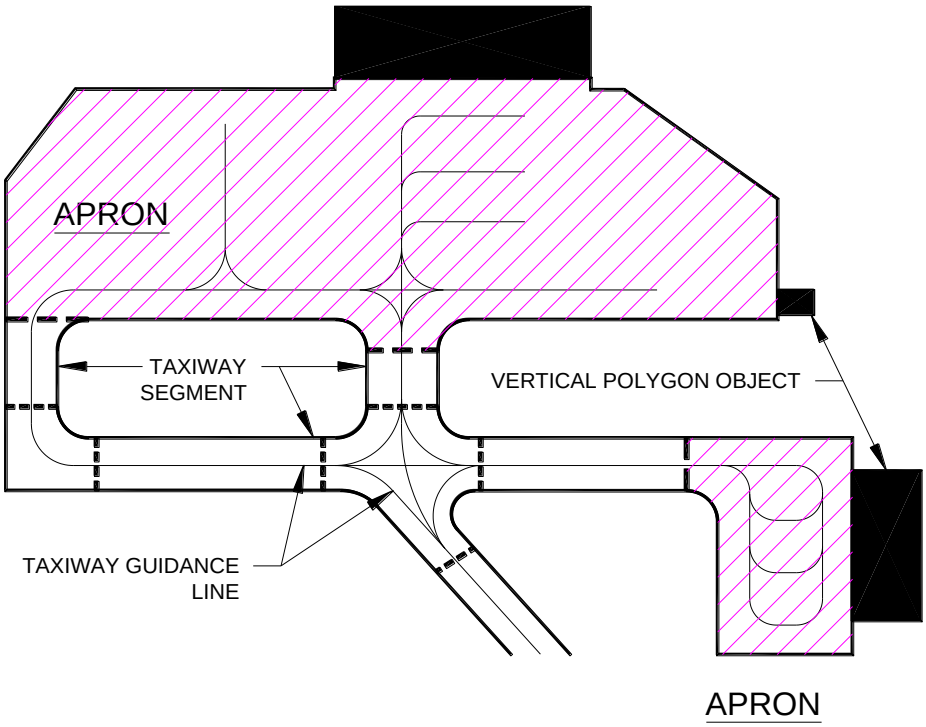
Attribute (Datatype)	Description
name (VARCHAR2(50))	The name of the feature.
description (VARCHAR2(255))	A description of the improvement feature.
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
signType (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**	*ApronElementExtension*		Extension
	FGDC	*Apron*		Extension
	SDSFIE	*airfield_surface_type*		
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**	
		Orthometric	**Ellipsoidal**
	± 3 ft	± 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 delverable 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**	*DeicingArea*		Core
	FGDC	*DeicingArea*		
	SDSFIE	*None*		
Documentation and Submission Requirements	No documentation is required for this feature.			

Related Features				
Data Capture Rules: *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.*				
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 foot		

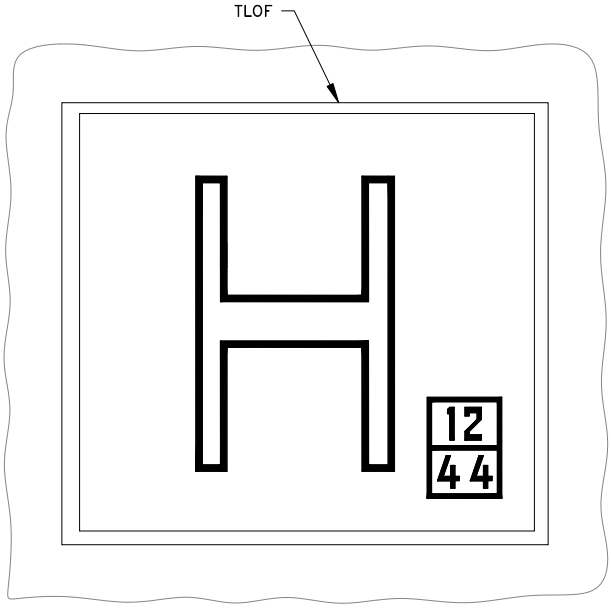
Feature Attributes	
Attribute (Datatype)	**Description**
name (VARCHAR2 (50))	The name of the feature.
description (VARCHAR2(255))	A brief description of the area and any special characteristics.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined 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**	*TouchDownLiftOff*	Core	
	FGDC	*TouchDownLiftOff*		
	SDSFIE	*None*		
Documentation and Submission Requirements	No documentation is required for this feature.			

Related Features	

Data Capture Rules: *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.*



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	± 0.20 ft
Resolution	**Geographic Coordinates**	**Distances and Elevations**	
	Hundredth of arc second	Nearest tenth of foot	

Feature Attributes

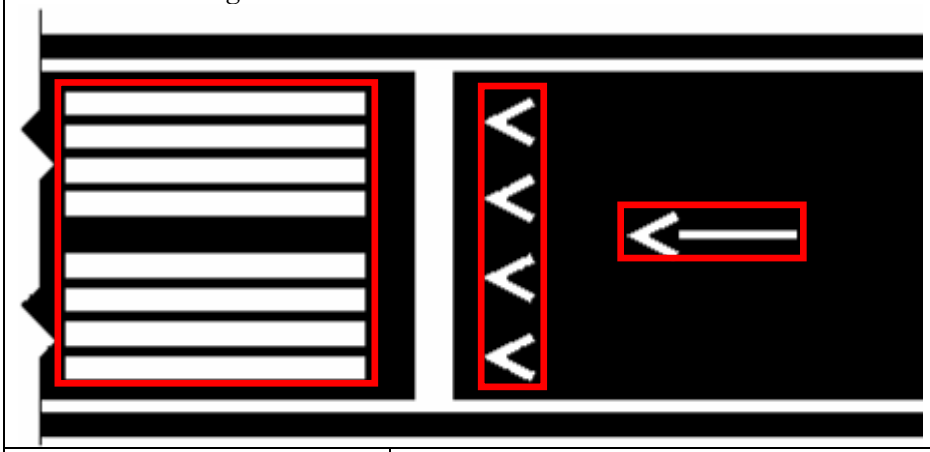
Attribute (Datatype)	Description
name (VARCHAR2(50))	The name of the feature.
description (VARCHAR2(255))	A brief description of the area and any special characteristics.
length (Real)	The overall length of the TLOF.
width (Real)	The overall width of the TLOF.
userFlag	An operator-defined work area. 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	*airfield_surface_marking_area*		
Documentation and Submission Requirements	No documentation is required for this feature.			

Related Features	
Data Capture Rules: *Collect the runway markings as closed polygons to encompass and delineate the individual markings.*	



Monumentation	No monumentation required.	
Survey Point Location	**Horizontal**	**Vertical**
	NA	NA
	NA	NA

Accuracy Requirements (in feet)	**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**	*MarkingElement*	Core
	FGDC	*Marking*	
	SDSFIE	*airfield_surface_marking_line*	
Documentation and Submission Requirements	No documentation is required for this feature.		
Related Features			

Data Capture Rules: *Collect a line through the middle of the paint line.*

Monumentation	No monumentation required.	
Survey Point Location	**Horizontal**	**Vertical**
	N/A	N/A
Accuracy Requirements (in feet)	**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.

5.4.21. 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**	**Symbol**
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Unclassified			
Equivalent Standards	**AIXM**			
	FGDC			
	SDSFIE	*airfield_surface_marking_area*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *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.*				
Monumentation	No monumentation required.			
Survey Point Location	**Horizontal**		**Vertical**	
	NA		NA	
	NA		NA	
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 (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.			

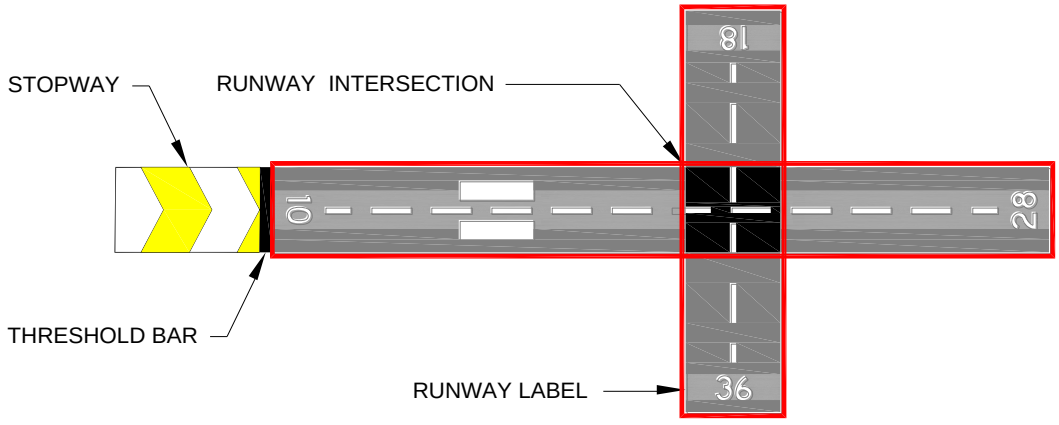
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Number(2))	Discriminator used to tie features of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

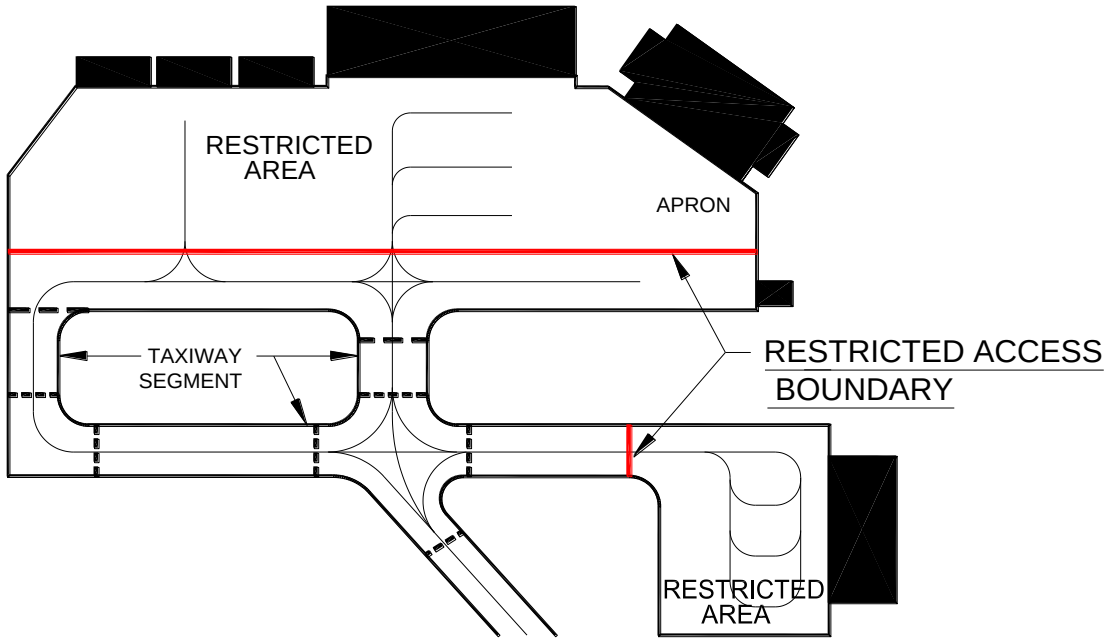
Attribute (Datatype)	Description
name (VARCHAR2(50))	Name of the feature.
description (String 255)	Description of the feature
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
runwayDesignator (String 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**	**Symbol**
AutoDesk Standards	5	Continuous	1	User Defined
MicroStation Standards	1		7	
Information Assurance Level	Confidential			
Equivalent Standards	**AIXM**	*SecurityElement*		Extension
	FGDC	*RestrictedAccessBoundary*		Extension
	SDSFIE	*Military_restricted_access_area*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				

Data Capture Rules: *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.*



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**	
		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))	A common name for the restricted area.
description (VARCHAR2(255))	A description of the restricted area.

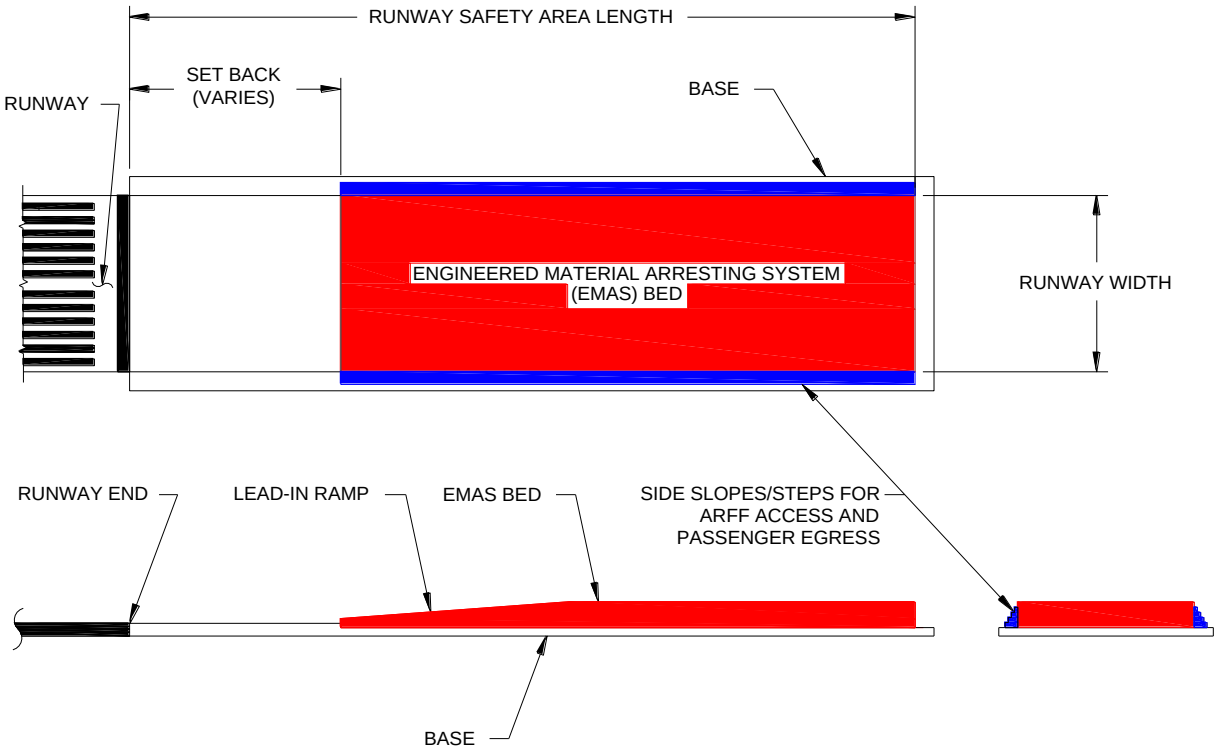
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect 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**	*ArrestingGear*		Core
	FGDC	*RunwayArrestingArea*		
	SDSFIE	*airfield_linear_safety_feature_line*		
Documentation and Submission Requirements	No documentation is required for this feature.			

Related Features	

Data Capture Rules: *Collect a closed polygon limited by the chevron markings identifying the area.*



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**	
		Orthometric	**Ellipsoid**
	± 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))	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]

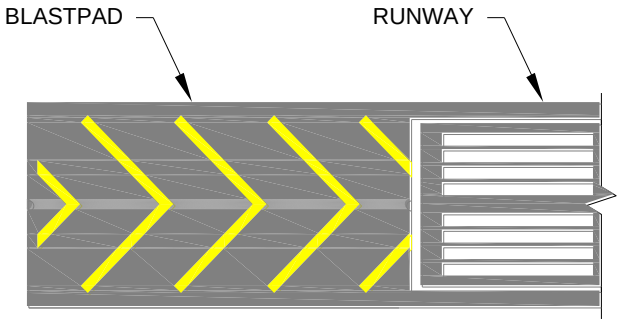
surfaceCondition (Enumeration: codeSurfaceCondition)	A description of the serviceability of the pavement [Source: NFDC]
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.
setback	The distance the EMAS begins beyond the end of the runway.

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**	**Symbol**
AutoDesk Standards	4	Continuous	1	User Defined
MicroStation Standards	7		3	
Information Assurance Level	Restricted			
Equivalent Standards	**AIXM**	*RunwayBlastPad*		Core
	FGDC	*RunwayBlastPad*		
	SDSFIE	*airfield_linear_safety_feature_line*		
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.

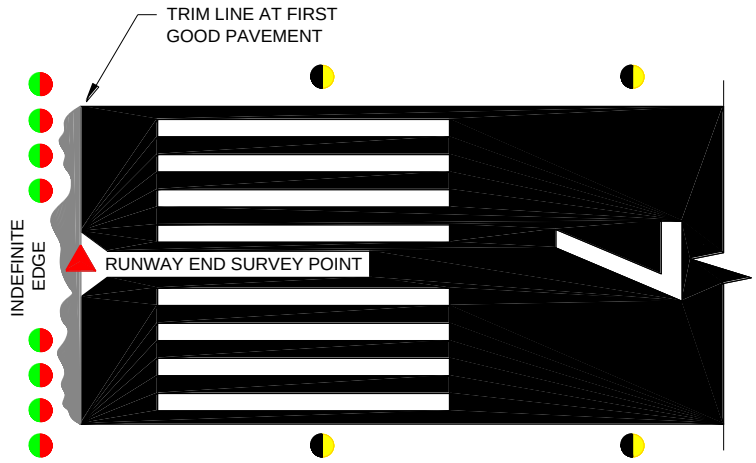
Monumentation	No monumentation is required.		
Survey Point Location	**Horizontal**	**Vertical**	
	N/A	N/A	
Accuracy Requirements (in feet)	**Horizontal**	**Vertical**	
		Orthometric	**Ellipsoidal**
	± 2 ft	± 3 ft	N/A
Resolution	**Geographic Coordinates**	**Distances and Elevations**	
	Hundredth of arc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

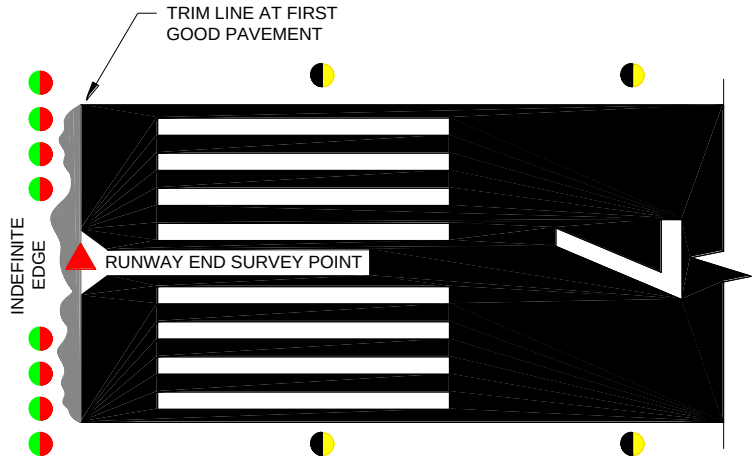
Feature Attributes	
Attribute (Datatype)	**Description**
name (VARCHAR2(50))	Name of the feature.
description (VARCHAR2(255))	Description of the feature
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
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**	*RunwayDirectionExtension*		Extension
	FGDC	*RunwayEnd*		
	SDSFIE	*Airfield_surface_site*		
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:*			

	 **Photograph Type #1 (Eye Level).** Photo taken from above the mark, showing an area around the mark about 1 meter in diameter.	 **Photograph Type #2 (Approach).** Photo showing tripod over the mark in foreground and approach in the background.
	 **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.	 **Photograph Type #4 (Close-in).** Close-up photo depicting nail, washer and markings.
Related Features		
Data Capture Rule: *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.*		
Monumentation	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.	
Survey Point Location	**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: • 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.)

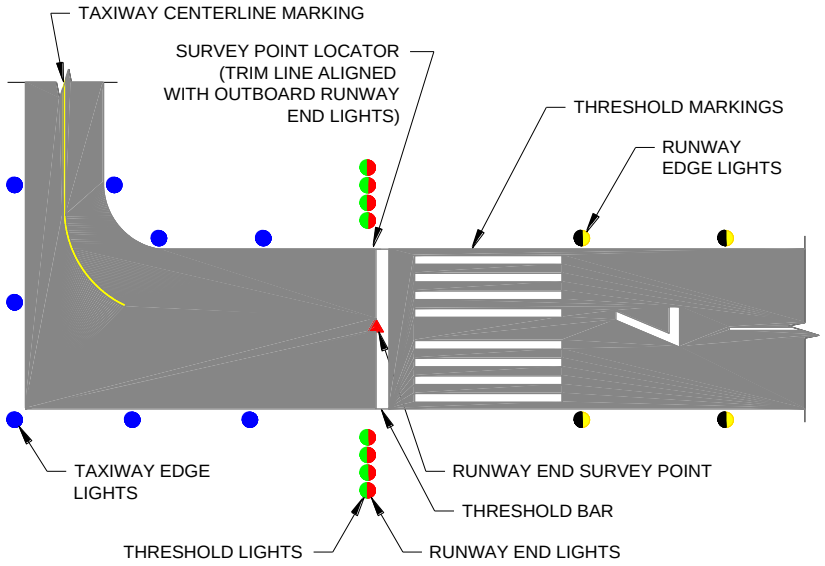
Supporting features include:

- 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		
	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). 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.		
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	

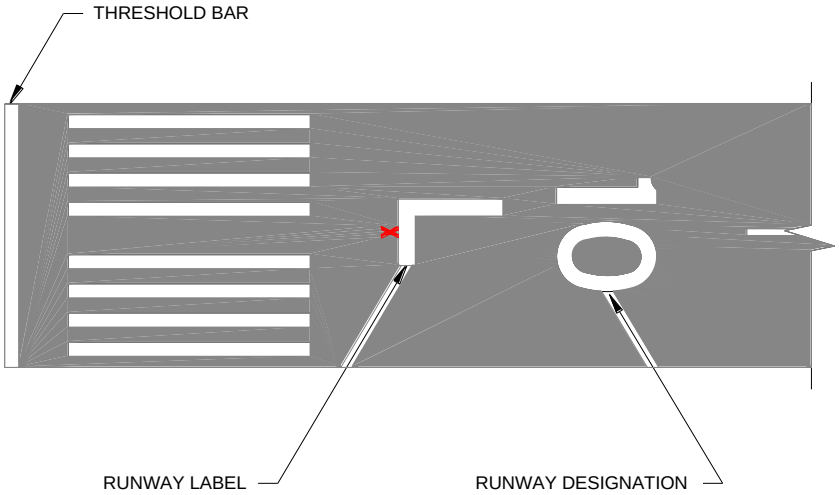
Feature Attributes

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**	*RunwayMarking*		Core
	FGDC	*RunwayLabel*		
	SDSFIE	*airfield_buffer_zone_area*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *Collect the runway label as an individual point object.*				
Monumentation	No monumentation required.			

Survey Point Location	**Horizontal and Vertical** 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.  **Illustrates the collection of the runway label.**		
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 (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: *Collect as a closed polygon to its greatest horizontal extents.*				
Monumentation	No monumentation required			
Survey Point Location	**Horizontal**		**Vertical**	
	NA		NA	
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

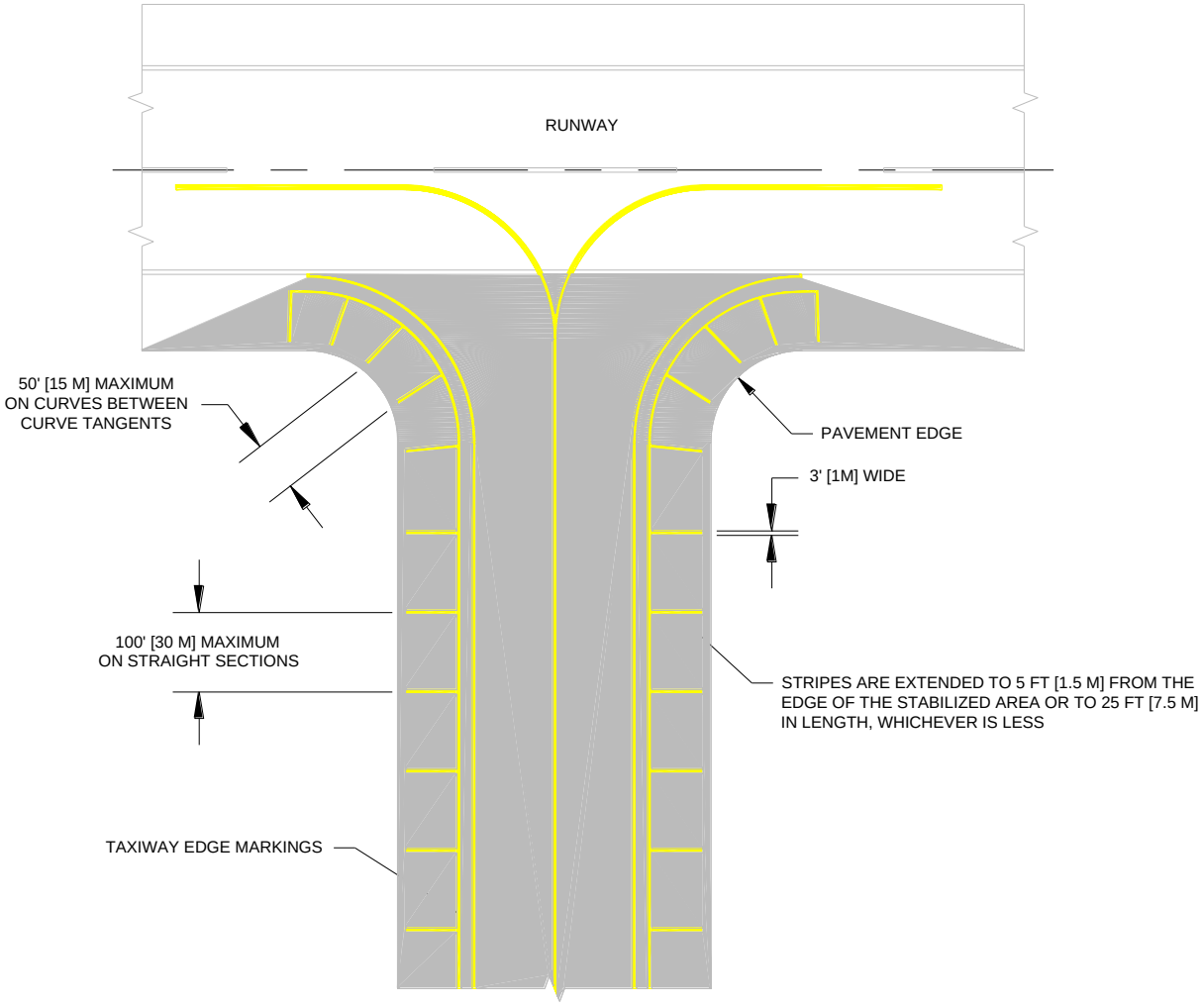
Attribute (Datatype)	Description
name (VARCHAR2(50))	Name of the feature
description (VARCHAR2 (255))	Description of the feature
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
runwayEndDesignator (String 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

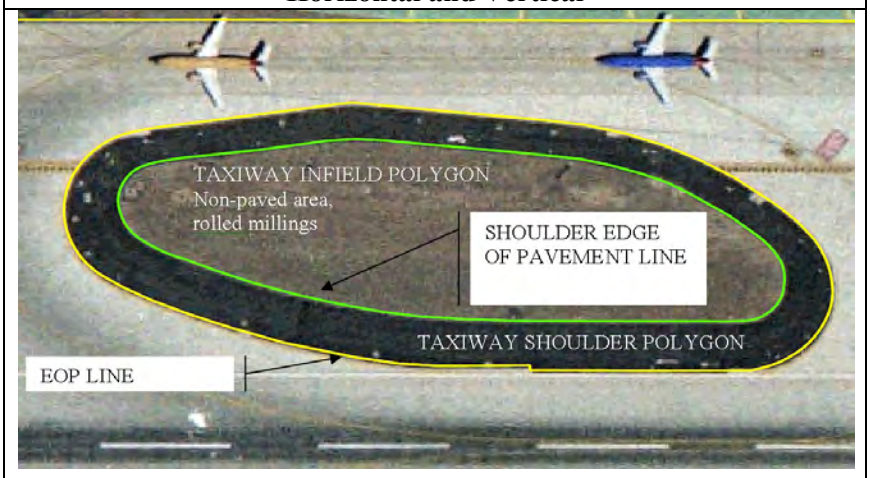
Definition: An area adjacent to the edge of paved runways, taxiways, or aprons providing a transition between the pavement and the adjacent surface; support for aircraft running off the pavement, enhance drainage, and blast protection. [Source: AC 150/5300-13]	
Feature Group	Airfield
Feature Class Name	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**	*RunwayElement*		Core
	FGDC	*RunwayElement*		
	SDSFIE	*Airfield_surface_site*		
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

Survey Point Location	**Horizontal and Vertical**		
			
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	

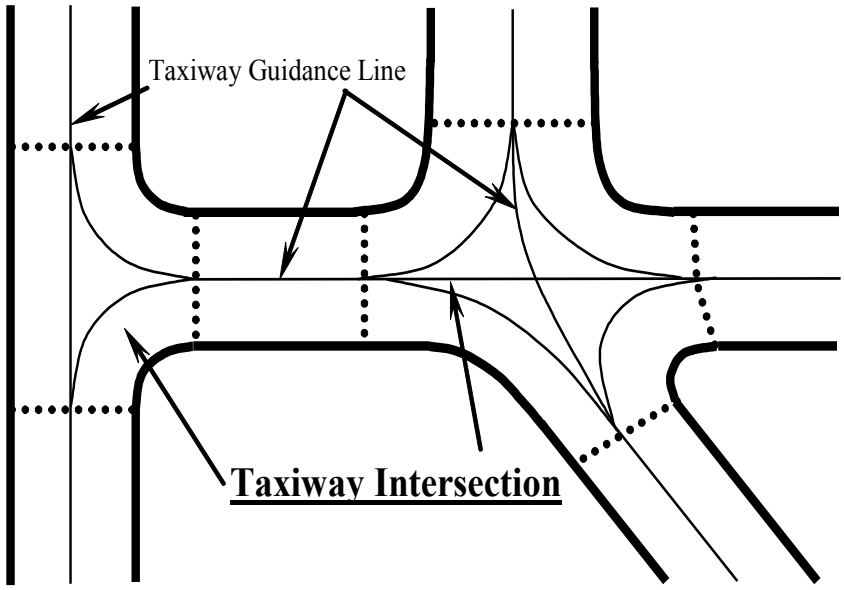
Feature Attributes

Attribute (Datatype)	Description
name (VARCHAR2(50))	Name of the feature.
description (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**	*TaxiwayElement*		Core
	FGDC	*TaxiwayIntersection*		
	SDSFIE	*None*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *Capture a polygon establishing the intersection of two or more taxiways.*				

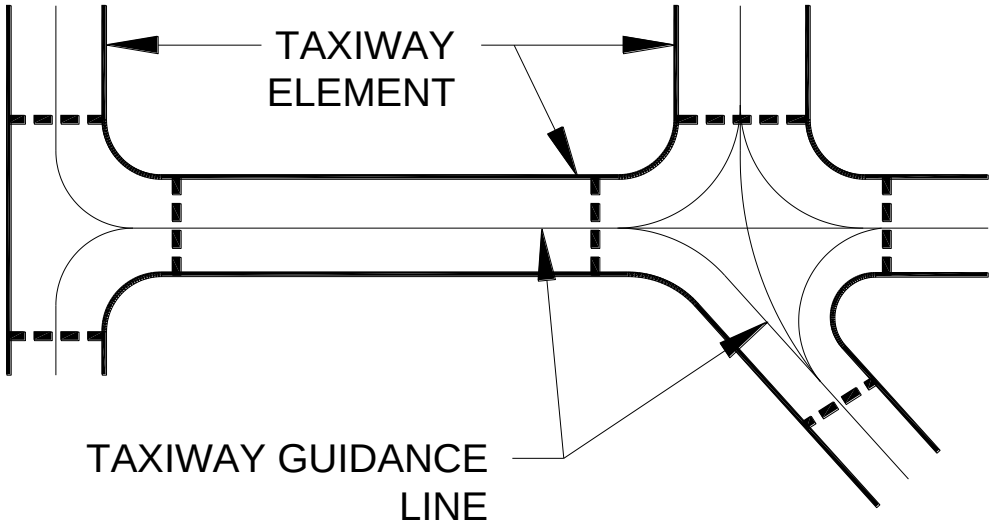


Monumentation	No monumentation required.		
Survey Point Location	**Horizontal and Vertical**		
	N/A		
Accuracy Requirements (in feet)	**Horizontal**	**Vertical**	
		Orthometric	**Ellipsoidal**
	± 3 ft	± 5 ft	N/A
Resolution	**Geographic Coordinates**	**Distances and Elevations**	
	Hundredth of arc second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

Feature Attributes	
Attribute (Datatype)	**Description**
name (VARCHAR2 (50))	Name of the feature.
description (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**	*TaxiwayElement*		Core
	FGDC	*TaxiwayElement*		
	SDSFIE	*airfield_surface_site*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *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 overlappping polygon rule.*				



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**	
		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 (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:

(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**	*LandmarkSegment*		Extension
	FGDC	*LandmarkSegment*		Extension
	SDSFIE	*None*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *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.).*				
Monumentation	No monumentation required.			
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))	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**	*Obstacle*		Extension
	FGDC	*Obstacle*		Extension
	SDSFIE	*None*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *Use the Obstacle 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.

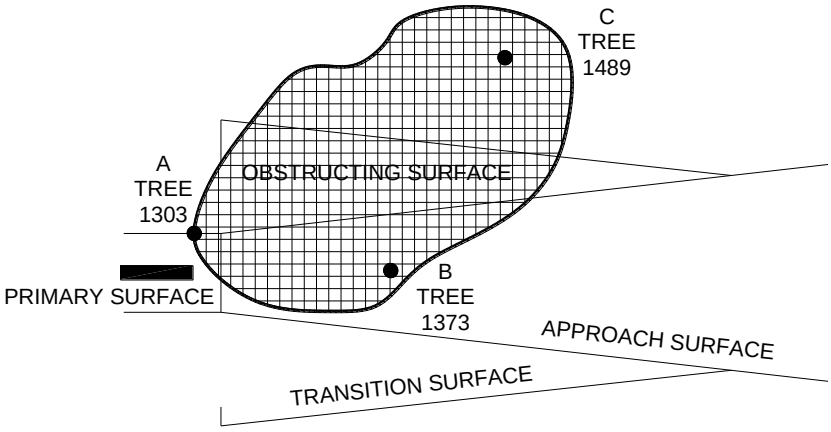
5.5.3. Obstruction Area

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**	*ObstructionArea*		Core
	FGDC	*ObstructionArea*		
	SDSFIE	*airspace_obstruction_navaid_point*		
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**	*ObstructionAssessmentArea*		Core
	FGDC	*ObstructionIdentificationSurface*		
	SDSFIE	*airfield_imaginary_surface_area*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *Identify the obstruction identification surface (OIS) required by the utilization type for the runway. Depict the horizontal limits of the appropriate obstruction imaginary surface.*				
Monumentation	No monumentation required.			
Survey Point Location	**Horizontal**		**Vertical**	
	N/A		N/A	
Accuracy Requirements (in feet)	**Horizontal**		**Vertical**	
			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))	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**	*RunwayProtectAreaExtension*		Extension
	FGDC	*RunwayProtectArea*		Extension
	SDSFIE	*None*		
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**	
			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: *Airport property information is usually obtainable from the county or local government.*				
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 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**	*AirportParcel*		Extension
	FGDC	*AirportParcel*		Extension
	SDSFIE	*None*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *Collect and reduce in accordance with state/local requirements.*				
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_SPACED	1 MM	User Defined
MicroStation Standards	4		7	
Information Assurance Level	Restricted			
Equivalent Standards	**AIXM**	*GovernmentalUnit*		Extension
	FGDC	*GovernmentalUnit*		Extension
	SDSFIE	*political_jurisdiction_county_line*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *County boundary information is usually obtainable from the county engineer, surveyor or auditor's office.*				
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 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**	*EasementsAndRightsofWay*		Extension
	FGDC	*EasementsAndRightsofWay*		Extension
	SDSFIE	*easement_right_of_way_area*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *Easement and right of way information is usually obtainable from county engineer, surveyor, audit or recorder office.*				
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
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**	*FaaRegionArea*		Extension
	FGDC	*FaaRegionArea*		Extension
	SDSFIE	*faa_region_area*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *Collect this information from official FAA sources.*				
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 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**	*LandUse*		Extension
	FGDC	*LandUse*		Extension
	SDSFIE	*land_use_area*		

Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *Collect the land use information from state/county/local zoning or other appropriate office.*				
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**
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**	**Symbol**
AutoDesk Standards	1	Continuous	1 MM	User Defined
MicroStation Standards	3		7	
Information Assurance Level	Unclassified			
Equivalent Standards	**AIXM**	*LeaseZone*		Extension
	FGDC	*LeaseZone*		Extension
	SDSFIE	*lease_zone_area*		
Documentation and Submission Requirements	None			
Related Features				

Data Capture Rules: *Leasing information is usually obtainable from the airport.*			
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**
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**	**Symbol**
AutoDesk Standards	1	Continuous	1 MM	User Defined
MicroStation Standards	3		7	
Information Assurance Level	Restricted			
Equivalent Standards	**AIXM**	*GovernmentalUnit*		Extension
	FGDC	*GovernmentalUnit*		Extension
	SDSFIE	*political_jurisdiction_municipal_line*		
Documentation and Submission Requirements	None			

Related Features				
Data Capture Rules: *Municipality boundary limits are usually obtainable from county or local government offices.*				
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 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**	**Symbol**
AutoDesk Standards	4	Continuous	1 MM	User Defined
MicroStation Standards	7		7	
Information Assurance Level	Restricted			
Equivalent Standards	**AIXM**	*GeographicArea*		Extension
	FGDC	*GeographicArea*		Extension
	SDSFIE	*parcel_area*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *Parcel boundary information is usually obtainable from the county or local government.*				
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**	*GovernmentalUnit*		Extension
	FGDC	*GovernmentalUnit*		Extension
	SDSFIE	*political_jurisdiction_state_line*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *The state boundary is usually obtainable from the state government.*				
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**
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**	*Zoning*		Extension
	FGDC	*Zoning*		Extension
	SDSFIE	*zoning_area*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				

Data Capture Rules: *Zoning limits and information is usually obtainable from the local zoning office.*

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 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**	*EnvironmentalContaminationArea*		Extension
	FGDC	*EnvironmentalContaminationArea*		Extension
	SDSFIE	*environmental_regulated_facility_site*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *Collect a closed polygon to its greatest horizontal extents.*				
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))	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**	*AirspaceExtension*		Extension
	FGDC	*FaunaHazardArea*		Extension
	SDSFIE	*fauna_hazard_area*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *Collect a closed polygon to its greatest horizontal extents.*				
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))	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**	*FloodZone*		Extension
	FGDC	*FloodZone*		Extension
	SDSFIE	*flood_zone_area*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *Collect a closed polygon to its greatest horizontal extents.*				
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.
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**	*FloraSpeciesSite*		Extension
	FGDC	*FloraSpeciesSite*		Extension
	SDSFIE	*flora_species_site*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *Collect a point indicating the individual location or the center of a group.*				
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))	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**	*ForestStandArea*		Extension
	FGDC	*ForestStandArea*		Extension
	SDSFIE	*flora_species_management_area*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *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.*				
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))	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**	*HazardousMaterialStorageSite*		Extension
	FGDC	*HazardousMaterialStorageSite*		Extension
	SDSFIE	*Contained_hazwaste_storage_site*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *Collect closed polygon to its greatest horizontal extents.*				
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))	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**	*NoiseContour*		Extension
	FGDC	*NoiseContour*		Extension
	SDSFIE	*Noise_contour_line*		
Documentation and Submission Requirements	Noise contour map			
Related Features				
Data Capture Rules: *Acquire from the Integrated Noise Model (INM).*				
Monumentation	No monumentation required.			
Survey Point Location	**Horizontal**		**Vertical**	
	N/A		N/A	
Accuracy Requirements (in feet)	**Horizontal**		**Vertical**	
			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**	*NoiseIncident*		Extension
	FGDC	*NoiseIncident*		Extension
	SDSFIE	*noise_incident_point*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *Place collection point at address of complaint.*				
Monumentation	No monumentation required.			
Survey Point Location	**Horizontal**		**Vertical**	
	N/A		N/A	
Accuracy Requirements (in feet)	**Horizontal**		**Vertical**	
			Orthometric	**Ellipsoidal**
	± 50 ft		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.

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**	*NoiseMonitoringPoint*		Extension
	FGDC	*NoiseMonitoringPoint*		Extension
	SDSFIE	*noise_monitoring_point*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *Collect point at the center of monitoring station.*				
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.
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**	*SampleCollectionPoint*		Extension
	FGDC	*SampleCollectionPoint*		Extension
	SDSFIE	*field_sample_collection_location_point*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *Collect point at center of sample location.*				
Monumentation	No monumentation required.			
Survey Point Location	**Horizontal**		**Vertical**	
	N/A		N/A	
Accuracy Requirements (in feet)	**Horizontal**		**Vertical**	
			Orthometric	**Ellipsoidal**
	± 1 ft		± 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.

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**	*GeoBorderExtension*		Extension
	FGDC	*Shoreline*		Extension
	SDSFIE	*shoreline*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *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.*				
Monumentation	No monumentation required.			
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))	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**	*AirspaceExtension*		Extension
	FGDC	*Wetland*		Extension
	SDSFIE	*Wetland_area*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *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.*				
Monumentation	No monumentation required.			
Survey Point Location	**Horizontal**		**Vertical**	
	N/A		N/A	
Accuracy Requirements (in feet)	**Horizontal**		**Vertical**	
			Orthometric	**Ellipsoidal**
	± 5 ft		± 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**	*SurveyControlPointExtension*	Extension	
	FGDC	*AirportControlPoint*		
	SDSFIE	*Control_point*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *Collect the point where the centerlines of two, or more, runways intersect.*				
Monumentation	No monumentation required.			
Survey Point Location	**Horizontal**		**Vertical**	
	N/A		N/A	
Accuracy Requirements (in feet)	**Horizontal**		**Vertical**	
			Orthometric	**Ellipsoidal**
	± 3 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
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**	*AirportControlPoint*		
	FGDC	*SurveyControlPointExtension (Extension)*		
	SDSFIE	*Control_point*		
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**	
		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
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: *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.*				
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

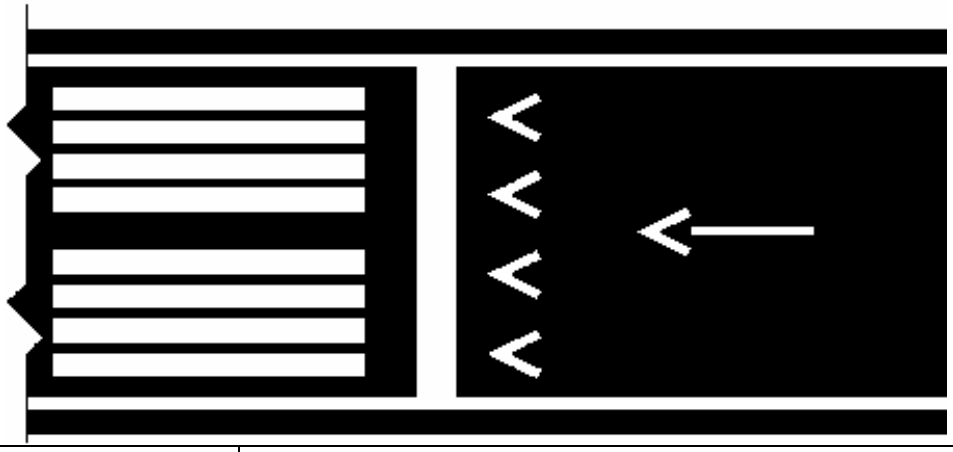
Attribute (Datatype)	Description
permanentId (String 6)	Permanent point identifier assigned by NGS to PACS and SACS [Source: NGS]
pointType (Enumeration: CodePointType)	Contains the allowable values of a point type used by the ControlPoint feature. The point types may be supplementally provided as subtypes 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.

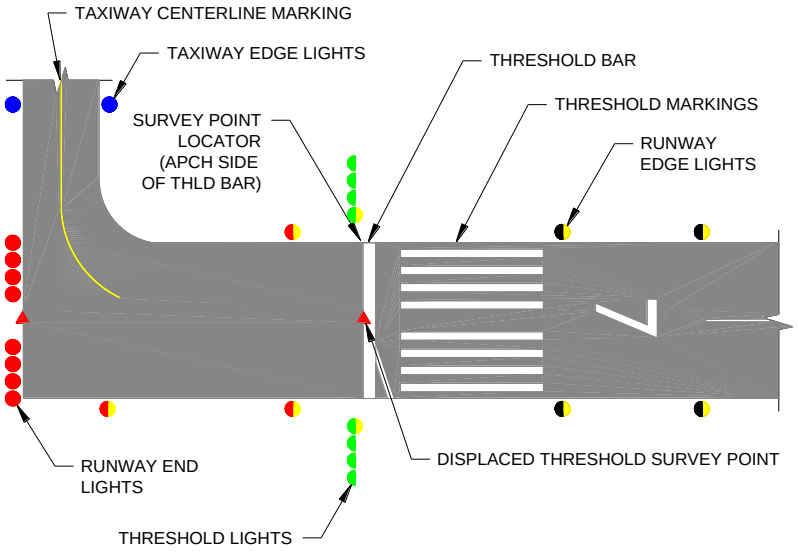
ellipsoidHeight (Real)	The height above the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question. Also called the geodetic height. [Source: NGS]
yearOfSurvey (Number 4)	The year of the most recent runway end survey used to compute the ARP
dateRecovered (Date)	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	*Control_point*		
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.			

	 **Photograph Type #1 (Eye Level).** Photo taken from above the mark, showing an area around the mark about 1 meter in diameter.	 **Photograph Type #2 (Approach).** Photo showing tripod over the mark in foreground and approach in the background.
	 **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.	 **Photograph Type #4 (Close-in).** Close-up photo depicting nail, washer and markings.

Related Features	
Data Capture Rule: *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.* 	
Monumentation	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.
Survey Point Location	**Paved Runway** Survey Point Locator is the approach side of threshold bar or trim line connecting outboard threshold lights. Supporting features include: • 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 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.

<table>
<tr><td></td><td>


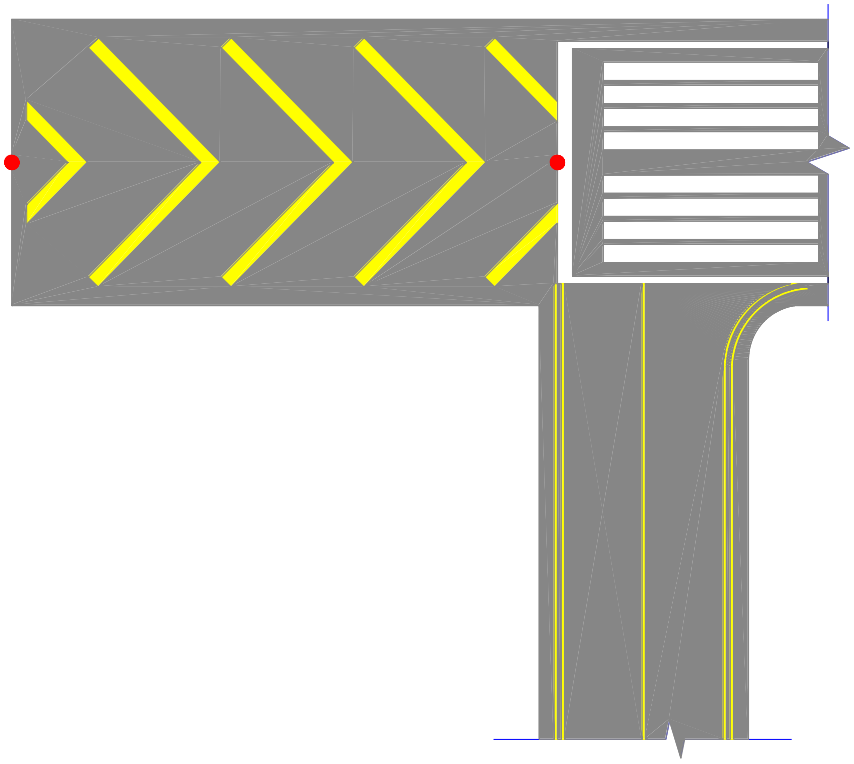
NOTES:
1. THIS GRAPHIC IS NOT TO SCALE. FEATURES ARE SYMBOLIZED AND INTENDED ILLUSTRATION PURPOSES ONLY.
2. RUNWAY/STOPWAY SURVEYS SHOULD BE DISCUSSED WITH APPROPRIATE AIRPORT AUTHORITIES.
3. SURVEY POINT LOCATOR:
• APPROACH SIDE OF THRESHOLD BAR
4. SUPPORTING FEATURES
• RUNWAY END LIGHTS NEAR END OF 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:
• NONSTANDARD MARKINGS FOR DISPLACED THRESHOLD
• THRESHOLD LIGHTS MAY NOT BE PRECISELY ALIGNED WITH APPROACH SIDE OF THRESHOLD BAR
• DO NOT CONFUSE THIS SITUTION WITH A RUNWAY END AND ALIGNED TAXIWAY
</td></tr>
<tr><td></td><td>Unpaved Runway</td></tr>
<tr><td></td><td>Survey Point Locator is the trim line connecting outboard threshold lights or the trim Line connecting outboard threshold day markers. Supporting features include
• 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)
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.</td></tr>
<tr><td rowspan="2">Accuracy Requirements (in feet)</td><td rowspan="2">Horizontal</td><td colspan="2">Vertical</td></tr>
<tr><td>Orthometric</td><td>Ellipsoidal</td></tr>
<tr><td></td><td>± 1 ft</td><td>± 0.25 ft</td><td>± 0.20 ft</td></tr>
<tr><td rowspan="2">Resolution</td><td>Geographic Coordinates</td><td colspan="2">Distances and Elevations</td></tr>
<tr><td>Hundredth of arc second</td><td colspan="2">Nearest tenth of a foot</td></tr>
</table>

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	*Control_point*		
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**	
		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)	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: *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.*				
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: *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.*				
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.
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	*Control_point*		
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
	Thousanth 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**	*CoordinateGridArea*	Extension
	FGDC	*CoordinateGridArea*	
	SDSFIE	*Coordinate_grid_area*	
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**	
		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.

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**	*ElevationContour*		Extension
	FGDC	*ElevationContour*		
	SDSFIE	*elevation_contour_line*		
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**	
			Orthometric	**Ellipsoidal**
	One-half contour interval		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**	*ImageArea*		Extension
	FGDC	*ImageArea*		
	SDSFIE	*Image_area*		
Documentation and Submission Requirements	No documentation is required for this feature.			
Related Features				
Data Capture Rules: *Boundary of aerial imagery.*				
Monumentation	No monumentation required.			
Survey Point Location	**Horizontal**		**Vertical**	
	N/A		N/A	
Accuracy Requirements (in feet)	**Horizontal**		**Vertical**	
			Orthometric	**Ellipsoidal**
	Accuracy of the imagery		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.

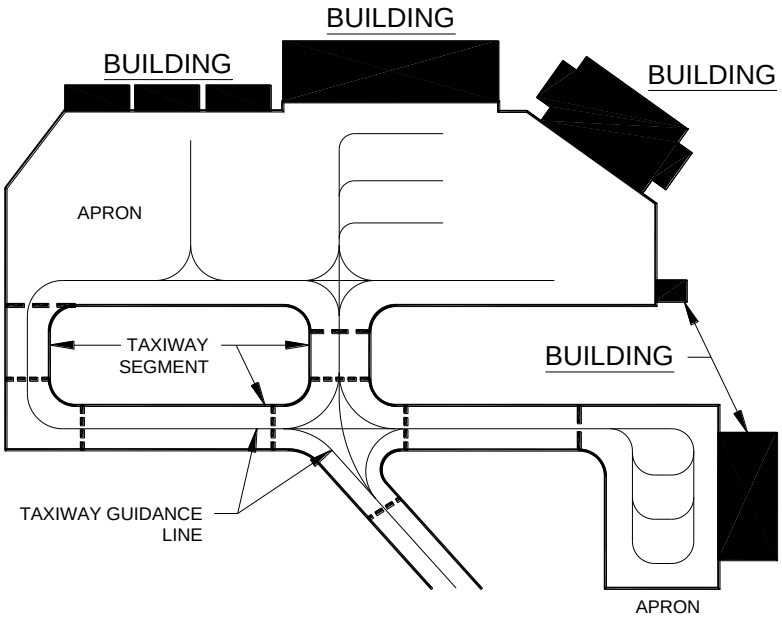
5.9. Group: MAN MADE STRUCTURES

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**	*Building*		Extension
	FGDC	*Building*		Extension
	SDSFIE	*structure_existing_site*		
Documentation and Submission Requirements	None			
Related Features				

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.*

NOTE: *If the building penetrates an OIS or is selected as a representative object, additionally identify, classify and document the building as an ObstructionArea and associated accuracy.*



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

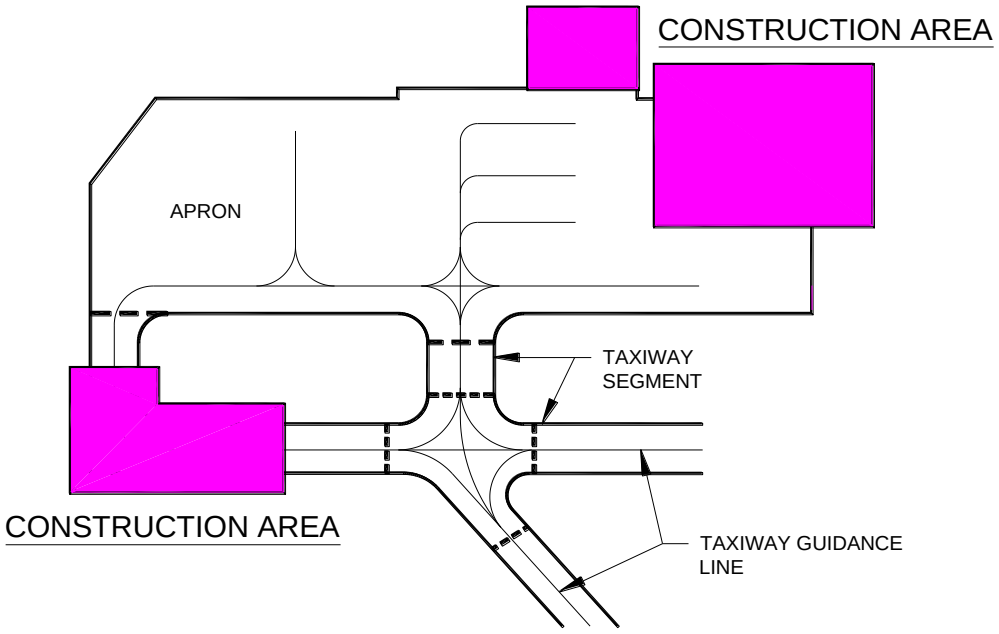
E-STAT-DEMO-PHS2	Demolition - phase 2	P-STAT-NEWW-	New work
E-STAT-DEMO-PHS3	Demolition - phase 3	P-STAT-TEMP-	Temporary work
F-STAT-DEMO-	Demolition (**NOTE:** *comprehensive demolition is handled in Model File Type: Demolition Plan*)	S-STAT-DEMO-	Demolition
F-STAT-DEMO-PHS1	Demolition - phase 1	S-STAT-DEMO-PHS1	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:** *comprehensive demolition is handled in Model File Type: Demolition Plan*)
L-STAT-DEMO-	Demolition (**NOTE:** *comprehensive demolition is handled in Model File Type: Demolition Plan*)	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**	*ConstructionArea*	Extension
	FGDC	*ConstructionArea*	Extension
	SDSFIE	*structure_existing_site*	
Documentation and Submission Requirements	None		

Related Features	

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.*



Illustrates the collection of an airport construction area.

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.
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.

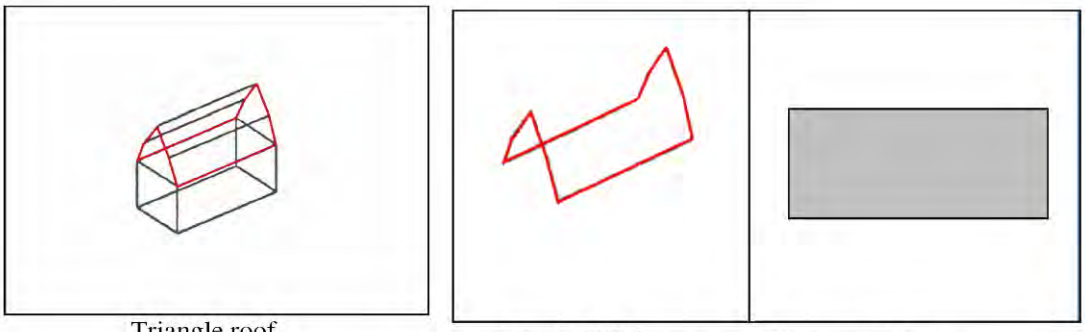
Alternative (Number(2))	Discriminator used to tie features of a plan or proposal together into a version.

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				

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.*

NOTE: *If the roof penetrates an OIS or is selected as a representative object, additionally identify, classify and document the roof as an ObstructionArea and associated accuracy.*



Triangle roof Actual 3-D Polygon Planimetric View

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**	
			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))	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**	**Symbol**
AutoDesk Standards	5	Continuous	1 MM	User Defined
MicroStation Standards	1		7	
Information Assurance Level	Restricted			
Equivalent Standards	**AIXM**	*Fence*		Extension
	FGDC	*Fence*		Extension
	SDSFIE	*fence_line*		
Documentation and Submission Requirements	No documentation is required.			
Related Features				

Data Capture Rules: *Collect line along fence line.* **NOTE:** *If the fence penetrates an OIS or is selected as a representative object, additionally identify, classify and document the fence as an Obstacle and associated accuracy.*				
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.
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**	**Symbol**
AutoDesk Standards	214	Continuous	1 MM	User Defined
MicroStation Standards	5		7	
Information Assurance Level	Restricted			
Equivalent Standards	**AIXM**	*GateLine*		Extension
	FGDC	*GateLine*		Extension
	SDSFIE	*gate_line*		
Documentation and Submission Requirements	None			

Related Features				
Data Capture Rules: *Collect center of gate from post-to-post.* **NOTE:** *If the gate penetrates an OIS or is selected as a representative object, additionally identify, classify and document the gate as an Obstacle and associated accuracy.*				
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 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**	**Symbol**
AutoDesk Standards	7	Continuous	1	User Defined
MicroStation Standards	0		7	
Information Assurance Level	Restricted			
Equivalent Standards	**AIXM**	*VerticalStructure*		Extension

	FGDC	*Tower*	Extension
	SDSFIE	*tower_site*	
Documentation and Submission Requirements	No documentation is required.		
Related Features			
Data Capture Rules: *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.* **NOTE:** *If the tower penetrates an OIS or is selected as a representative object, additionally identify, classify and document the tower as an Obstacle and associated accuracy*.			
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

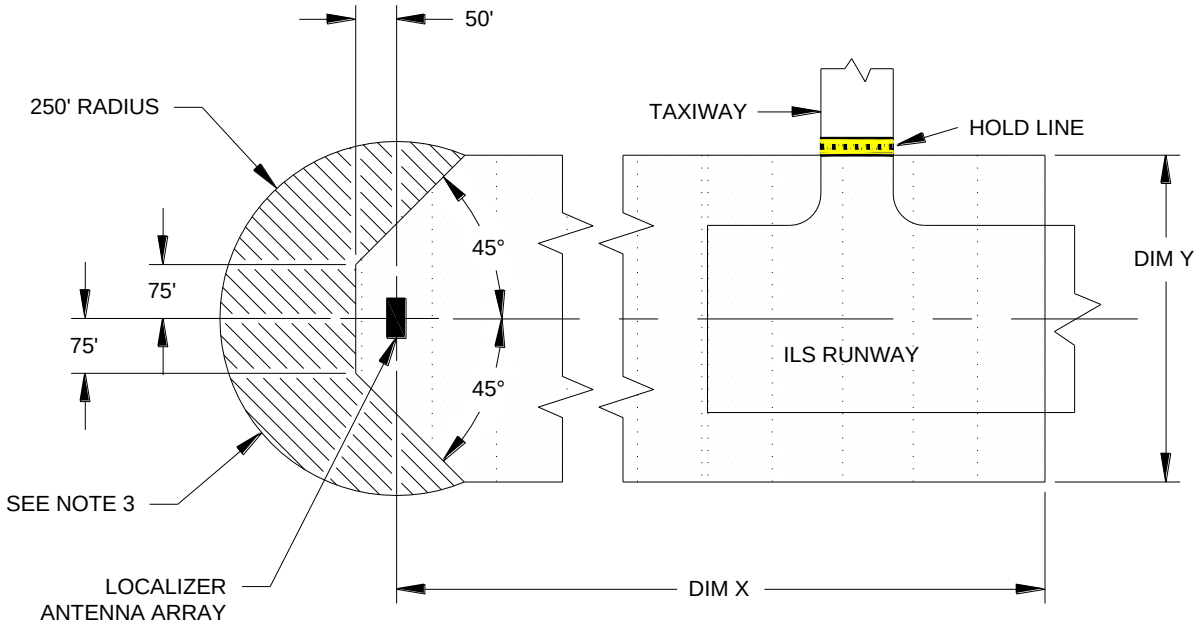
Attribute (Datatype)	Description
name (VARCHAR2 (50))	Name of the feature.
description (VARCHAR2 (255))	Description of the feature.
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
verticalStructureMaterial (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 aids 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**	*ObstacleAssessmentAreaExtension*		Extension
	FGDC	*NavigationalAidCriticalArea*		Extension
	SDSFIE	*airfield_buffer_zone_area*		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules: *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.*				



DIMENSIONS X AND Y VALUES (IN FEET)

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

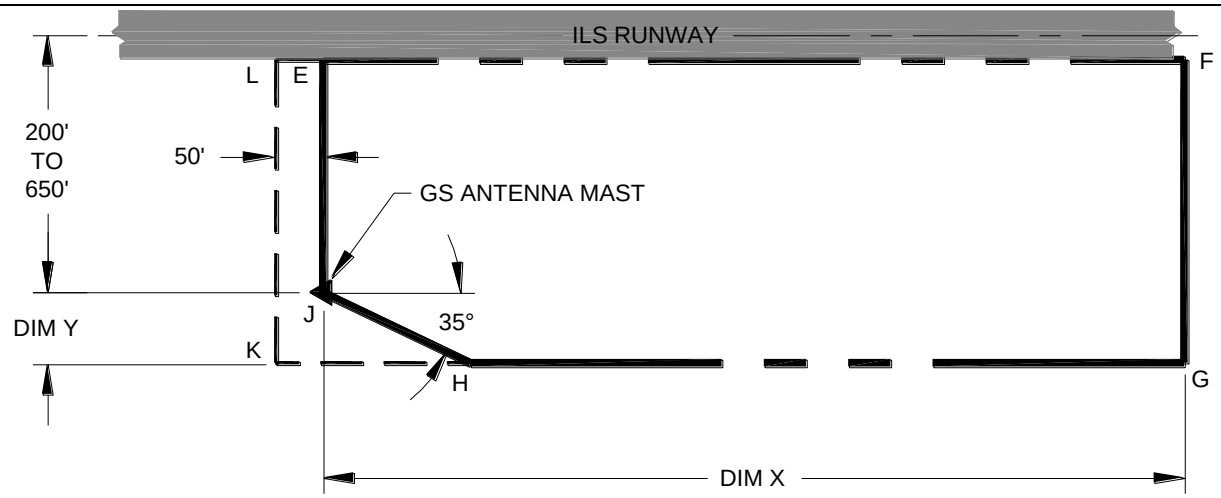
LEGEND

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	CATEGORY I		CATEGORY II/III	
	DIM X	DIM Y	DIM X	DIM Y
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

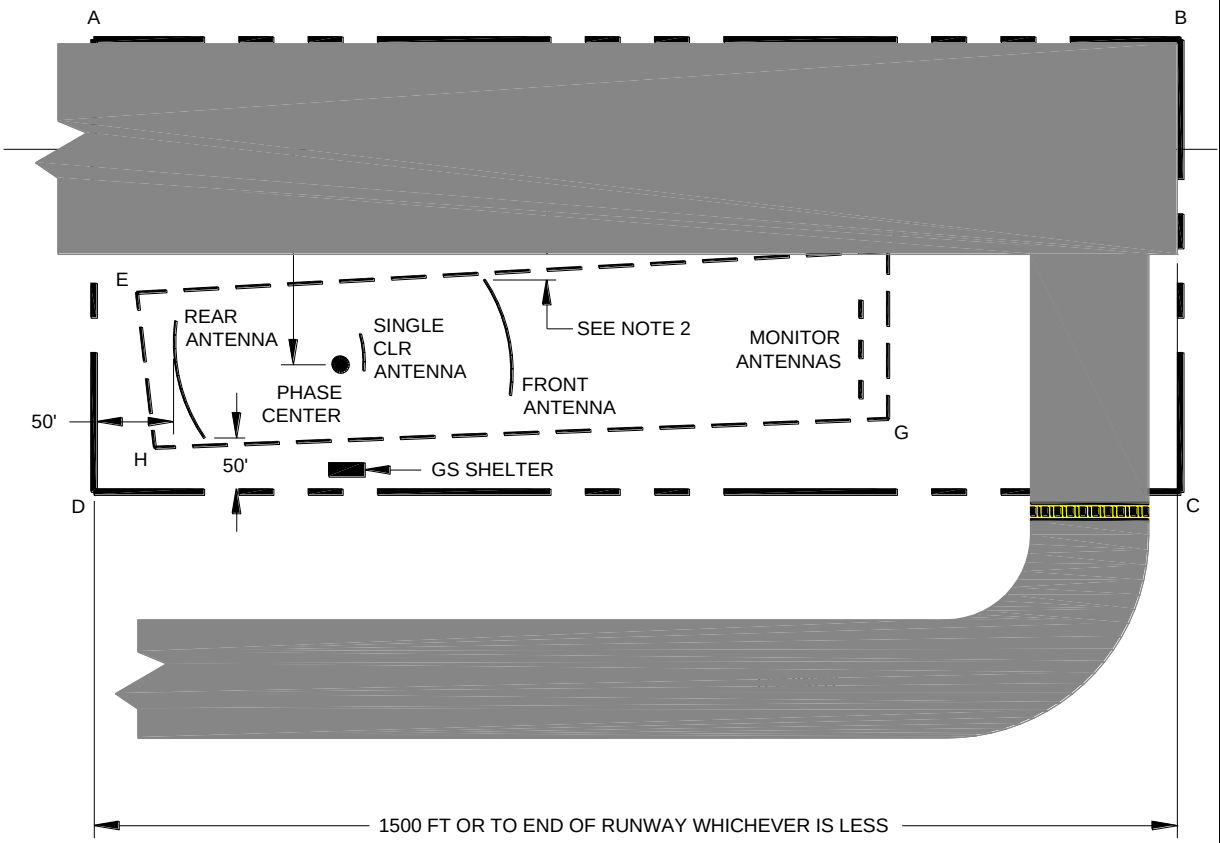
ALL DISTANCES ARE IN FEET AND REPRESENT THE MINIMUM ALLOWABLE DISTANCES FROM THE NEAREST POINT ON THE AIRCRAFT LONGITUDINAL AXIS (LINE FROM NOSE TO TAIL) TO THE GLIDE SLOPE ANTENNA, AS DEFINED IN FIGURE 1-3.

● 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**	
		Orthometric	**Ellipsoidal**
	± 3 ft	± 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.

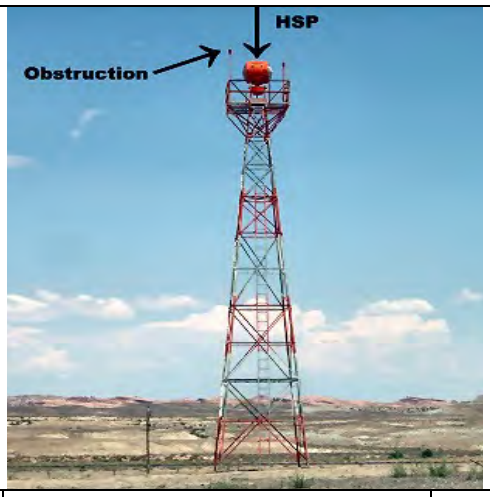
5.10.2. Navaid Equipment – Airport Beacon (APBN)

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**	*NavaidEquipmentExtension*		Extension
	FGDC	*NavigationalAidEquipment*		
	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: *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.*

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	
		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)	Identifes 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

<table>
<tr><th colspan="5">CADD Standard Requirements</th></tr>
<tr><th>Layer/Level</th><th colspan="4">Description</th></tr>
<tr><td>C-AFLD-AIDS-</td><td colspan="4">Airfield Navigational Aid -</td></tr>
<tr><td></td><th>Color</th><th>Line Type</th><th>Line Weight</th><th>Symbol</th></tr>
<tr><td>AutoDesk Standards</td><td>4</td><td rowspan="2">Continuous</td><td>1</td><td rowspan="2">User Defined</td></tr>
<tr><td>MicroStation Standards</td><td>7</td><td>7</td></tr>
<tr><td>Information Assurance Level</td><td colspan="4">Unclassified</td></tr>
<tr><td rowspan="3">Equivalent Standards</td><td>AIXM</td><td colspan="2">NavaidEquipment</td><td>Extension</td></tr>
<tr><td>FGDC</td><td colspan="2">NavaidEquipmentExtension</td><td>Extension</td></tr>
<tr><td>SDSFIE</td><td colspan="3">navigational_aid_point</td></tr>
<tr><td>Documentation and Submission Requirements</td><td colspan="4">Document this feature as described in paragraphs 1.5.2 and 1.5.3.</td></tr>
<tr><td>Related Features</td><td colspan="4"></td></tr>
<tr><td colspan="5">Data Capture Rules: 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.</td></tr>
<tr><td>Monumentation</td><td colspan="4">No monumentation required.</td></tr>
<tr><td rowspan="2">Survey Point Location</td><th colspan="2">Horizontal</th><th colspan="2">Vertical</th></tr>
<tr><td colspan="2">Center of cover or axis of rotation</td><td colspan="2">The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.</td></tr>
<tr><td colspan="5"> 
</td></tr>
<tr><td rowspan="2">Accuracy Requirements (in feet)</td><th rowspan="2">Horizontal</th><th colspan="3">Vertical</th></tr>
<tr><th>Orthometric</th><th>Ellipsoidal</th></tr>
<tr><td>± 10 ft</td><td>± 20 ft</td><td>N/A</td></tr>
<tr><td rowspan="2">Resolution</td><th colspan="2">Geographic Coordinates</th><th colspan="2">Distances and Elevations</th></tr>
<tr><td colspan="2">Hundredth of arc second</td><td colspan="2">Nearest one foot</td></tr>
<tr><td colspan="5">Feature Attributes</td></tr>
<tr><th colspan="2">Attribute (Datatype)</th><th colspan="3">Description</th></tr>
<tr><td colspan="2">name (VARCHAR2 (50))</td><td colspan="3">Name of the feature</td></tr>
</table>

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)	Identifes 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.

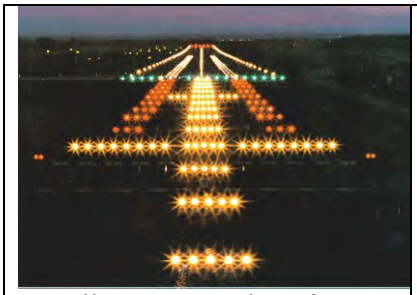
5.10.4. Navaid Equipment – Approach Light System (ALS)

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				

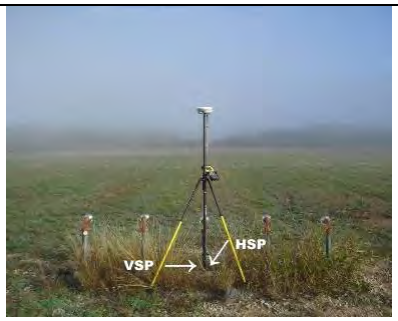
Data Capture Rules: *Collect the horizontal and vertical positions of the NAVAID using the survey point identified below. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as using the OBSTACLE feature type and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.*

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.



Pilot's perspective of an ALSF-2.

Collecting the first light or center light of the first row.



Collecting the last light or center light of last row.

Types of Approach Light Systems are:

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.

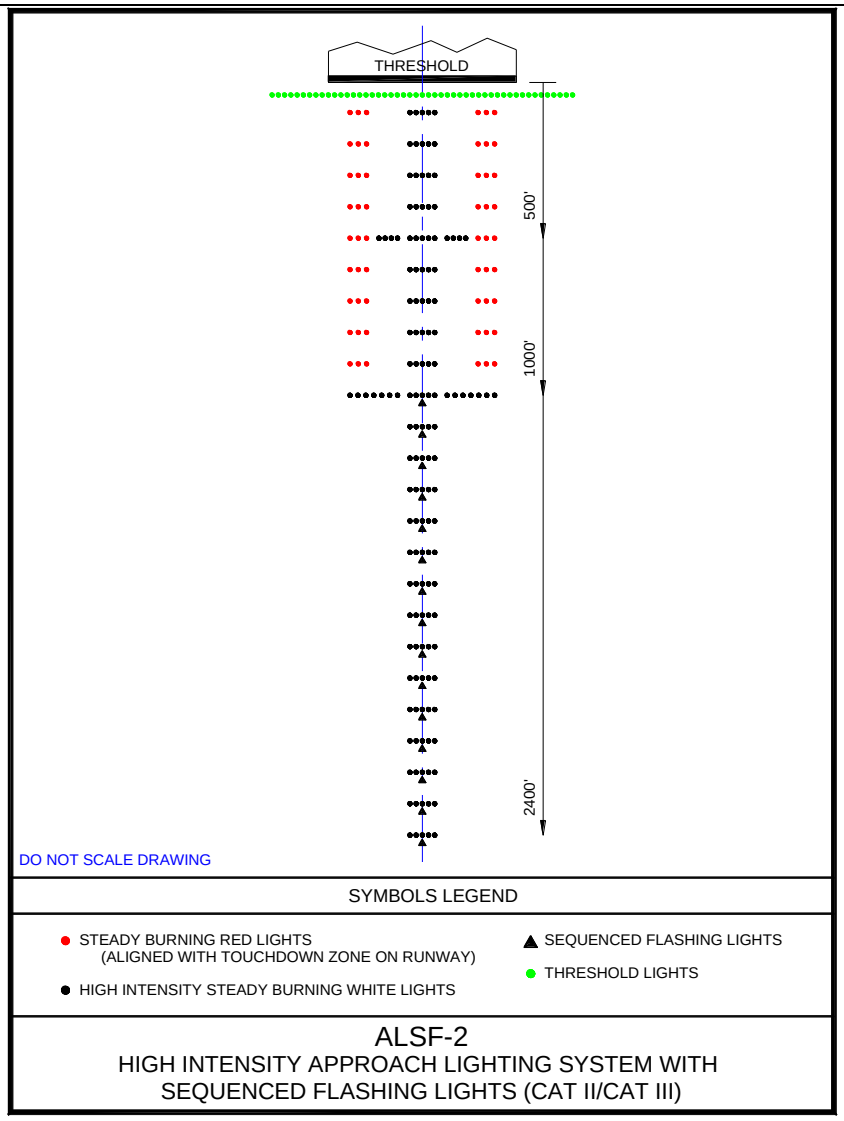
5. MALSF- Medium Intensity Approach Light System with Sequenced Flashing Lights.

6. MALSR- Medium Intensity Approach Light System with Runway Alignment Indicator Lights.

7. LDIN- Lead-in-light system.

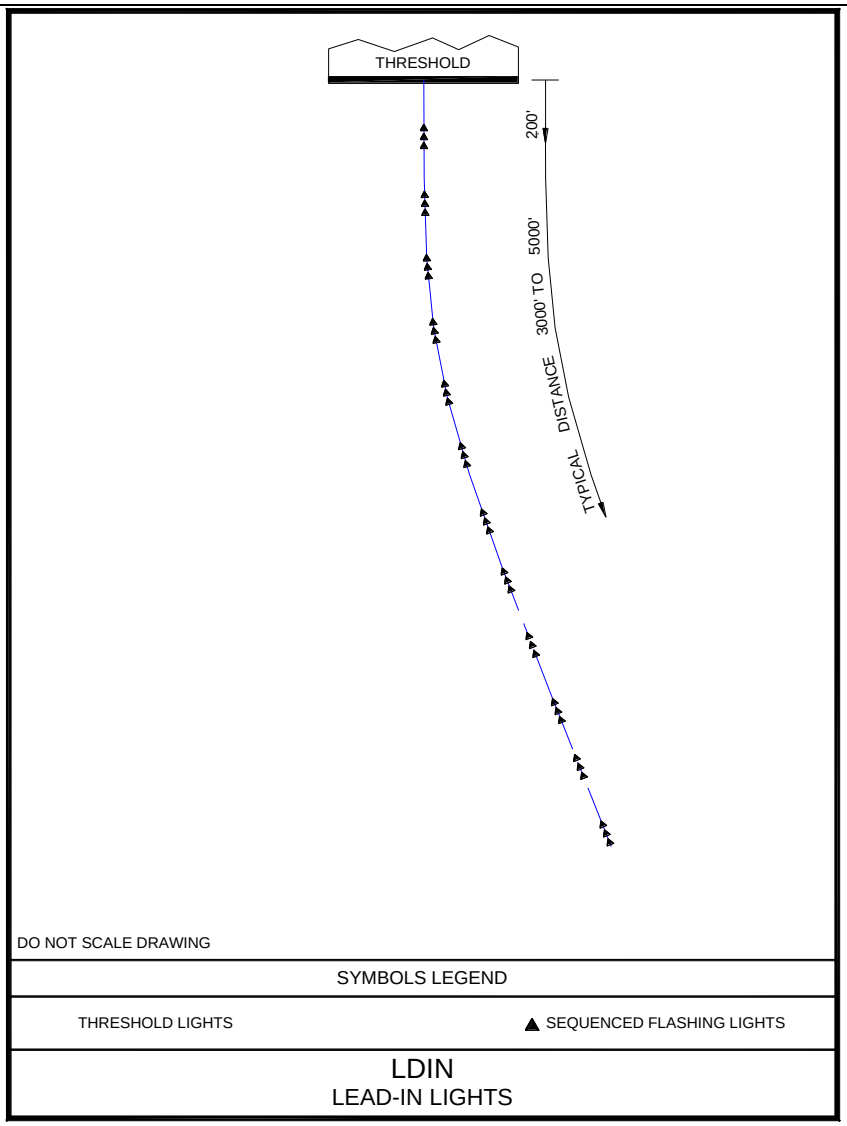
8. RAIL- Runway Alignment Indicator Lights- Sequenced Flashing Lights which are installed only in combination with other light systems.

9. ODALS- Omnidirectional Approach Lighting System.

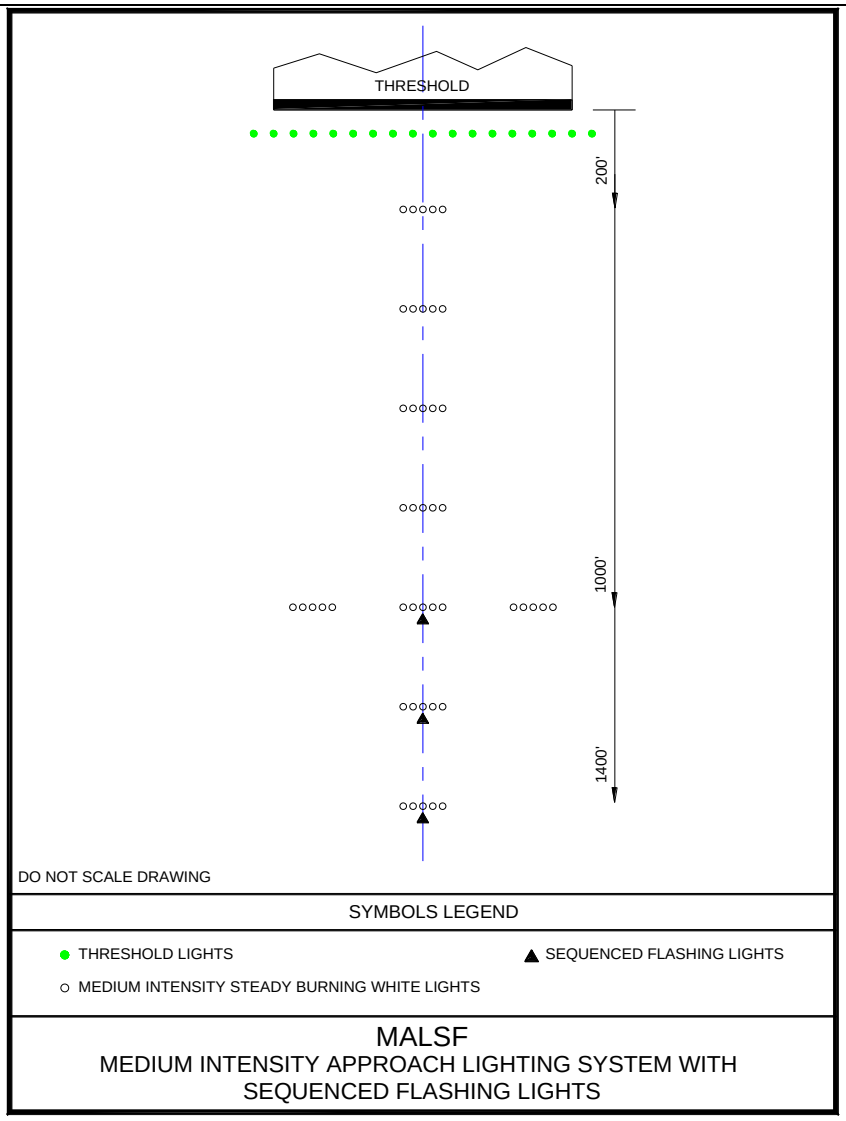


ALSF-2
HIGH INTENSITY APPROACH LIGHTING SYSTEM WITH SEQUENCED FLASHING LIGHTS (CAT II/CAT III)

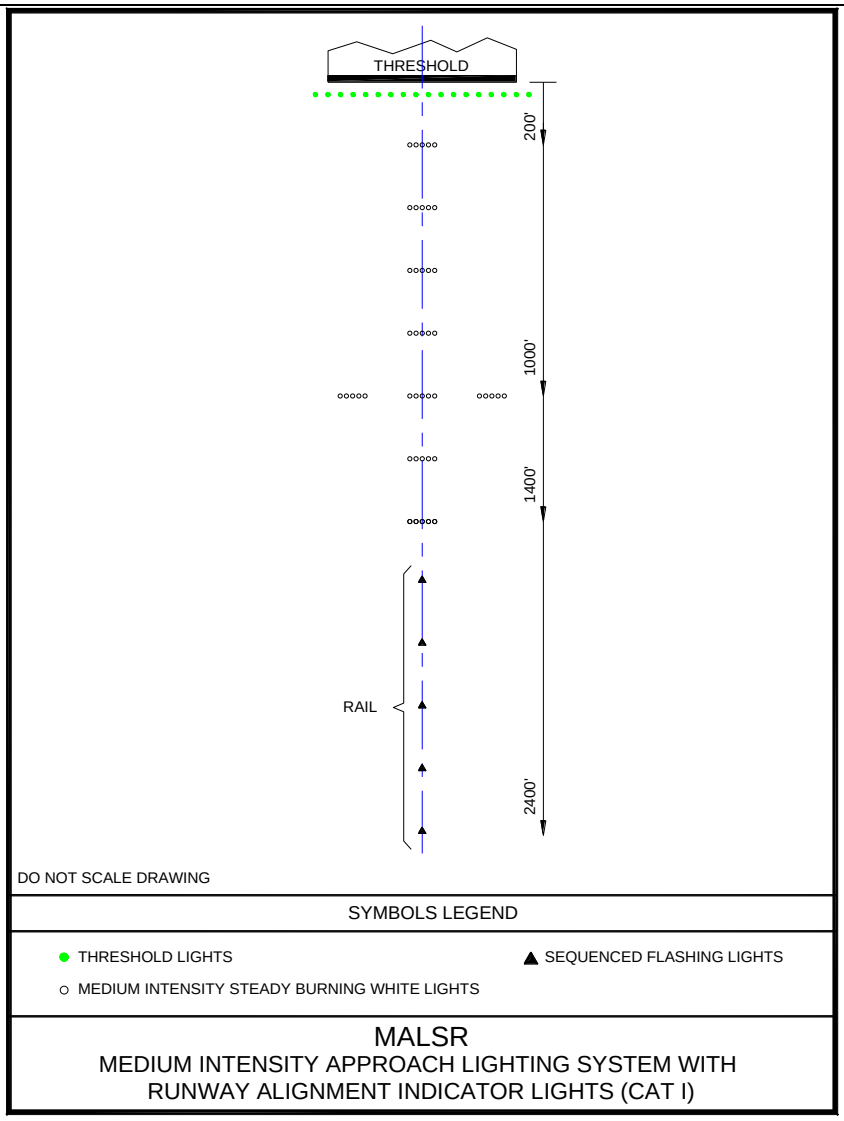
The ALSF-2 is a system of light bars and barrettes in the approach zone immediately ahead of the runway threshold. The standard length of an ALSF-2 is 3000 feet unless terrain or other local conditions prevent a full length installation. Then the length may be shortened to not less than 2400 feet. The ALSF-2 consists of centerline light barrettes, sequence 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.



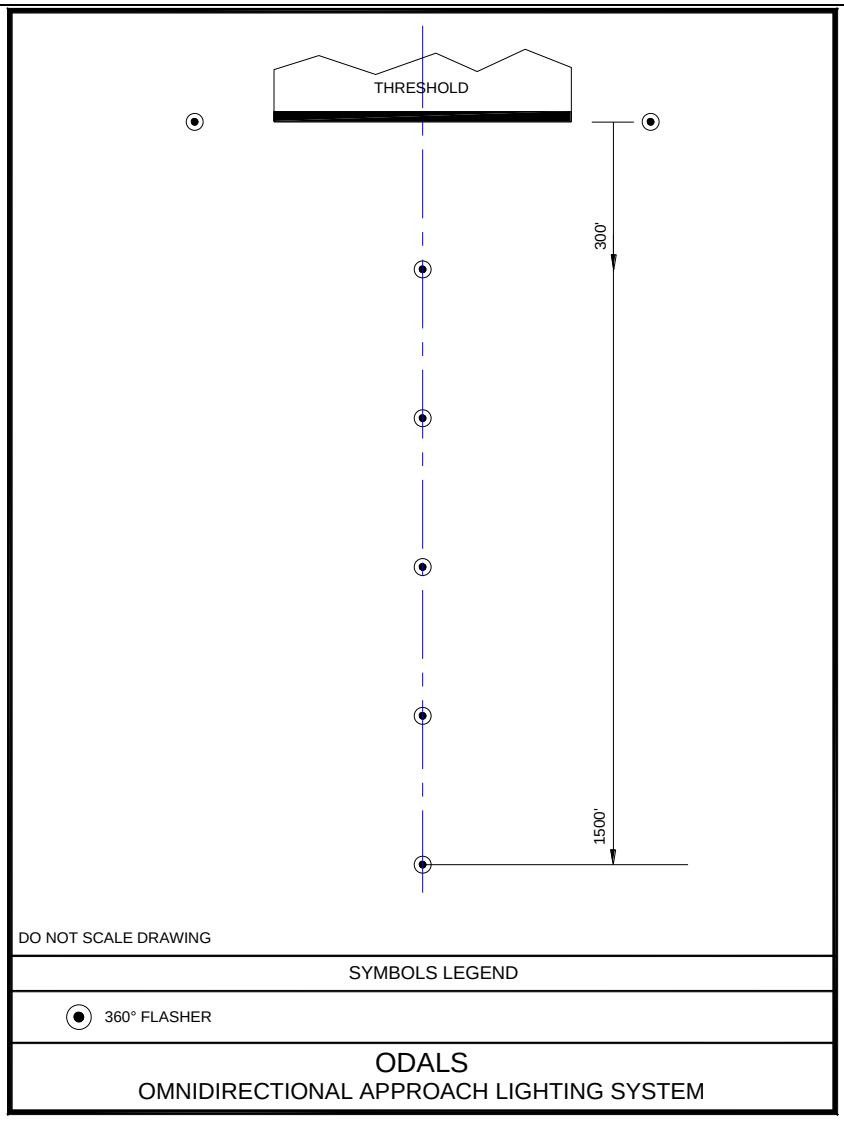
The LDIN consists of one or more series of flashing lights installed at or near ground level that provides positive visual guidance along an approach path, either curving or straight, where special problems exist with hazardous terrain, obstructions, or noise abatement procedures.



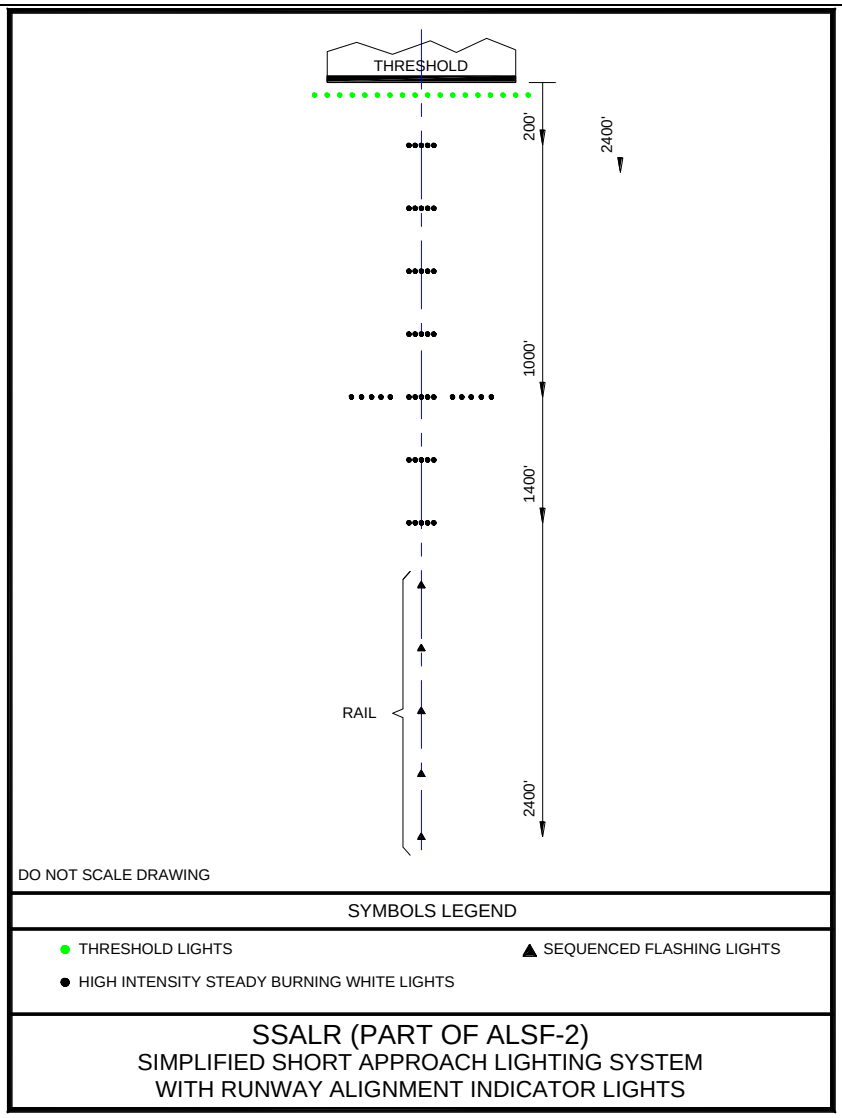
A MALSF is a subset of MALSR. A MALSR has 45 lights, 5 flashers, and is 2400 ft in length. A MALSF has 45 lights, 3 flashers, and is 1400 ft in length. MALS has 45 lights, no flashers, and is 1400 ft in length.



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)	Identifes 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**	*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: *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.*				
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	

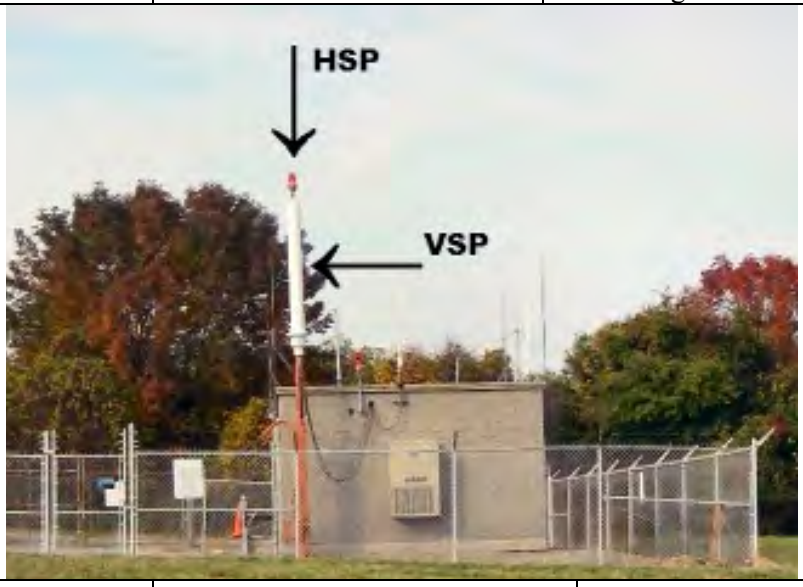
Feature Attributes	
Attribute (Datatype)	**Description**
name (VARCHAR2 (50))	Name of the feature
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, 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)	Identifes 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**	**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: *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.*				
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	

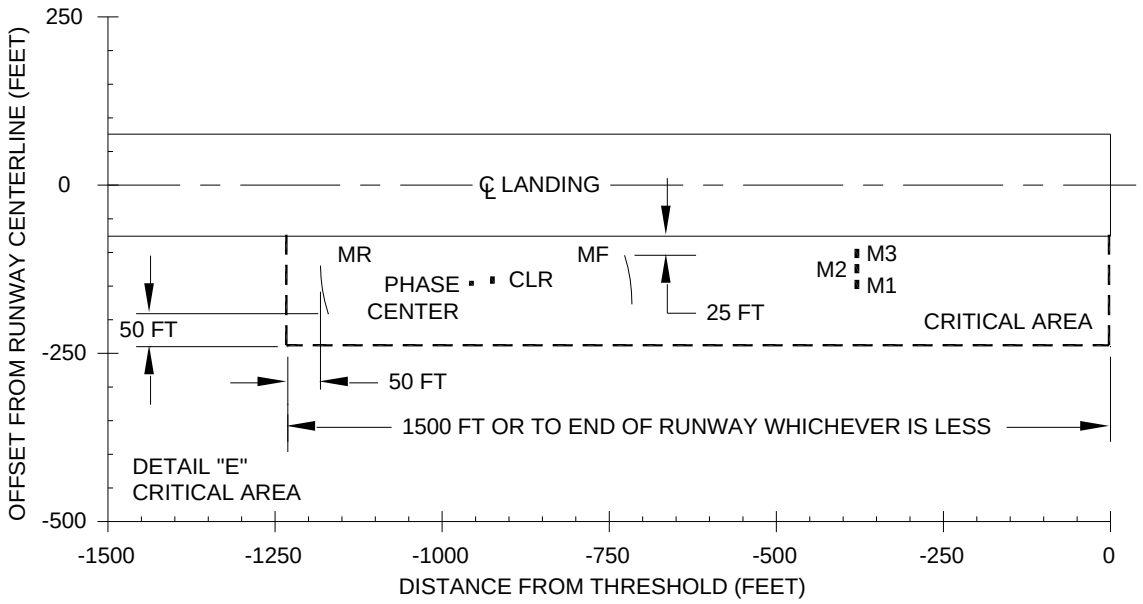
Feature Attributes

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)	Identifes 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**	*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: *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.*				
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)	Identifes 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**	*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: *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.*				
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 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)	Identifes 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**	*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: *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.*				
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)	Identifes 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**	**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: *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.*

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)	Identifes 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")

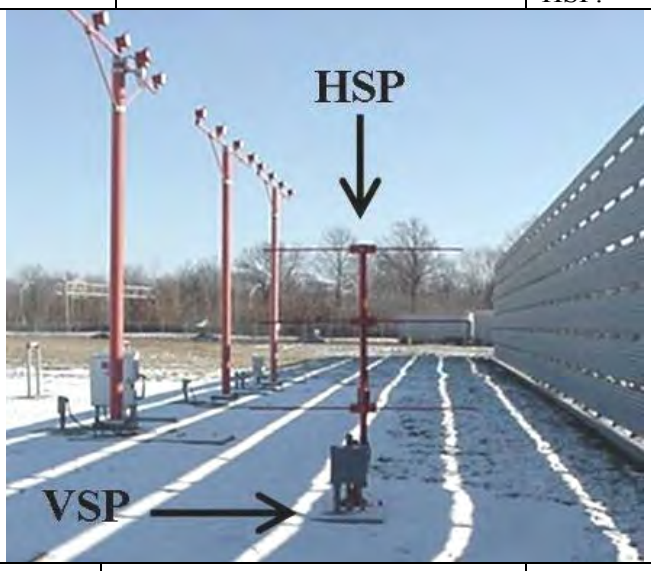
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.
owner (String 75)	The owner of the facility
runwayEndId (String 3)	Identify the primary instrument runway served by the facility. When more than one runway 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**	*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: *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.*		
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)	Identifes 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)

<table>
<tr><td colspan="6">Definition: The component of an ILS that provides course guidance to the runway.</td></tr>
<tr><td>Feature Group</td><td colspan="5">Navigational Aids</td></tr>
<tr><td>Feature Class Name</td><td colspan="5">NavaidEquipment</td></tr>
<tr><td>Feature Type</td><td colspan="5">Point</td></tr>
<tr><td colspan="6">CADD Standard Requirements</td></tr>
<tr><td>Layer/Level</td><td colspan="5">Description</td></tr>
<tr><td>C-AFLD-AIDS-</td><td colspan="5">Airfield Navigational Aid -</td></tr>
<tr><td></td><td>Color</td><td>Line Type</td><td>Line Weight</td><td colspan="2">Symbol</td></tr>
<tr><td>AutoDesk Standards</td><td>4</td><td rowspan="2">Continuous</td><td>1</td><td colspan="2" rowspan="2">User Defined</td></tr>
<tr><td>MicroStation Standards</td><td>7</td><td>7</td></tr>
<tr><td>Information Assurance Level</td><td colspan="5">Unclassified</td></tr>
<tr><td rowspan="3">Equivalent Standards</td><td>AIXM</td><td colspan="2">NavaidEquipment</td><td colspan="2">Extension</td></tr>
<tr><td>FGDC</td><td colspan="2">NavaidEquipmentExtension</td><td colspan="2">Extension</td></tr>
<tr><td>SDSFIE</td><td colspan="3">navigational_aid_point</td></tr>
<tr><td>Documentation and Submission Requirements</td><td colspan="5">Document this feature as described in paragraphs 1.5.2 and 1.5.3.</td></tr>
<tr><td>Related Features</td><td colspan="5"></td></tr>
<tr><td colspan="6">Data Capture Rules: 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.</td></tr>
<tr><td>Monumentation</td><td colspan="5">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.</td></tr>
<tr><td rowspan="2">Survey Point Location</td><td colspan="3">Horizontal</td><td colspan="2">Vertical</td></tr>
<tr><td colspan="3">Center of Antenna Supporting Structure</td><td colspan="2">The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.</td></tr>
</table>

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.

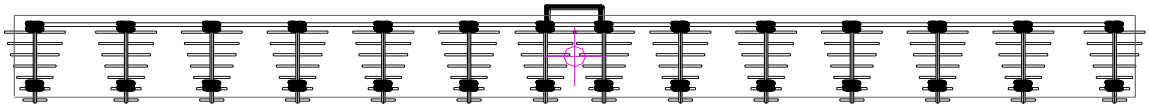


Illustration of a localizer antenna array depicting each of the elements and the selection of the HSP and Vertical Point #1.

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)	Identifes 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**	*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: *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.*				