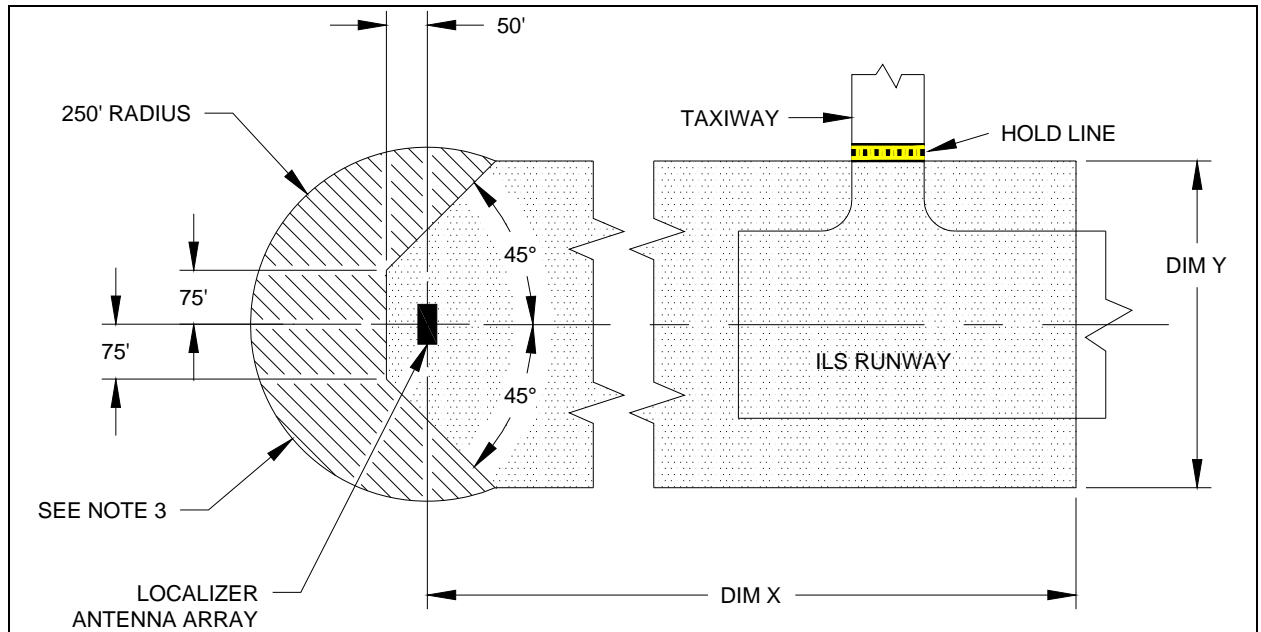


## 5.10. Group: NAVIGATIONAL AIDS

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

### 5.10.1. NAVAID Critical Area

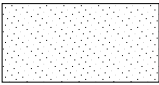
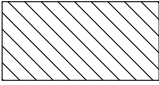
<b>Definition:</b> A zone encompassing a specific ground area in the vicinity of a radiating antenna array which must be protected from parking and unlimited movement of surface and air traffic. The drawings included in this table are representative, be sure to refer to the official source to ensure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



DIMENSIONS X AND Y VALUES (IN FEET)

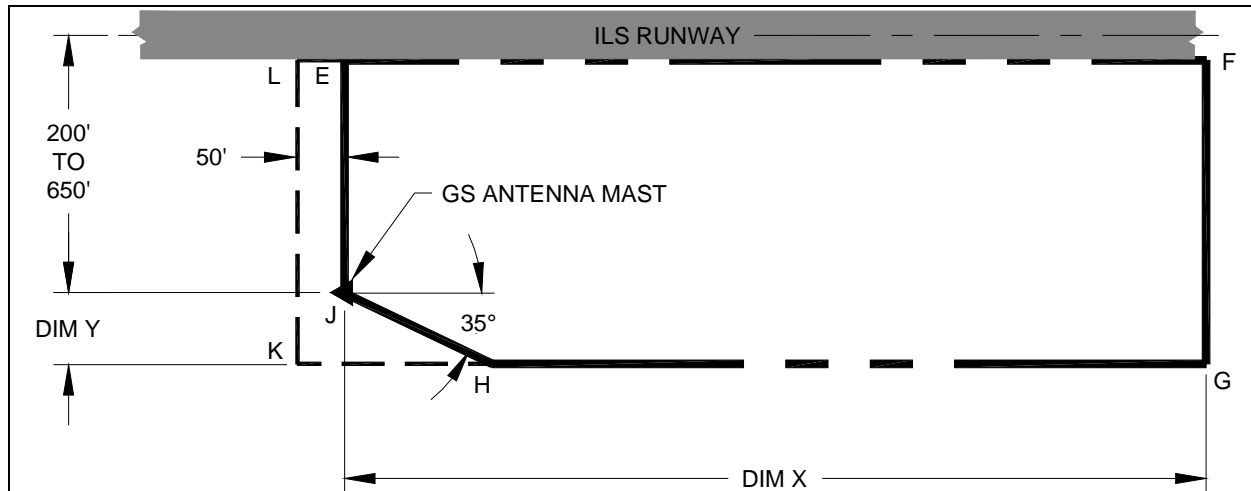
	<u>DIM X</u>	<u>DIM Y</u>
CATEGORY I (SEE NOTE 4)	2000	400
CATEGORY II/III (SEE NOTE 5)	2000	400
CATEGORY II	4000	500
CATEGORY III	7000	500

LEGEND

AREA A	
AREA B	

**NOTES:**

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



NOTES:

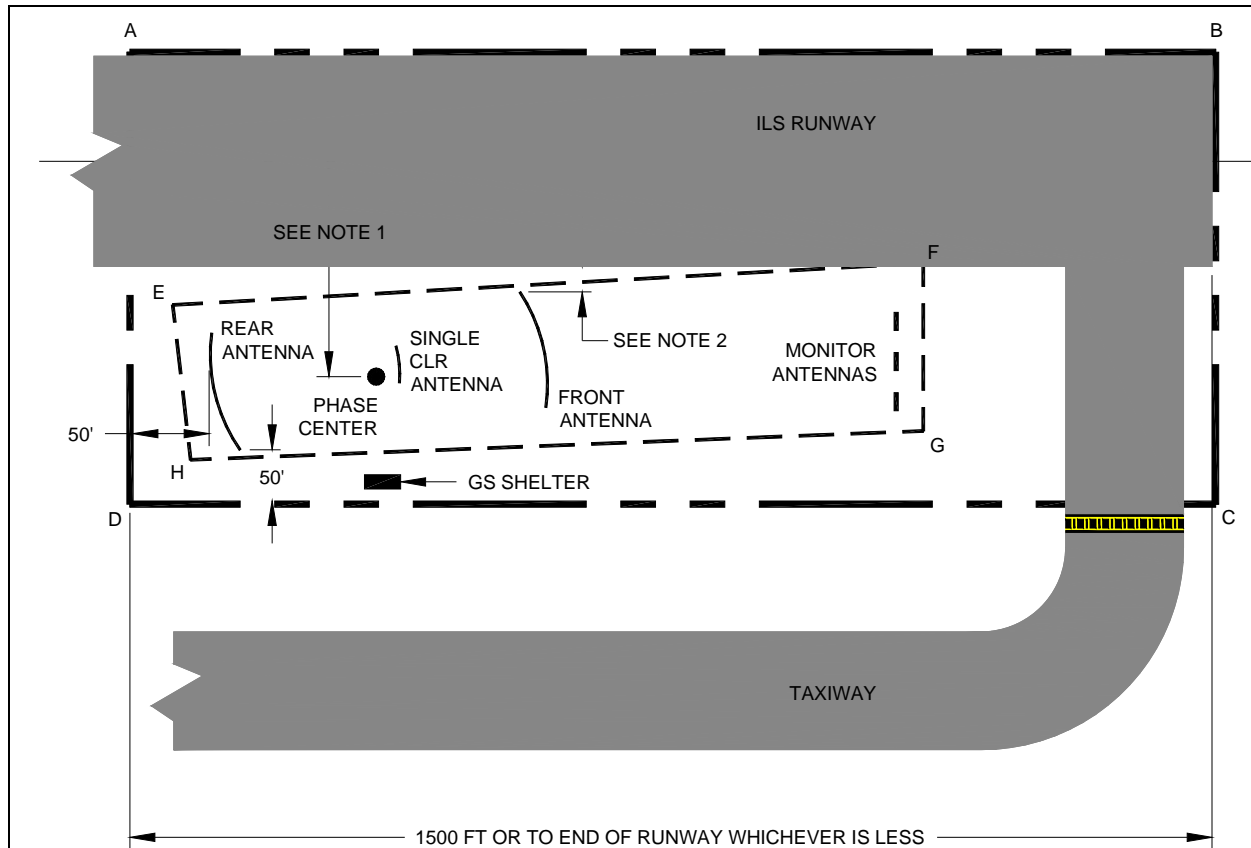
1. THE CRITICAL AREA IS DEFINED BY THE PENTAGON "EFGHJ".
2. ALL AIRCRAFT MAY BE PARKED AS CLOSE AS 50' BEHIND A GLIDESLOPE MAST WITH DIRECTIONAL ANTENNAS AS DEFINED BY LINE "KL".

3. FACILITY TYPE	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:

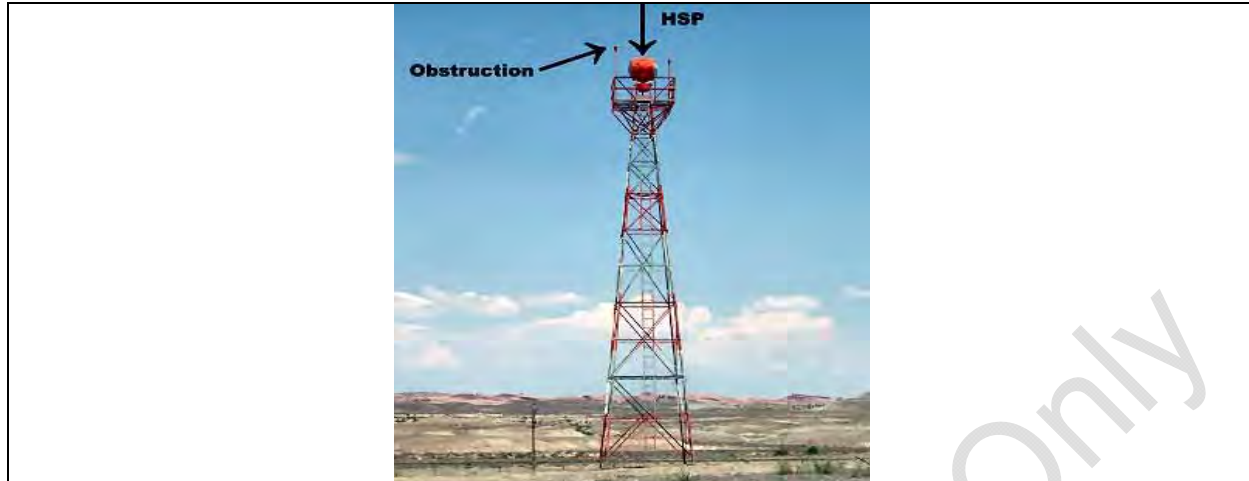
1. THIS DISTANCE IS APPROXIMATELY 200 FEET DEPENDING ON RUNWAY WIDTH. REFER TO FAA DRAWINGS D-6226-1 AND D-6226-2 FOR INSTALLATION LAYOUT.
2. THIS DISTANCE SHALL NOT BE LESS THAN 25 FEET.
3. THE CRITICAL AREA IS DEFINED BY THE AREA "ABCD". UNRESTRICTED TAXIING OR HOLDING AIRCRAFT IS PERMITTED IN UNSHAPED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

<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 3 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 5 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Hundredth of arc second		Tenth of foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
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 (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

### 5.10.2. Navaid Equipment – Airport Beacon (APBN)

<b>Definition:</b> 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.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>FGDC</b>	<i>NavigationalAidEquipment</i>		
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b>	<i>Collect the horizontal and vertical positions of the NAVAID using the survey point identified below. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID using the OBSTACLE feature type and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>			
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Center of cover or axis of rotation		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	



<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>	<b>Vertical</b>	
	± 5 ft	<b>Orthometric</b> ± 10 ft	<b>Ellipsoidal</b> N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>	<b>Distances and Elevations</b>	
	Hundredth of arc second	Nearest one foot	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>		<b>Description</b>	
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 [Source: NGS]	
NavigationalAidSystemType		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System.	
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)		The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	

centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	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)**

<b>Definition:</b> 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.	
<b>Feature Group</b>	Navigational Aids
<b>Feature Class Name</b>	NavaidEquipment

<b>Feature Type</b>	Point		
<b>CADD Standard Requirements</b>			
<b>Layer/Level</b>	<b>Description</b>		
C-AFLD-AIDS-	Airfield Navigational Aid -		
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>
<b>AutoDesk Standards</b>	4	Continuous	1
<b>MicroStation Standards</b>	7		7
<b>Sensitivity</b>	Unclassified		
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>	Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>	Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>	
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.		
<b>Related Features</b>			
<b>Data Capture Rules:</b> <i>Collect the horizontal and vertical positions of the NAVAID using the survey point identified below. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as using the OBSTACLE feature type and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>			
<b>Monumentation</b>	No monumentation required.		
<b>Survey Point Location</b>	<b>Horizontal</b>	<b>Vertical</b>	
	Center of cover or axis of rotation	The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>	<b>Vertical</b>	
		<b>Orthometric</b>	<b>Ellipsoidal</b>
	± 10 ft	± 20 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>	<b>Distances and Elevations</b>	
	Hundredth of arc second	Nearest one foot	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>	<b>Description</b>		
name (VARCHAR2 (50))	Name of the feature		



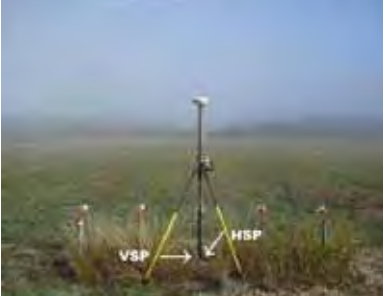


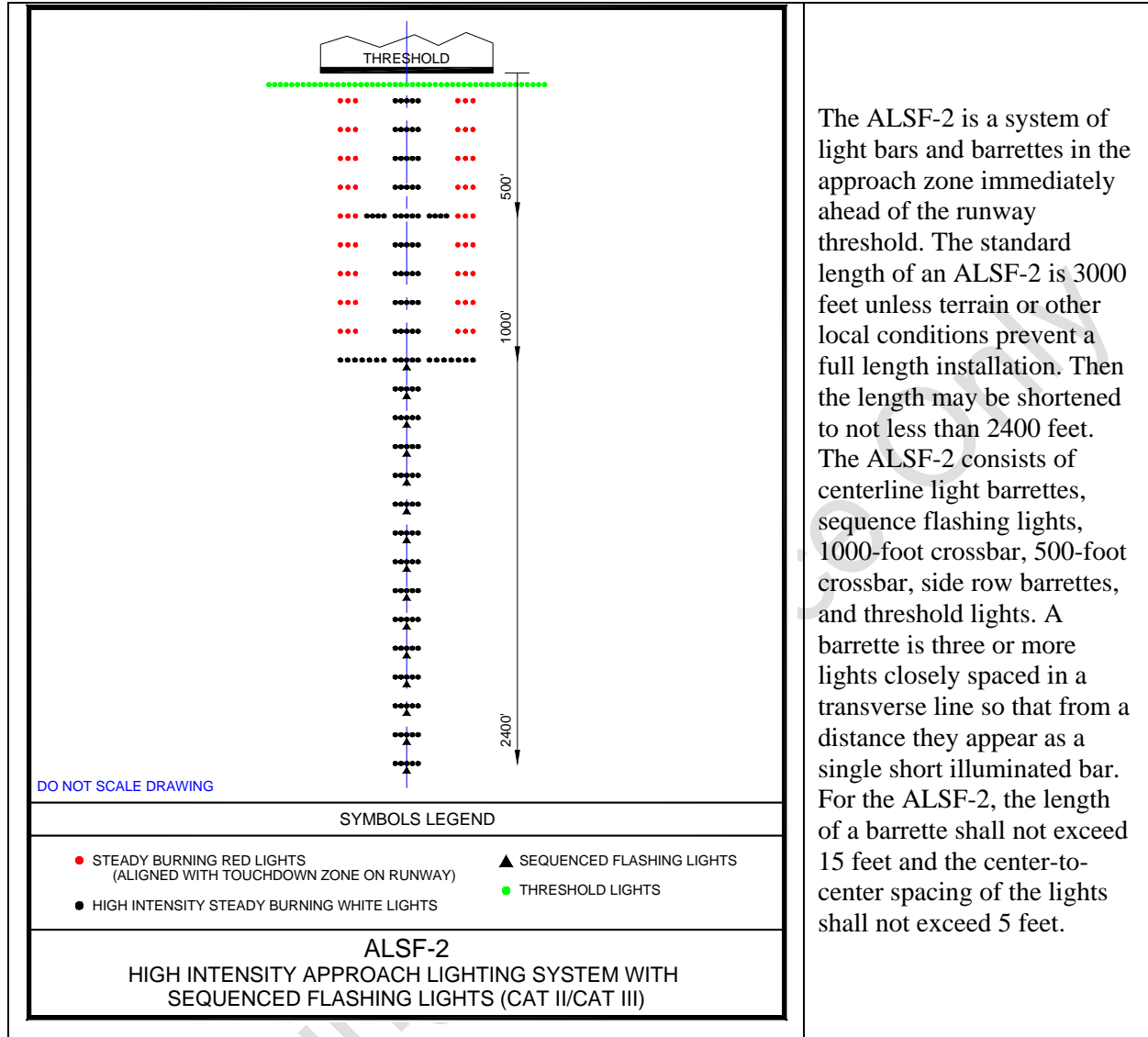
description (VARCHAR2 (255))	A description or other unique information concerning the subject item, limited to 255 characters.
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used 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 [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

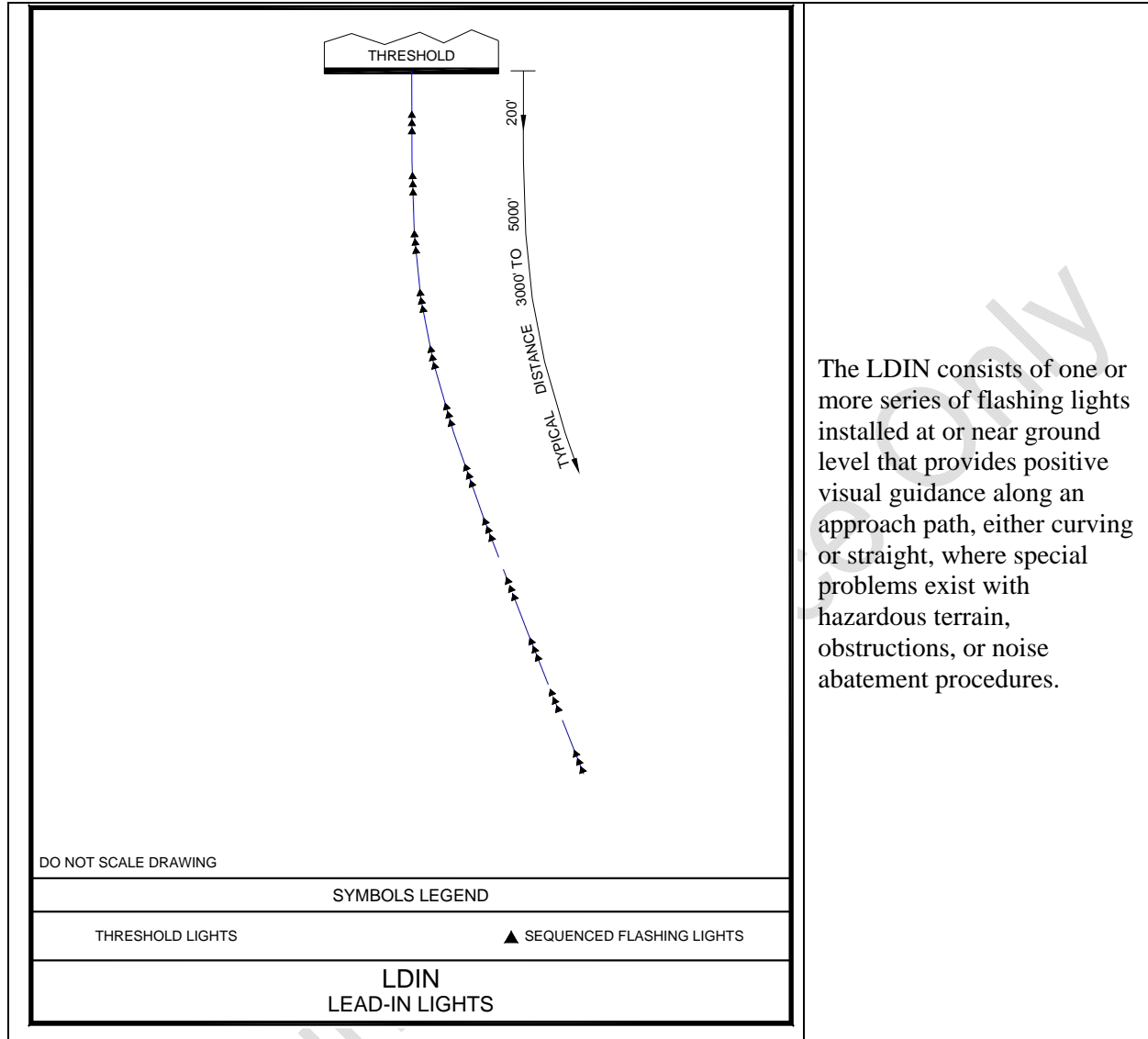
**5.10.4. Navaid Equipment – Approach Light System (ALS)**

<b>Definition:</b> 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.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the horizontal and vertical positions of the NAVAID using the survey point identified below. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as using the OBSTACLE feature type and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Horizontal center of the center light of the first and last lights rows		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	

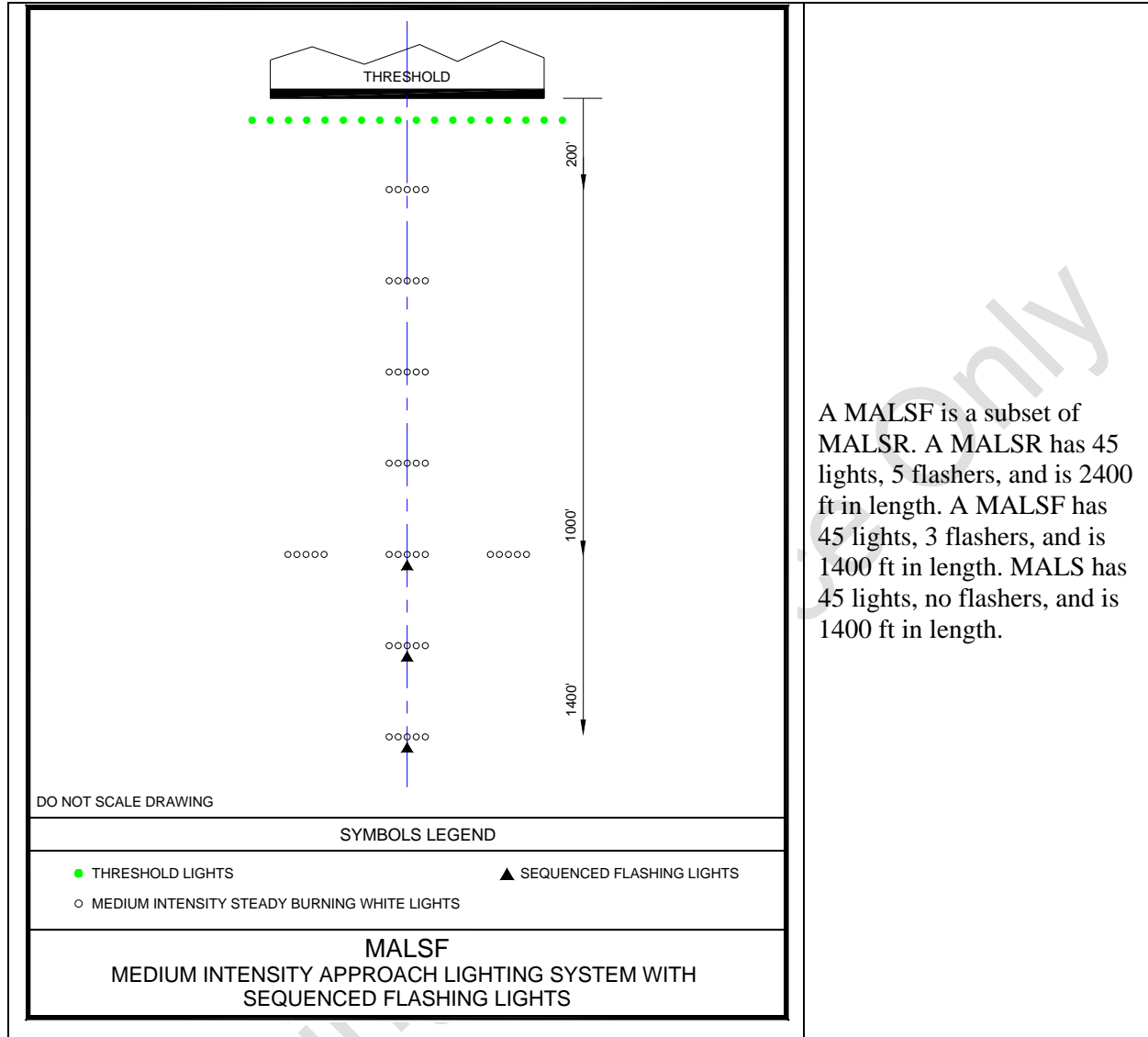
		
<p>Pilot's perspective of an ALSF-2.</p>	<p>Collecting the first light or center light of the first row.</p>	<p>Collecting the last light or center light of last row.</p>
<p>Types of Approach Light Systems are:</p> <ol style="list-style-type: none"> <li>1. ALSF-1- Approach Light System with Sequenced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



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

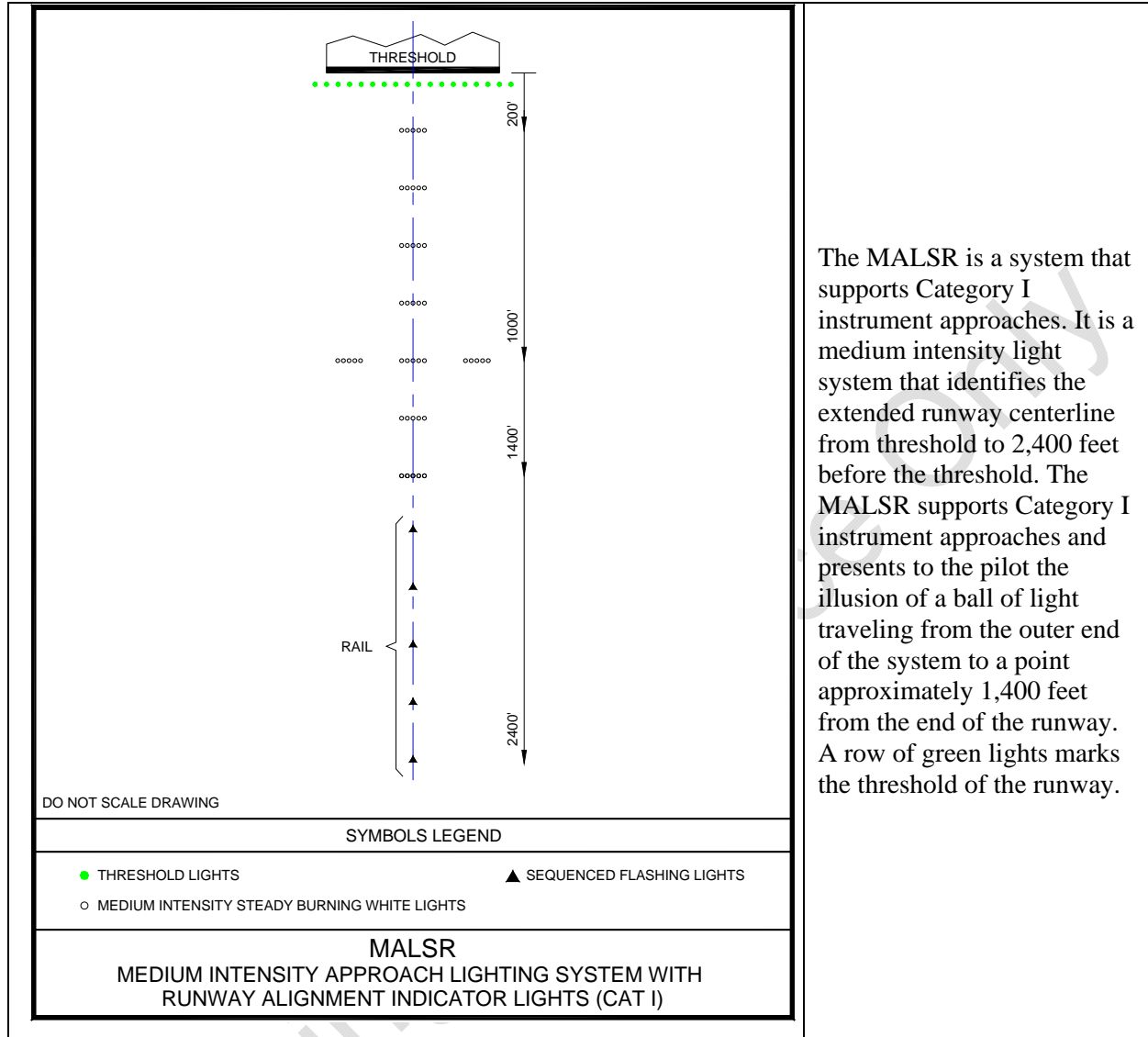


The LDIN consists of one or more series of flashing lights installed at or near ground level that provides positive visual guidance along an approach path, either curving or straight, where special problems exist with hazardous terrain, obstructions, or noise abatement procedures.

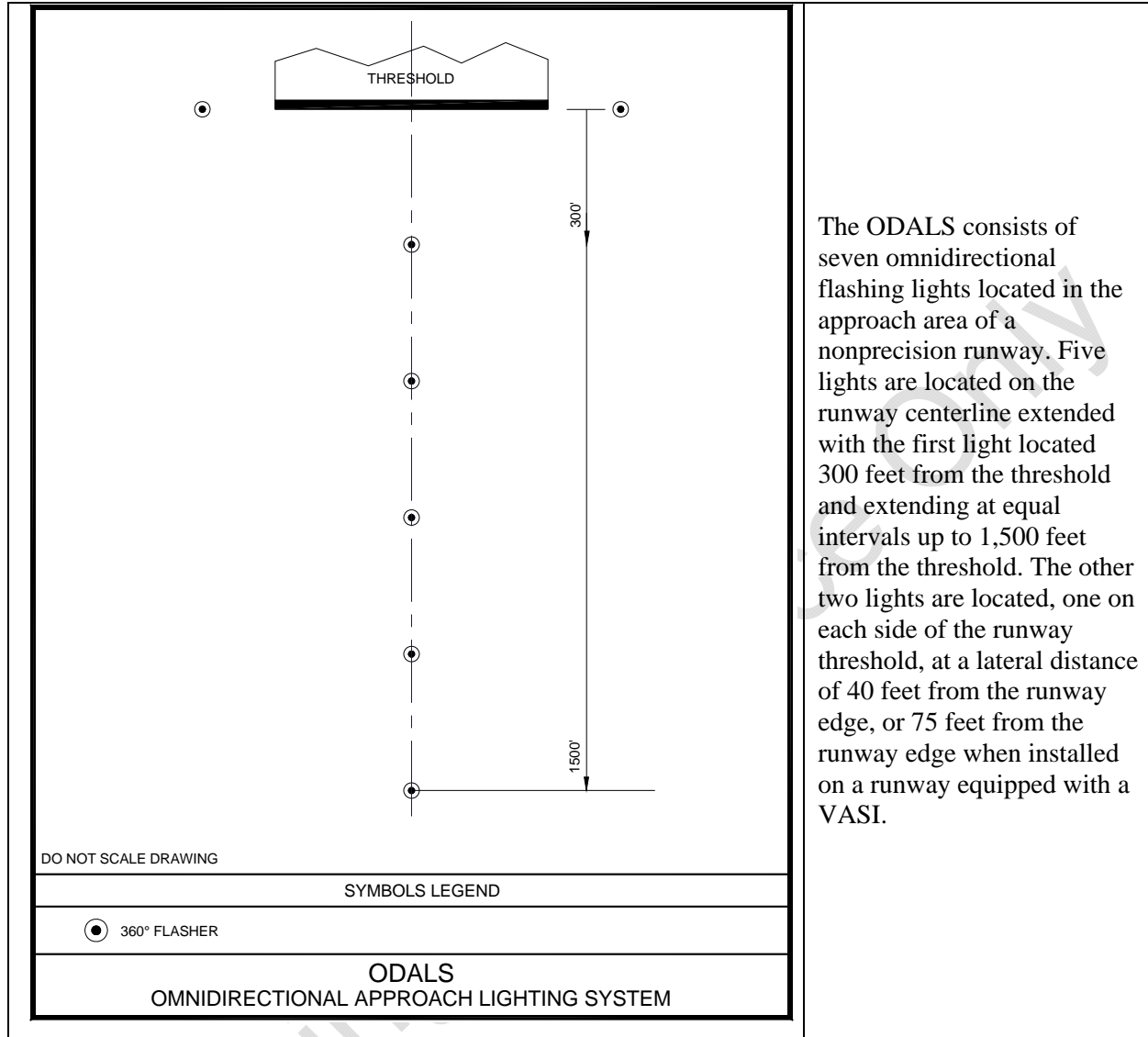


A MALSF is a subset of MALSR. A MALSR has 45 lights, 5 flashers, and is 2400 ft in length. A MALSF has 45 lights, 3 flashers, and is 1400 ft in length. MALS has 45 lights, no flashers, and is 1400 ft in length.

Planning



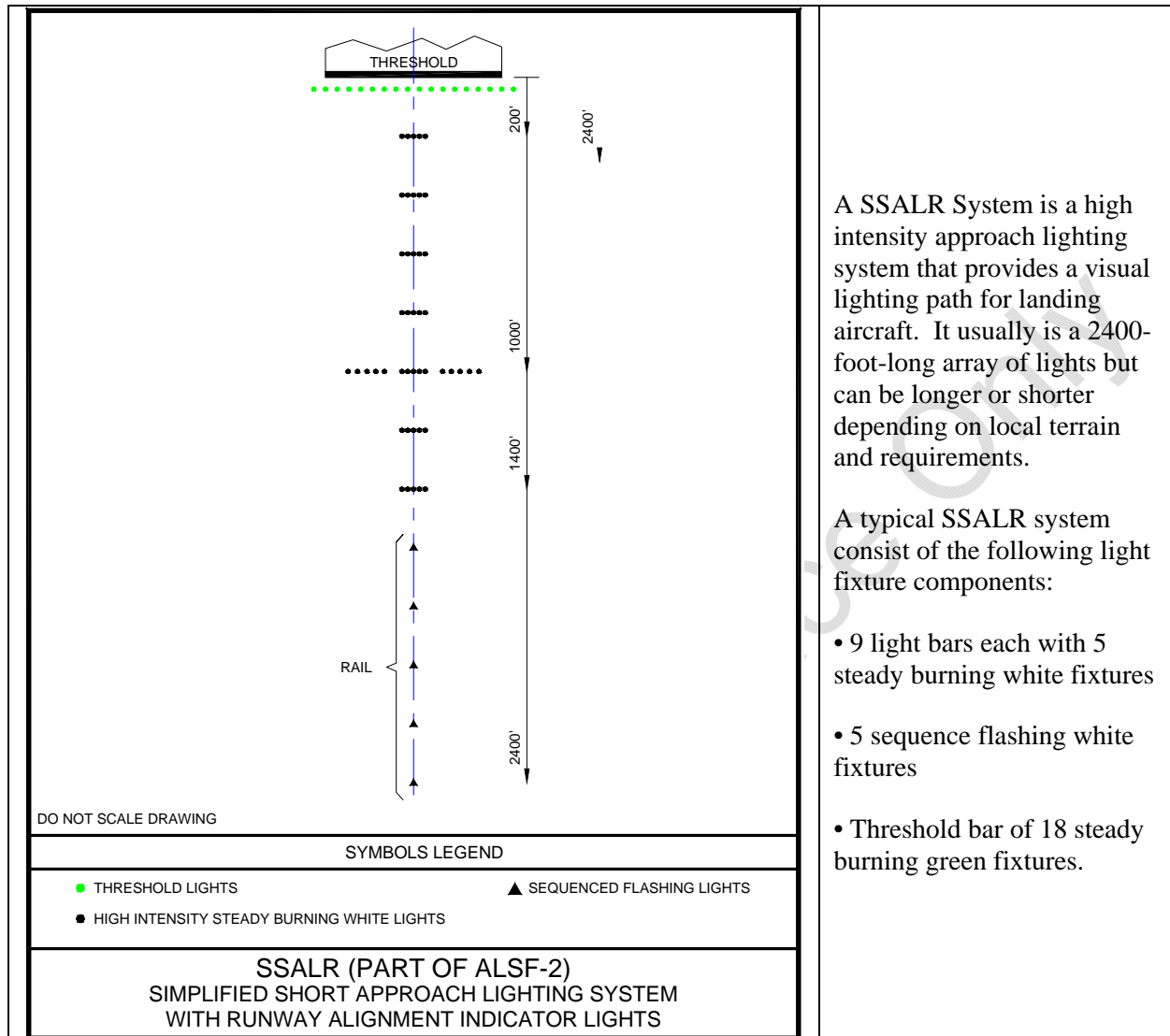
The MALSR is a system that supports Category I instrument approaches. It is a medium intensity light system that identifies the extended runway centerline from threshold to 2,400 feet before the threshold. The MALSR supports Category I instrument approaches and presents to the pilot the illusion of a 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.

Planning





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.

<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>	<b>Vertical</b>	
		<b>Orthometric</b>	<b>Ellipsoidal</b>
	± 3 ft	± 5 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>	<b>Distances and Elevations</b>	
	Hundredth of arc second	Nearest one foot	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>	<b>Description</b>		
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 [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.5. Navaid Equipment – Back Course Marker (BCM)**

<b>Definition:</b> Provides runway alignment aircraft guidance on approach.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the horizontal and vertical positions of the NAVAID using the survey point identified below. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as using the OBSTACLE feature type and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Center of antenna array.		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
			<b>Orthometric</b>	<b>Ellipsoidal</b>
	± 10 ft		± 20 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Hundredth of arc second		Nearest one foot	

<b>Feature Attributes</b>	
<b>Attribute (Datatype)</b>	<b>Description</b>
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 [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.


**5.10.6. Navaid Equipment – Distance Measuring Equipment (DME)**

<b>Definition:</b> Provides distance (and in some systems groundspeed) information only from the ground facility to aircraft.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
DME or DME paired with a LOC	Center of antenna cover.		Center of antenna cover.	

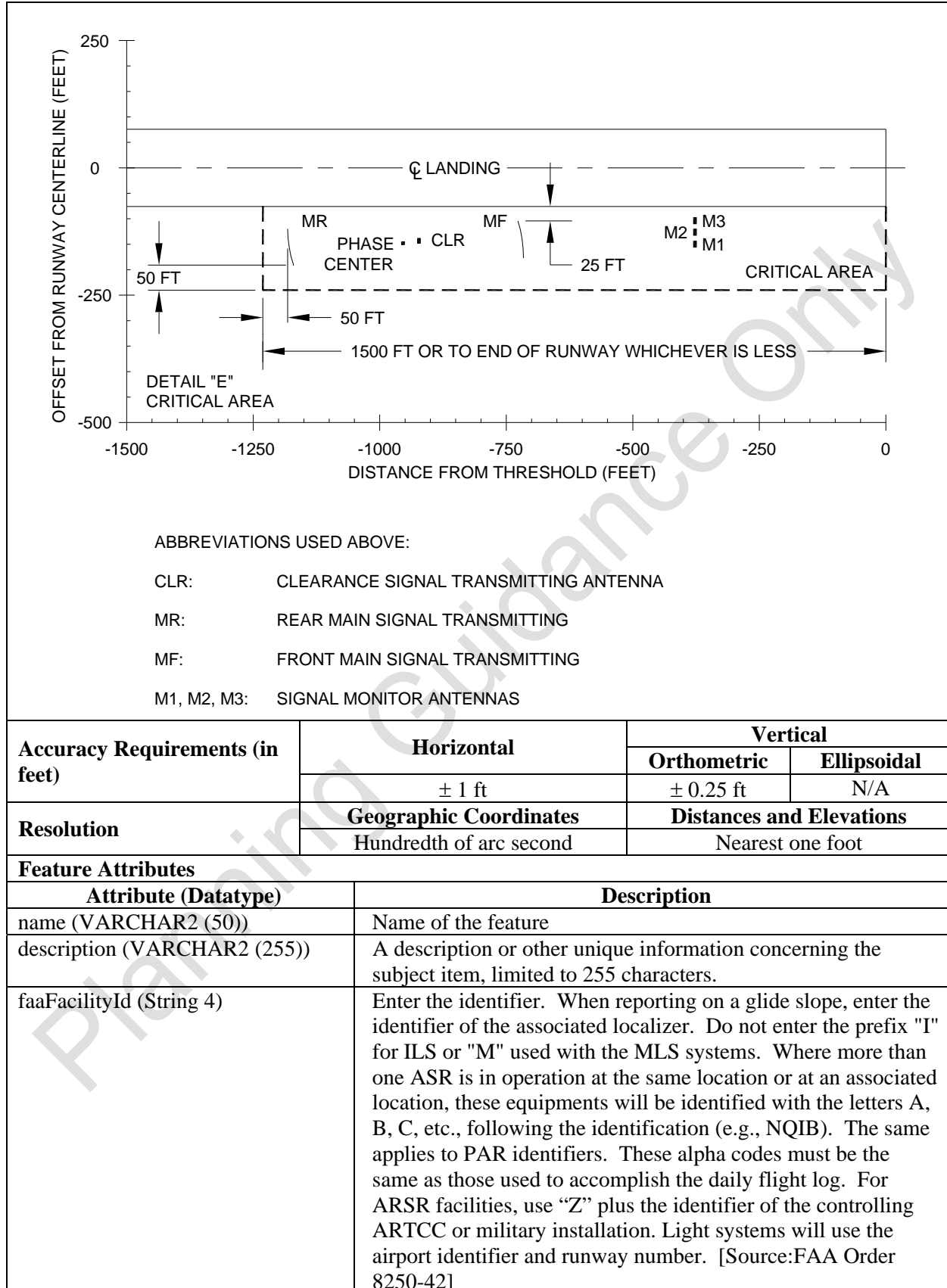
DME frequency paired with MLS azimuth, NDB or VOR	Center of antenna cover	The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
			
Accuracy Requirements (in feet)	<b>Horizontal</b>	<b>Vertical</b>	
	± 1 ft	<b>Orthometric</b>	<b>Ellipsoidal</b>
Resolution	<b>Geographic Coordinates</b>	± 1 ft	N/A
	Hundredth of arc second	<b>Distances and Elevations</b>	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>	<b>Description</b>		
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 [Source: NGS]		
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System		

useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

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

<b>Definition:</b> Provides vertical guidance for aircraft during approach and landing.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Phase center reference point.		Phase center reference point.	
				





navaidEquipmentType (Enumeration: CodeNavaidequipmentType)	Specifies the type of NAVAID [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

### 5.10.8. Navaid Equipment – Fan Marker (FM)

<b>Definition:</b> Electronic NAVAID that provides horizontal (alignment) guidance for aircraft on a final approach.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Center of antenna array.		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 10 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Hundredth of arc second		Nearest one foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
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 [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.9. Navaid Equipment – Glideslope (GS)**

<b>Definition:</b> Provides vertical guidance for aircraft during approach and landing.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Center of Antenna Supporting Structure		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	



<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 1 ft		<b>Orthometric</b> ± 0.25 ft	<b>Ellipsoidal</b> ± 0.20 ft
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Hundredth of arc second		Nearest one foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
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 [Source: NGS]		
NavigationalAidSystemType		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System		
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.		

antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	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.

<b>Feature Group</b>	Navigational Aids		
<b>Feature Class Name</b>	NavaidEquipment		
<b>Feature Type</b>	Point		
<b>CADD Standard Requirements</b>			
<b>Layer/Level</b>	<b>Description</b>		
C-AFLD-AIDS-	Airfield Navigational Aid -		
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>
<b>AutoDesk Standards</b>	4	Continuous	1
<b>MicroStation Standards</b>	7		7
<b>Sensitivity</b>	Unclassified		
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>	Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>	Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>	
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.		
<b>Related Features</b>			
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>			
<b>Monumentation</b>	No monumentation required.		
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>
	Center of Antenna Array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.
			
<b>Accuracy Requirements (in</b>	<b>Horizontal</b>		<b>Vertical</b>



<b>feet)</b>		<b>Orthometric</b>	<b>Ellipsoidal</b>
	$\pm 10$ ft	$\pm 20$ ft	$\pm 20$ ft
<b>Resolution</b>	<b>Geographic Coordinates</b>	<b>Distances and Elevations</b>	
	Hundredth of arc second	Nearest one foot	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>		<b>Description</b>	
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 [Source: NGS]	
NavigationalAidSystemType		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)		The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	
centerlineDistance (Real)		Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.	
stopEndDistance (Real)		Provide the distance distance the from the antenna along the centerline to the stop end of the runway.	
offsetDistance (Real)		The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.	
offsetDirection (Enumeration: CodeOffsetDirection)		Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.	
lightingType (Enumeration: CodeLightingConfigurationType)		The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.11.Navaid Equipment – Inner Marker (IM)**

<b>Definition:</b> 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.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS- -	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			

<b>Related Features</b>			
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>			
<b>Monumentation</b>		No monumentation required.	
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>
	Center of Antenna Array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>
	± 10 ft		<b>Orthometric</b> ± 20 ft <b>Ellipsoidal</b> N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>
	Hundredth of arc second		Nearest one foot
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>		<b>Description</b>	
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 [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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.

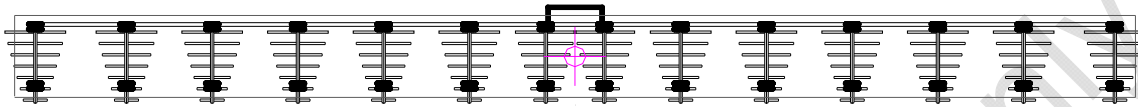
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.12.Navaid Equipment – Localizer (LOC)**

<b>Definition:</b> The component of an ILS that provides course guidance to the runway.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	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.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Center of Antenna Supporting Structure		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	

**Determining the HSP and Vertical Point #1 of a Localizer**

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



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

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



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

<b>Feature Attributes</b>	
<b>Attribute (Datatype)</b>	<b>Description</b>
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 [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

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

<b>Definition:</b> 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.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				




<b>Monumentation</b>	No monumentation required.		
<b>Survey Point Location</b>	<b>Horizontal</b>	<b>Vertical</b>	
	Center of Antenna Supporting Structure	The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>	<b>Vertical</b>	
	$\pm 1$ ft	<b>Orthometric</b>	<b>Ellipsoidal</b>
		$\pm 1$ ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>	<b>Distances and Elevations</b>	
	Hundredth of arc second	Nearest one foot	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>		<b>Description</b>	
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 [Source: NGS]	
NavigationalAidSystemType		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)		The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	
centerlineDistance (Real)		Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.	
stopEndDistance (Real)		Provide the distance distance the from the antenna along the centerline to the stop end of the runway.	
offsetDistance (Real)		The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.	

offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.14.Navaid Equipment – Middle Marker (MM)**

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

<b>Sensitivity</b>	Unclassified		
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>	Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>	Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>	
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.		
<b>Related Features</b>			
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>			
<b>Monumentation</b>	No monumentation required.		
<b>Survey Point Location</b>	<b>Horizontal</b>	<b>Vertical</b>	
	Center of Antenna Array	The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
			
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>	<b>Vertical</b>	
		<b>Orthometric</b>	<b>Ellipsoidal</b>
	± 10 ft	± 20 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>
	Hundredth of arc second		Nearest one foot
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>		<b>Description</b>	
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 [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.15.Navaid Equipment – MLS Azimuth Antenna (MLSAZ)**

<b>Definition:</b> Antenna in a Microwave Landing System (MLS) providing horizontal guidance for incoming aircraft. MLS is precision instrument approach system operating in the microwave spectrum which normally consists of an Azimuth Station, an Elevation Station and Precision Distance Measuring Equipment.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Phase Center Reference Point		Phase Center Reference Point	



<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	$\pm 1$ ft		<b>Orthometric</b> $\pm 1$ ft	<b>Ellipsoidal</b> N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Hundredth of arc second		Nearest one foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
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 [Source: NGS]		
NavigationalAidSystemType		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System		
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.		
antennaToThresholdDistance (Real)		The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.		

centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

#### 5.10.16.Navaid Equipment – MLS Elevation Antenna (MLSEZ)

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



<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	
<b>AutoDesk Standards</b>	4	Continuous	1	
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	NavaidEquipment		
	<b>FGDC</b>	NavaidEquipmentExtension		
	<b>SDSFIE</b>	navigational_aid_point		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Phase Center Reference Point		Phase Center Reference Point	
<p><b>Note: Black lines added to describe survey point locations</b></p> 				
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 1 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Hundredth of arc second		Nearest one foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
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 [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

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

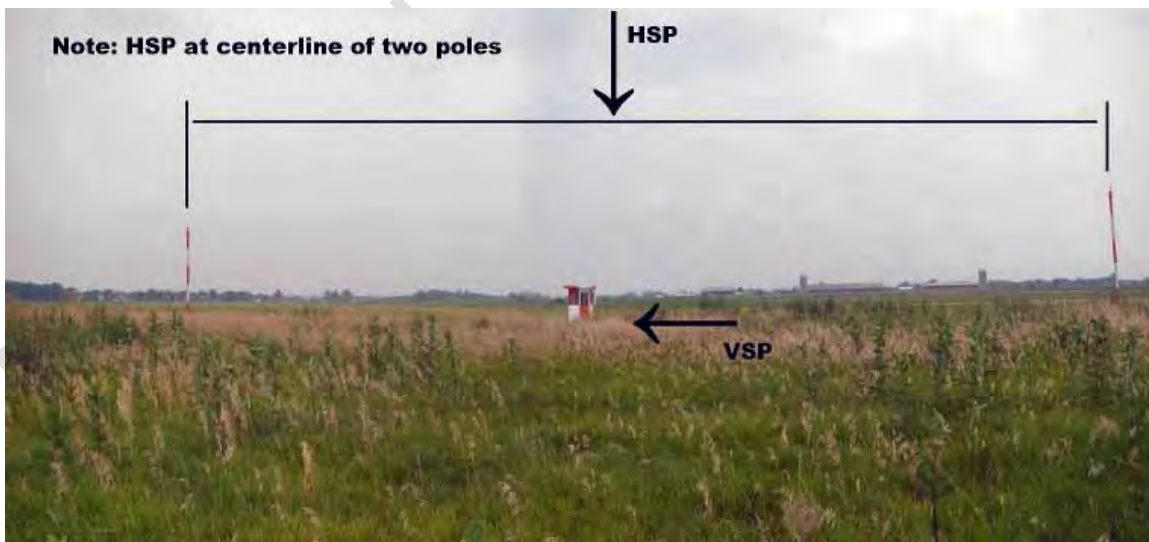
<b>Definition:</b> An L/MF or UHF radio beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his/her bearing to or from the radio beacon and "home" on or track to or from the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a Compass Locator.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			

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

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



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




<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>	<b>Vertical</b>	
		<b>Orthometric</b>	<b>Ellipsoidal</b>
	$\pm 10$ ft	$\pm 20$ ft	N/A

Resolution	Geographic Coordinates	Distances and Elevations
	Hundredth of arc second	Nearest one foot
<b>Feature Attributes</b>		
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 [Source: NGS]	
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.	
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.	
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.	
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.	
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.18.Navaid Equipment – Outer Marker (OM)**

<b>Definition:</b> A marker beacon at or near the glideslope intercept altitude of an ILS approach. It is keyed to transmit two dashes per second on a 400 Hz tone, which is received aurally and visually by compatible airborne equipment. The OM is normally located four to seven miles from the runway threshold on the extended centerline of the runway.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			

<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>		No monumentation required.		
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Center of Antenna Array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
				
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 10 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
		± 20 ft		N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Hundredth of arc second		Nearest one foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
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 [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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.

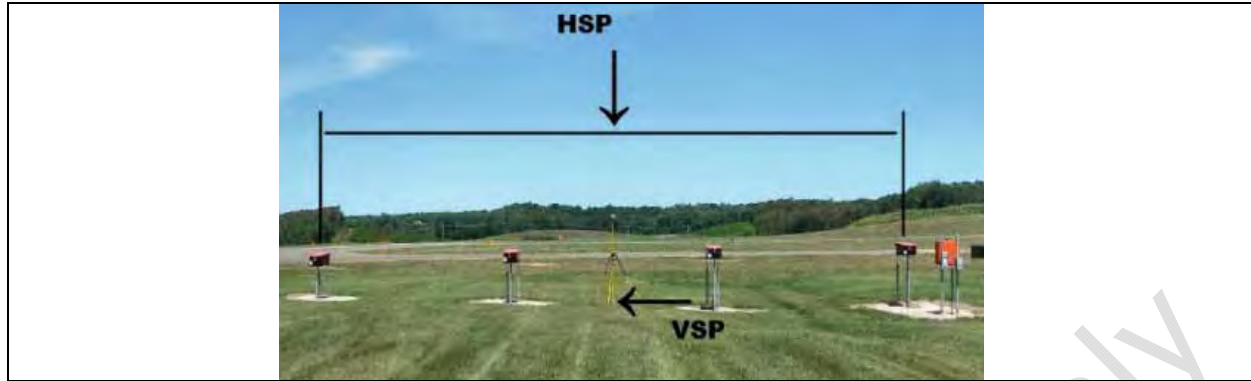
ellipsoidElevation (Real)	The Base Elevation for most NAVAIDs. For ILS DME, the elevation is the center of the antenna cover. For MLSAZ, MLSEL, and End Fire Type Glide Slope Antennas, the elevation is the phase center of the reference point. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

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

<b>Definition:</b> An airport lighting facility, similar to VASI, providing vertical approach slope guidance to aircraft during approach to landing. PAPIs consist of a single row of either two or four lights, normally installed on the left side of the runway, and have an effective visual range of about 5 miles during the day and up to 20 miles at night. PAPIs radiate a directional pattern of high intensity red and white focused light beams which indicate that the pilot is "on path" if the pilot sees an equal number of white lights and red lights, with white to the left of the red; "above path" if the pilot sees more white than red lights; and "below path" if the pilot sees more red than white lights.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				



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



<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>	<b>Vertical</b>	
		<b>Orthometric</b>	<b>Ellipsoidal</b>
	± 5 ft	± 10 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>	<b>Distances and Elevations</b>	
	Hundredth of arc second	Nearest one foot	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>		<b>Description</b>	
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 [Source: NGS]	
NavigationalAidSystemType		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)		The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	
centerlineDistance (Real)		Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.	

stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

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

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

	Color	Line Type	Line Weight	Symbol
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Center of array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b> ± 10 ft	<b>Ellipsoidal</b> N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Hundredth of arc second		Nearest one foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
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 [Source: NGS]		
NavigationalAidSystemType		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System		

useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.21. Navaid Equipment – Pulse Light Approach Slope Indicator (PLASI) System**

<b>Definition:</b> Pulse Light Approach Slope Indicator (PLASI) systems are a visual approach aid for use in visual flight conditions.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Center of light array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Hundredth of arc second		Nearest one foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
name (VARCHAR2 (50))		Name of the feature		
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters.		

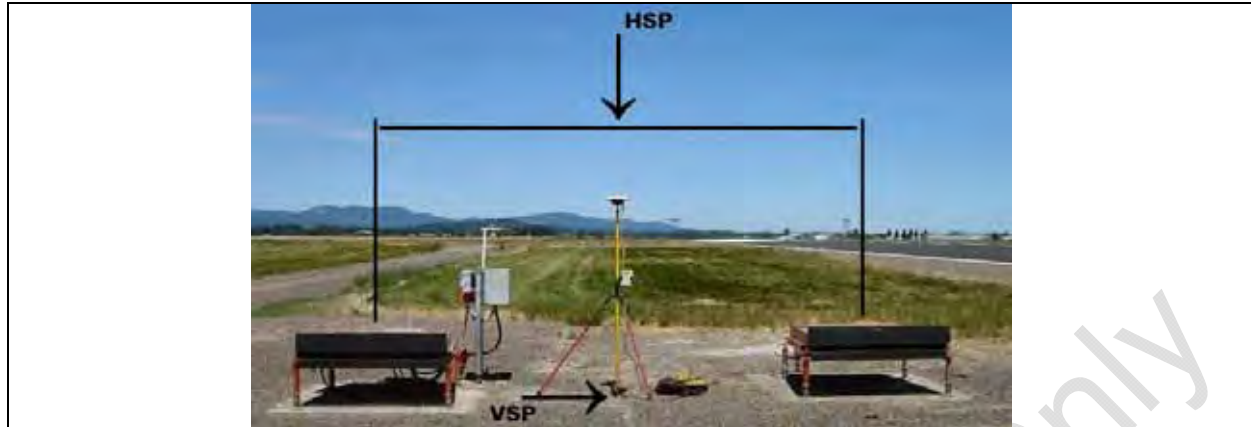
faaFacilityId (String 4)	Enter the identifier. When reporting on a glide slope, enter the identifier of the associated localizer. Do not enter the prefix "I" for ILS or "M" used with the MLS systems. Where more than one ASR is in operation at the same location or at an associated location, these equipments 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 [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

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

<b>Definition:</b> The Visual Approach Slope Indicator (VASI) is a system of lights on the side of an airport runway that provides visual descent guidance information during the approach to a runway.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	NavaidEquipment		Extension
	<b>FGDC</b>	NavaidEquipmentExtension		Extension
	<b>SDSFIE</b>	navigational_aid_point		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Center of light array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	





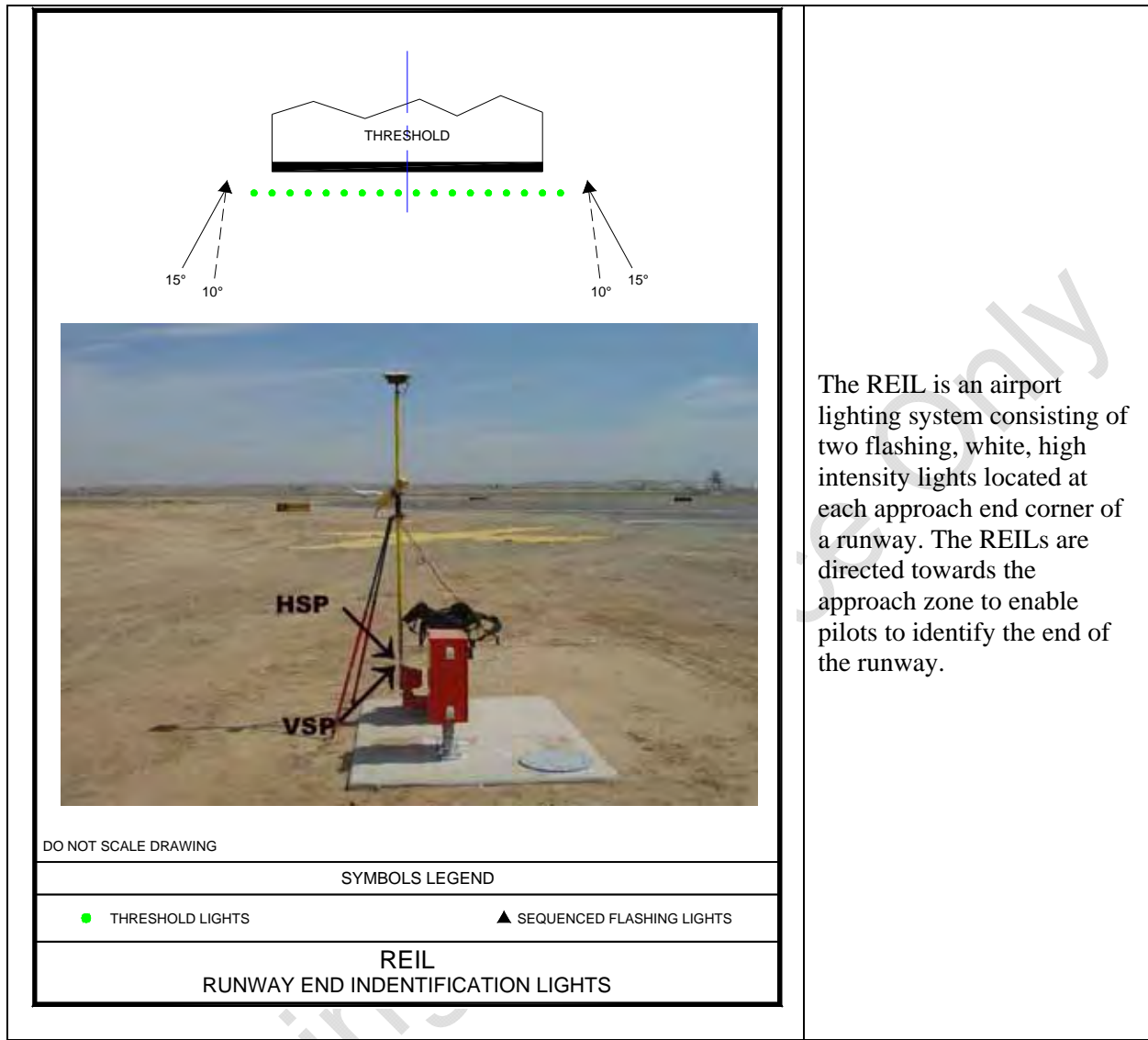
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>	<b>Vertical</b>	
		<b>Orthometric</b>	<b>Ellipsoidal</b>
	± 5 ft	± 10 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>	<b>Distances and Elevations</b>	
	Hundredth of arc second	Nearest one foot	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>		<b>Description</b>	
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 [Source: NGS]	
NavigationalAidSystemType		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)		The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	

centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or porposal together into a version.

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

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

<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<p><b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i></p>				



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

<b>Monumentation</b>	No monumentation required.		
<b>Survey Point Location</b>	<b>Horizontal</b>	<b>Vertical</b>	
	Center of Light	The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
<b>Accuracy Requirements (in feet)</b>	Horizontal	Vertical	
	± 3 ft	<b>Orthometric</b>	<b>Ellipsoidal</b>
		± 5 ft	N/A
<b>Resolution</b>	Geographic Coordinates	Distances and Elevations	
	Hundredth of arc second	Nearest one foot	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>	<b>Description</b>		
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 [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.24.Navaid Equipment – Simplified Directional Facility (SDF)**

<b>Definition:</b> NAVAID used for nonprecision instrument approaches. The final approach course is similar to that of an ILS localizer except that the SDF course may be offset from the runway, generally not more than 3 degrees, and the course may be wider than the localizer, resulting in a lower degree of accuracy.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			

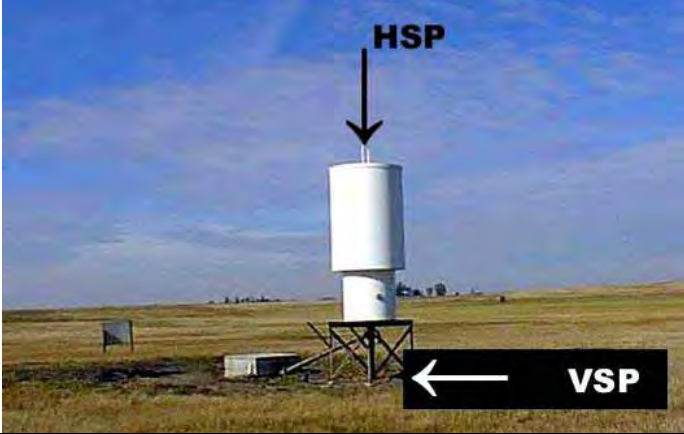
Survey Point Location	Horizontal	Vertical	
	Center of Antenna Supporting Structure	The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
Accuracy Requirements (in feet)	Horizontal	Vertical	
	± 1 ft	Orthometric	Ellipsoidal
		± 1 ft	N/A
Resolution	Geographic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

offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.25.Navaid Equipment – Tactical Air Navigation (TACAN)**

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



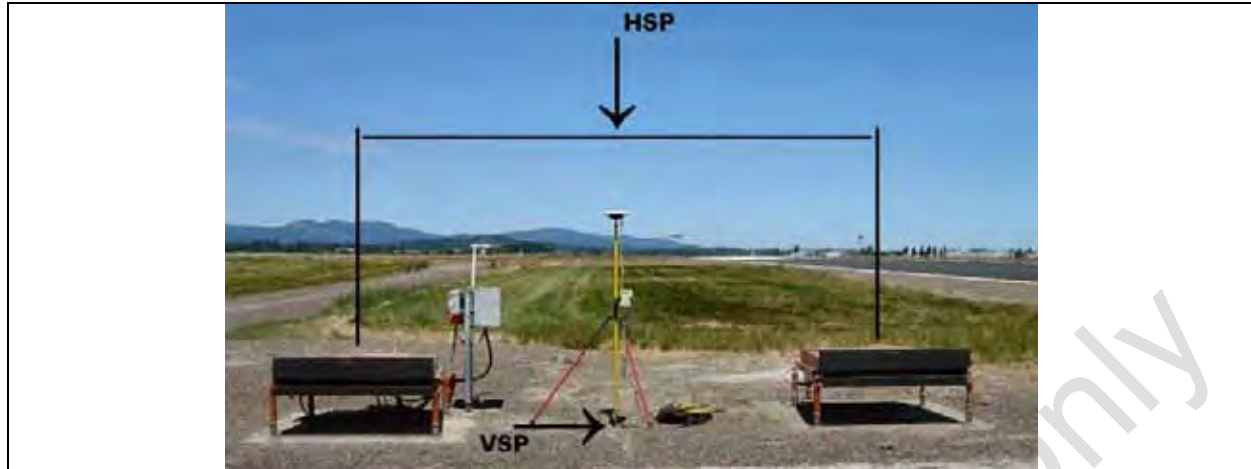
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>	Extension			
	<b>SDSFIE</b>	<i>navigational_aid_point</i>				
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.					
<b>Related Features</b>						
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>						
<b>Monumentation</b>	No monumentation required.					
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>			
	Center of Antenna Cover		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.			
						
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>			
	± 10 ft		<table border="1"> <tr> <td><b>Orthometric</b></td> <td><b>Ellipsoidal</b></td> </tr> <tr> <td>± 20 ft</td> <td>N/A</td> </tr> </table>	<b>Orthometric</b>	<b>Ellipsoidal</b>	± 20 ft
<b>Orthometric</b>	<b>Ellipsoidal</b>					
± 20 ft	N/A					
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>			
	Hundredth of arc second		Nearest one foot			
<b>Feature Attributes</b>						
<b>Attribute (Datatype)</b>		<b>Description</b>				
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 [Source: NGS]
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

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

<b>Definition:</b> Tri-color visual approach slope indicators normally consist of a single light unit projecting a three-color visual approach path into the final approach area of the runway upon which the indicator is installed.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Center of light array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	



<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>	<b>Vertical</b>	
	± 5 ft	<b>Orthometric</b> ± 10 ft	<b>Ellipsoidal</b> N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>	<b>Distances and Elevations</b>	
	Hundredth of arc second	Nearest one foot	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>		<b>Description</b>	
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 [Source: NGS]	
NavigationalAidSystemType		Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	
useCode (Enumeration: CodeUseCode)		The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)		The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	

centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

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

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

<b>Feature Type</b>	Point		
<b>CADD Standard Requirements</b>			
<b>Layer/Level</b>	<b>Description</b>		
C-AFLD-AIDS-	Airfield Navigational Aid -		
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>
<b>AutoDesk Standards</b>	4	Continuous	1
<b>MicroStation Standards</b>	7		7
<b>Sensitivity</b>	Unclassified		
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>	Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>	Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>	
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.		
<b>Related Features</b>			
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>			
<b>Monumentation</b>	No monumentation required.		
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>
	Center of light array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>
	± 5 ft		<b>Orthometric</b> ± 10 ft <b>Ellipsoidal</b> ± 10 ft
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>
	Hundredth of arc second		Nearest one foot
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>		<b>Description</b>	
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 [Source: NGS]	

NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.28.Navaid Equipment – VHF Omni Directional Range (VOR)**

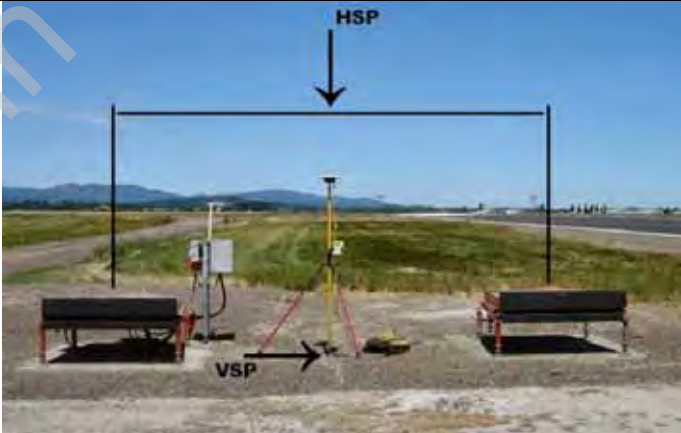
<b>Definition:</b> A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the NAS. The VOR periodically identifies itself by Morse Code and may have an additional voice identification feature. Voice features may be used by ATC or FSS for transmitting instructions/information to pilots.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavigationalAidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b>	<i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>			
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Center of Antenna Cover		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	



<b>Standalone VOR</b>	<b>VOR coupled with DME</b>		
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>	<b>Vertical</b>	
	$\pm 10$ ft	<b>Orthometric</b> $\pm 20$ ft	<b>Ellipsoidal</b> N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>	<b>Distances and Elevations</b>	
	Hundredth of arc second	Nearest one foot	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>	<b>Description</b>		
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 [Source: NGS]		
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System		
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.		
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.		

centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

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


<b>Definition:</b> An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he/she is "on path" if he/she sees red/white, "above path" if white/white, and "below path" if red/red. Some airports serving large aircraft have three-bar VASIs which provide two visual glide paths to the same runway.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	NavaidEquipment		Extension
	<b>FGDC</b>	NavaidEquipmentExtension		Extension
	<b>SDSFIE</b>	navigational_aid_point		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> 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.				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	Center of Light Array		The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
				
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
			<b>Orthometric</b>	<b>Ellipsoidal</b>
	± 5 ft		± 10 ft	N/A

Resolution	Geographic Coordinates	Distances and Elevations
	Hundredth of arc second	Nearest one foot
<b>Feature Attributes</b>		
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 [Source: NGS]	
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System	
useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.	
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.	
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.	
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.	
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.	
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.	
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.30.Navaid Equipment – VOR/TACAN (VORTAC)**

<b>Definition:</b> A navigation aid providing VOR azimuth, TACAN azimuth, and TACAN distance measuring equipment (DME) at one site.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NavaidEquipment			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AFLD-AIDS-	Airfield Navigational Aid -			
	<b>Color</b>	<b>Line Type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavaidEquipment</i>		Extension
	<b>FGDC</b>	<i>NavaidEquipmentExtension</i>		Extension
	<b>SDSFIE</b>	<i>navigational_aid_point</i>		
<b>Documentation and Submission Requirements</b>	Document this feature as described in paragraphs 1.6.2 and 1.6.3.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the position of the NAVAID using the HSP and the elevation at the VSP. If the NAVAID penetrates an OIS or is selected as a representative object, additionally identify, classify and document the NAVAID as an Obstacle and associated accuracy. When identifying a NAVAID as an obstacle, survey the highest point on the entire structure as the top elevation including appurtenances.</i>				

<b>Monumentation</b>	No monumentation required.		
<b>Survey Point Location</b>	<b>Horizontal</b>	<b>Vertical</b>	
	Center of Antenna Cover	The intersection of the ground, gravel, concrete pad, or other base and plumb line through the HSP.	
			
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>	<b>Vertical</b>	
	± 10 ft	<b>Orthometric</b> ± 20 ft	<b>Ellipsoidal</b> N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>	<b>Distances and Elevations</b>	
	Hundredth of arc second	Nearest one foot	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>	<b>Description</b>		
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 [Source: NGS]		
NavigationalAidSystemType	Identifies the navigational aid equipment as part of an overall system. For example the localizer and glideslope together make up the Instrument landing system (ILS) or the MLS Azimuth and MLS Elevation make up a Microwave Landing System		

useCode (Enumeration: CodeUseCode)	The code that represents the airspace structure in which the aeronautical navigational aid is utilized.
antennaToThresholdDistance (Real)	The distance in feet that the antenna is from the runway threshold. Provide the distance to the nearest tenth of a foot.
centerlineDistance (Real)	Distance from the centerline perpendicular point to the physical runway end. This should be the same distance as the antenna to threshold distance unless the runway end the navigational aid serves has a displaced threshold. Provide this distance to the nearest tenth of a foot.
stopEndDistance (Real)	Provide the distance distance the from the antenna along the centerline to the stop end of the runway.
offsetDistance (Real)	The distance in feet that the feature is offset from the runway centerline. Provide this distance to the nearest tenth of a foot.
offsetDirection (Enumeration: CodeOffsetDirection)	Enter the direction (right, left, or on centerline) the navigational aid is offset from the runway. Determine the appropriate direction from the approach threshold down the runway.
lightingType (Enumeration: CodeLightingConfigurationType)	The type of visual navigational aid systems (use only when CodeNavigationalAid System Type 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. [Source: NGS]
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.10.31.NAVAID Site**

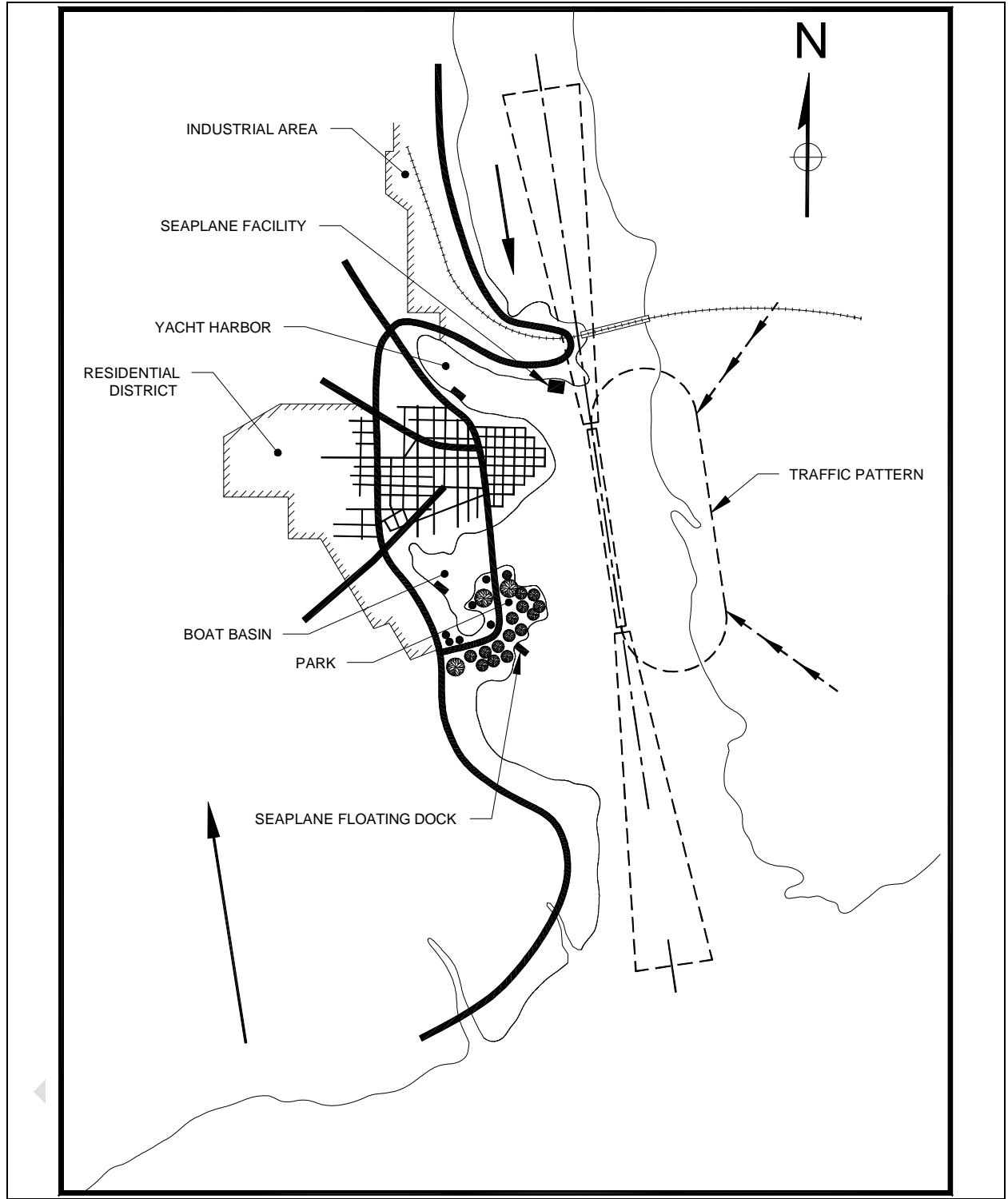
<b>Definition:</b> The parcel, lease, or right-of-way boundary for a NAVAID or facility that is located off airport property.				
<b>Feature Group</b>	Navigational Aids			
<b>Feature Class Name</b>	NAVAIDSite			
<b>Feature Type</b>	Polygon			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AIRF-AIDS-SITE	Airfield Navigational Aid - Site			
	<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	1	Continuous	1	User Defined
<b>MicroStation Standards</b>	3		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	NavaidSite		Extension
	<b>FGDC</b>	NavigationalAidSite		Extension
	<b>SDSFIE</b>	Airfield_facility_surface_site		
<b>Documentation and Submission Requirements</b>	No documentation required.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect a closed polygon to its greatest horizontal extent.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
			<b>Orthometric</b>	<b>Ellipsoidal</b>
	± 5 ft		± 10 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Hundredth of arc second		Nearest one foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
name (VARCHAR2 (50))		Name of the feature		
description (VARCHAR2 (255))		A brief description of the facility and any special characteristics.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
faaFacilityId (String 4)		The location identifier assigned to the feature by FAA		
facilityType (String 16)		The type of facility or feature related to airfield operations.		
propertyCustodian (String 50)		The regional property management office responsible for ownership of the site		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Integer2)		Discriminator used to tie features of a plan or proposal together into a version.		



**5.11. Group: SEAPLANE**

**5.11.1. Water Operating Area**

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



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

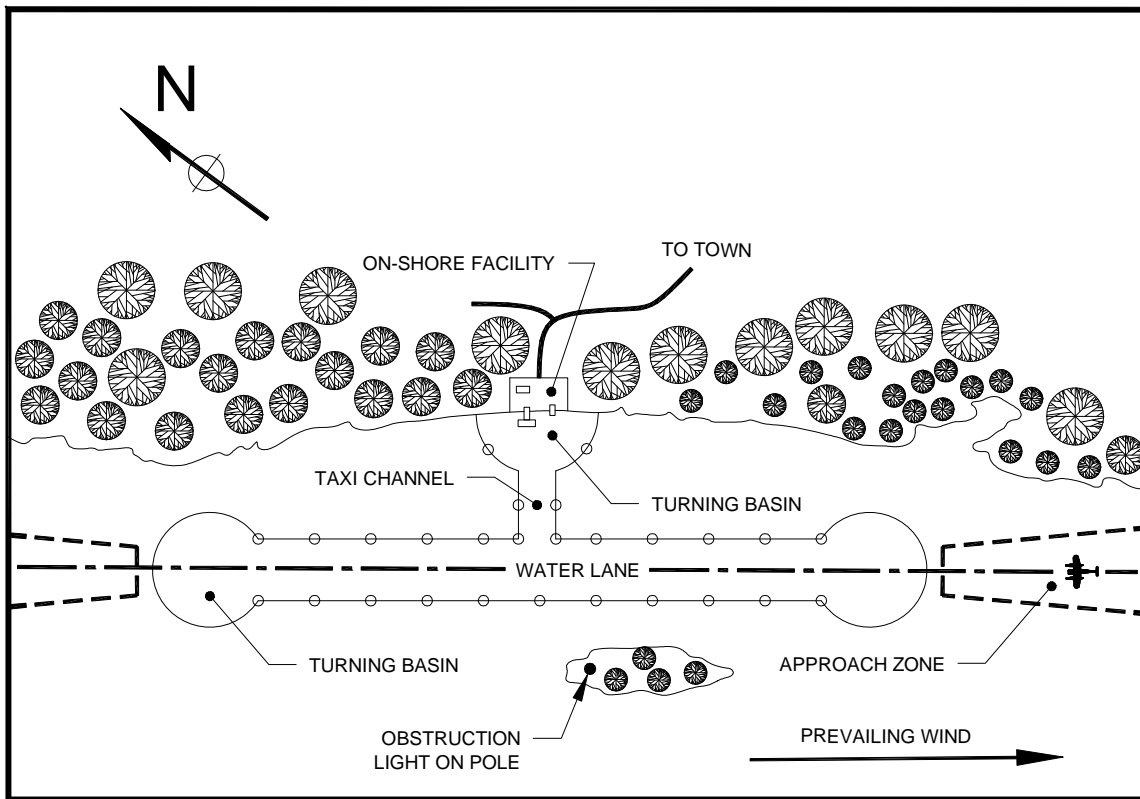
Resolution	Geographic Coordinates	Distances and Elevations
	Five hundredth of arc second	Nearest foot
<b>Feature Attributes</b>		
Attribute (Datatype)	Description	
name (VARCHAR2 (50))	Name of the feature water body (river/lake).	
description (VARCHAR2 (255))	Description of the feature.	
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
surfaceMaterial (Enumeration: CodeSurfaceMaterial)	Code used to indicate the type of water the water operating area is on or planned to use.	
length (Integer)	Specify the overall length of the WaterOperatingArea to the nearest 5 feet	
width (Integer)	Specify the overall width of the waterOperatingArea to the nearest 5 feet	
currentFlowRate (Integer)	Measure and specify the rate of the current flow in the WaterOperatingArea in miles per hour	
compassLocation (Enumeration: CodeCompassLocation)	Specify the magnetic bearing of the current flow direction	
tidalRange (Integer)	Specify (in feet) the height difference in height from mean low mean high tide	
coordinatedUseType (Enumeration: CodeCoordinatedUseType)	Specify the primary coordinated use of the waterway. If no single activity comprises the majority of the coordinated use then specify multiple.	
coordinatedUseActivityLevel (Integer)	Provide the amount of activity based on percentage of daily use of the primary coordinated use type. If coordinated use type is multiple provide the largest activity level of the single most expected activity.	
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.	

### 5.11.2. Water Lane End

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

<b>Equivalent Standards</b>	<b>AIXM</b>	None
	<b>FGDC</b>	None
	<b>SDSFIE</b>	None
<b>Documentation and Submission Requirements</b>	None	
<b>Related Features</b>		

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



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

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

compassLocation (Enumeration: CodeCompassLocation)	Code indicating the cardinal compass location of the turning basin from centroid of the WaterLaneEnd. This feature is similar to the land based airport RunwayEnd.
restriction (String 240)	Any restrictions or cautions associated with the sea plane landing area.
airMarker (Boolean)	Code specifying if a standard air maker is used to indicate if a standard air marker is in use at the location.
type (Boolean)	Identifies the WaterLaneEnd as the primary or alternate. Primary = Y, alternate=N
color (Enumeration: CodeColor)	The color of the air marker at the location (if any)
lightingType (Enumeration: CodeLightingType)	Type of lighting available at the location (if any)
approachGuidance (Enumeration: CodeApproachGuidance)	Identifies the type of approach guidance in use or planned for the water operating area.
Length (Number 10)	Specify the overall length of the primary water lane
width (Number 10)	Specify the overall width of the primary water lane
depth (Number 10)	Specify the depth of the primary water lane with respect to mean lowest low tide
centroid	The geographic location of the primary water centroid, used to determine the primary and alternate water lanes within the water operating area.
status (Enumeration: codeStatus)	Describes the operational status of the feature.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.11.3. Taxi Channel**

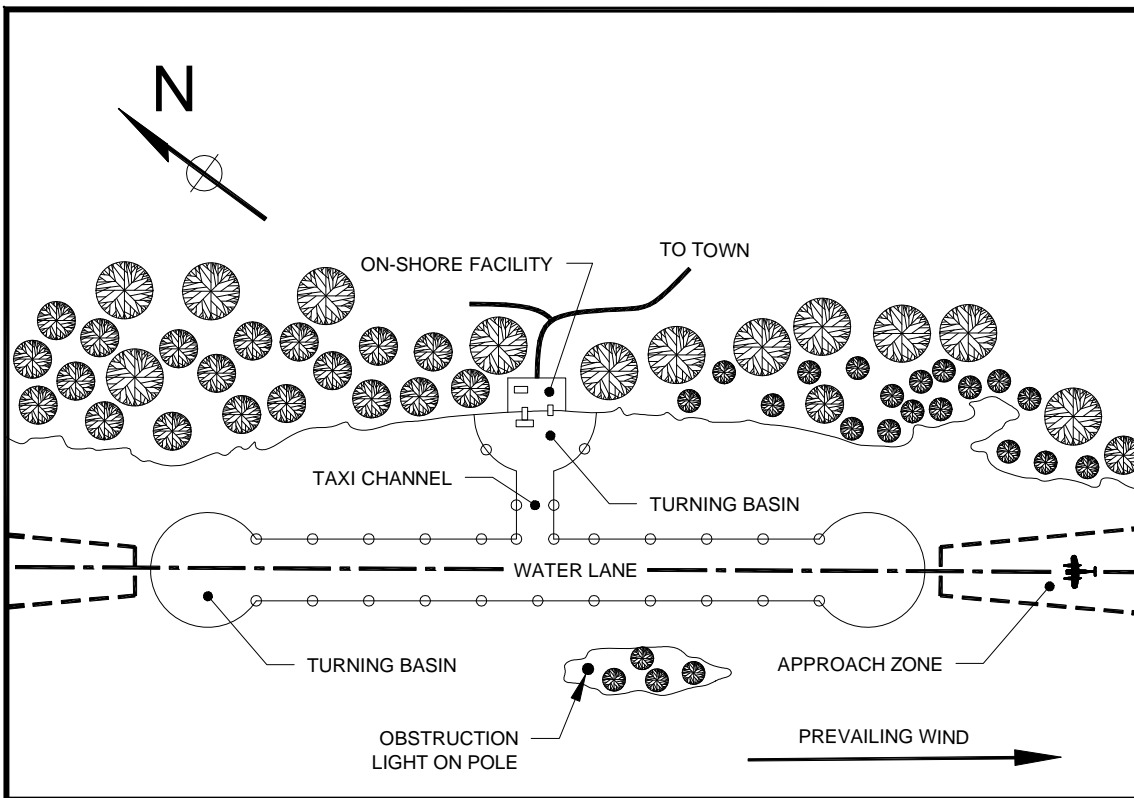
<b>Definition:</b> A water channel used for the movement of aircraft between on shore facilities and the water lane. [Source AC 150/5395-1]				
<b>Feature Group</b>	SeaPlane			
<b>Feature Class Name</b>	TaxiChannel			
<b>Feature Type</b>	Polygon			
<b>CADD Standard Requirements</b>				
<b>Layer/Level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

<b>Data Capture Rules:</b> <i>Collect the taxi channel at its greatest horizontal extents. Existing markers or buoys may define the width. In the instance the taxi channel is not marked for width, refer to width published by FAA in the U.S. Terminal Procedures.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
name (VARCHAR2 (50))		Any commonly used name associated with the taxi channel.		
description (VARCHAR2 (255))		Description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
restriction (String 240)		Any restrictions or cautions associated with the taxi channel		
length (Number 10)		Specify the overall length of the taxi channel		
width (Number 10)		Specify the overall width of the taxi channel		
depth (Number 10)		Specify the depth of the taxi channel with respect to mean lowest low tide		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Integer2)		Discriminator used to tie features of a plan or proposal together into a version.		

**5.11.4. Turning Basin**

<b>Definition:</b> A water area used for the maneuvering of aircraft where the use of water surface is restricted. Turning basins should be located adjacent to shoreline facilities and at each end of the water operating area.[Source AC 150/5395-1]				
<b>Feature Group</b>	SeaPlane			
<b>Feature Class Name</b>	TurningBasin			
<b>Feature Type</b>	Polygon			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>		<b>Description</b>		
C-SEAP-TBSN-		Seaplane landing area		
		<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>
<b>AutoDesk Standards</b>	4	Continuous	1 MM	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Restricted			
<b>Equivalent Standards</b>	<b>AIXM</b>	None		
	<b>FGDC</b>	None		
	<b>SDSFIE</b>	None		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				

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



<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 20 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
name (VARCHAR2 (50))		A commonly used name for the turning basin		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
restriction (String 240)		Any restrictions or cautions associated with the turning basin		
length (Number 10)		Specify the overall length of the turning basin to the nearest 5 feet.		
width (Number 10)		Specify the overall width of the turning basin to the nearest 5 feet		
depth (Number 10)		Specify the depth of the turning basin with respect to mean lowest low tide to the nearest 0.5 foot.		
diameter (Number 10)		The diameter of the turning basin available for use by aircraft to the nearest 5 feet.		

compassLocation (Enumeration: CodeCompassLocation)	Code indicating the cardinal compass location of the turning basin from centroid of the WaterLaneEnd
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.11.5. Navigation Buoy**

<b>Definition:</b> A floating marker which is moored to the bottom at a specific known location, which is used as an aid to navigation or for other special purpose.				
<b>Feature Group</b>	SeaPlane			
<b>Feature Class Name</b>	NavigationBuoy			
<b>Feature Type</b>	Point			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-SEAP-BUOY-	Seaplane navigation buoy			
	<b>Color</b>	<b>Line type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	2	Continuous	1 MM	User Defined
<b>MicroStation Standards</b>	4		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>NavigationBuoy</i>		Core
	<b>FGDC</b>	<i>NavigationBuoy</i>		
	<b>SDSFIE</b>	<i>marine_navigation_buoy_point</i>		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect at the center and highest point on the buoy regardless of water level at time of data collection.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 20 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>	<b>Description</b>			
name (VARCHAR2 (50))	Any commonly used name associated with the buoy.			
description (VARCHAR2 (255))	A description or other unique information concerning the buoy limited to 255 characters. Use this to describe navigational requirements or warnings.			
designator (String 20)	The official number of the buoy.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			



type (Enumeration: CodeBuoyType)	Discriminator - The type of the buoy or marker.
lightingType (Enumeration: CodeLightingType)	Type of lighting available at the location (if any)
color (Enumeration: CodeColor)	Code used to indicate the navigational color of the buoy.
owner (Enumeration: CodeOwner)	Code indicating the owner of the navigation buoy.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

### 5.11.6. Seaplane Ramp Centerline

<b>Definition:</b> The centerline of ramps specifically designed to transit seaplanes to or from land or water				
<b>Feature Group</b>	SeaPlane			
<b>Feature Class Name</b>	SeaplaneRampCenterline			
<b>Feature Type</b>	Line			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-SEAP-RAMP-CNTR	Seaplane ramp centerline			
	<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	2	Continuous	1 MM	User Defined
<b>MicroStation Standards</b>	4		7	
<b>Sensitivity</b>	Restricted			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>SeaplaneRampSite</i>		Core
	<b>FGDC</b>	<i>SeaplaneRampCenterline</i>		
	<b>SDSFIE</b>	<i>sea_plane_ramp_centerline</i>		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect centerline of ramp from edge of pavements or other surface type utilized for entering and exiting water. Line extends from edge of water to apron or taxiway.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 20 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
name (VARCHAR2 (50))		Name of the feature.		
description (VARCHAR2 (255))		Description of the feature.		
240Bstatus (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		

length (Integer)	Specify the length of the seaplane ramp centerline from the water to the shoreline
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

**5.11.7. Seaplane Ramp Site**

<b>Definition:</b> Ramps specifically designed to transit seaplanes to or from land to water.				
<b>Feature Group</b>	SeaPlane			
<b>Feature Class Name</b>	SeaplaneRampSite			
<b>Feature Type</b>	Polygon			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-SEAP-RAMP-	Seaplane ramp site			
	<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	3	Continuous	1 MM	User Defined
<b>MicroStation Standards</b>	2		7	
<b>Sensitivity</b>	Restricted			
<b>Equivalent Standards</b>	<b>AIXM</b>	SeaplaneRampSite		Core
	<b>FGDC</b>	SeaplaneRampSite		
	<b>SDSFIE</b>	sea_plane_ramp_site		
<b>Documentation and Submission Requirements</b>	No documentation is required for this feature.			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the ramp width at its greatest horizontal limits.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 20 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>	<b>Description</b>			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	Description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
width (Integer)	Identify the width of the seaplane ramp site			
slope (integer)	The slope of the ramp specified as an integer value.			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			

Alternative (Integer2)	Discriminator used to tie features of a plan or poroposal together into a version.
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**5.11.8. Docking Area**

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

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

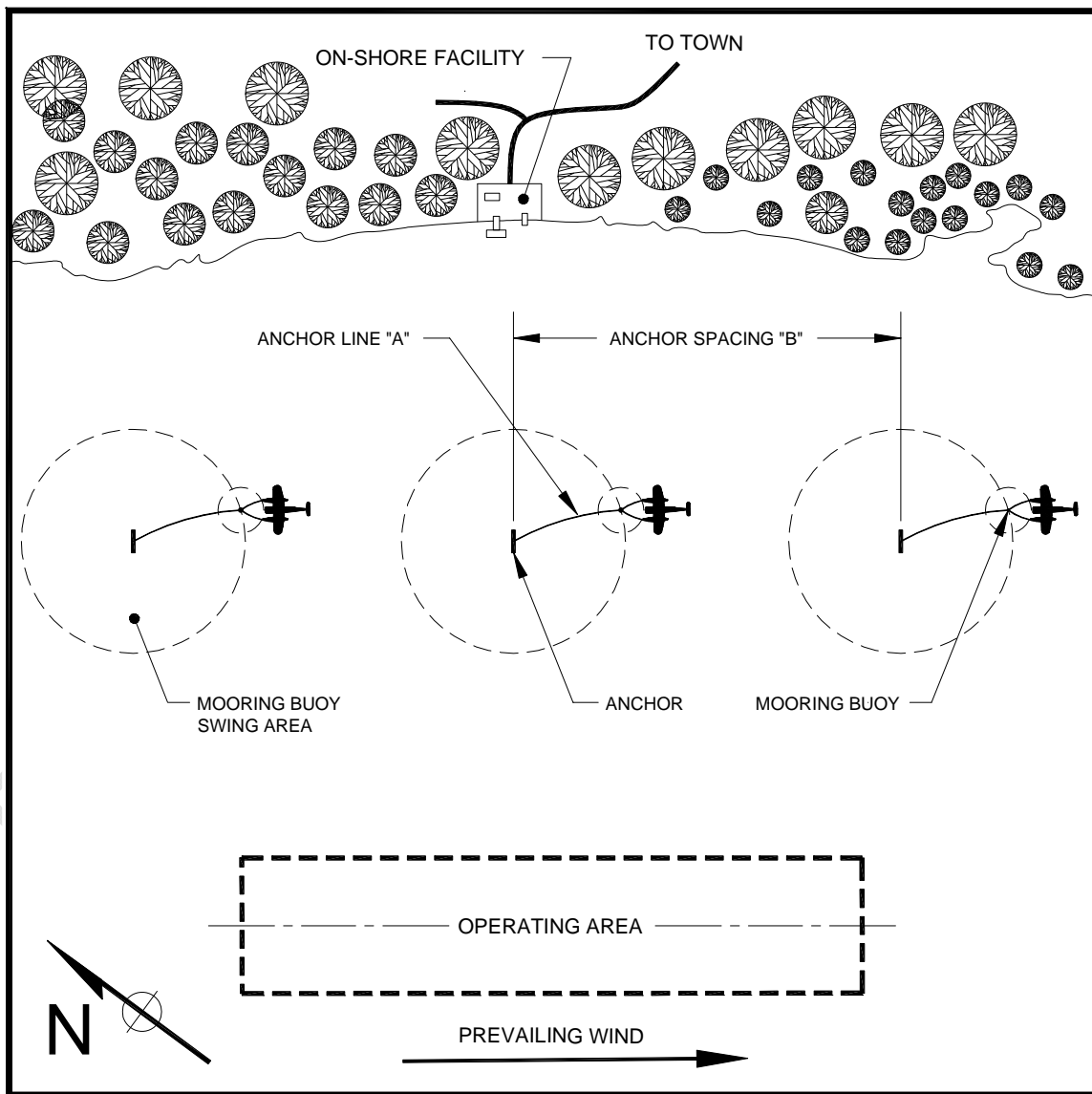
Accuracy Requirements (in feet)	Horizontal	Vertical	
		Orthometric	Ellipsoidal
	± 5 ft	± 20 ft	N/A
Resolution	Geographic Coordinates	Distances and Elevations	
	Five hundredth of arc second	Nearest foot	
Feature Attributes			
Attribute (Datatype)	Description		
name (VARCHAR (50))	Name of the feature.		
description (VARCHAR (255))	Description of the feature.		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
pier (Boolean)	Specify if a pier is available in the dockArea		
pierLength (Integer)	Specify the overall length available for the pier		
pierWidth (Integer)	Specify the overall length available for the pier		
pierMaterial (Enumeration: CodeVerticalStructureMaterial))	Specify the materials used in the construction of the pier.		
hoistingCapability (Integer)	Specify the hoisting capability in pounds		
marineRailwayPlatformLength (Integer)	Specify the length of the marine railway platform		
marineRailwayPlatformWidth (Integer)	Specify the width of the marine railway platform		
marineRailwayPlatformCapacity (Integer)	Specify the capacity of the marine railway platform in pounds		
gangway (Boolean)	Specify if a gangway is available		
gangwayLength (Integer)	Specify the overall length available for the gangway		
gangwayWidth (Integer)	Specify the overall length available for the gangway		
floatingDock (Boolean)	Specify if a floating dock is available		
gangwayMaterial (Enumeration: CodeVerticalStructureMaterial)	Specify the material used to construct the gangway		
floatingDockLength (Integer)	Specify the overall length available for the floating dock		
floatingDockWidth (Integer)	Specify the overall length available for the floating dock		
floatingDockMaterial (Enumeration: CodeVerticalStructureMaterial)	Specify the material used in constructing the dockArea		
floatingBarge (Boolean)	Specify if a floating barge is available		
floatingBargeLength (Integer)	Specify the overall length available for the floating barge		
floatingBargeWidth (Integer)	Specify the overall length available for the floating barge		
floatingBargeMaterial Enumeration: CodeVerticalStructureMaterial)	Specify the material used in constructing the floatingBarge		
Alternative (Integer2)	Discriminator used to tie features of a plan or poroposal together into a version.		

### 5.11.9. Anchorage Area

<b>Definition:</b> An area designated specifically for the parking of seaplanes.	
<b>Feature Group</b>	SeaPlane
<b>Feature Class Name</b>	AnchorageArea

<b>Feature Type</b>	Polygon			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-SEAP-ANCH-	Seaplane dock			
	<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	3	Continuous	1 MM	User Defined
<b>MicroStation Standards</b>	2		7	
<b>Sensitivity</b>	Unclassified			
<b>Equivalent Standards</b>	<b>AIXM</b>	None		
	<b>FGDC</b>	None		
	<b>SDSFIE</b>	None		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				

**Data Capture Rules:** *Collect the anchorage area at its greatest horizontal extents.*



<b>Monumentation</b>	No monumentation required.
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<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 20 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>			<b>Description</b>	
name (VARCHAR2 (50))			Name of the feature.	
description (VARCHAR2 (255))			Description of the feature.	
status (Enumeration: codeStatus)			A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
userFlag (String 254)			An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
mooringLocations (Integer)			Specify the number of mooring locations provided in the AnchorageArea.	
length (Integer)			Specify the overall length available for the AnchorageArea	
width (Integer)			Specify the overall length available for the floating dock	
depth (Integer)			Specify the depth of the turning basin with respect to mean lowest low tide to the nearest 0.5 foot.	
bottomConditions (String 240)			Specify the type of bottom conditions in the AnchorageArea.	
restriction (String 240)			Any restrictions or cautions associated with the AnchorageArea	
Alternative (Integer2)			Discriminator used to tie features of a plan or proposal together into a version.	

**5.12. Group: SECURITY**

**5.12.1. Security Area**

<b>Definition:</b> An area of the airport in which security measures required by 49 CFR 1542.201 must be carried out [Source: 49 CFR 1542]				
<b>Feature Group</b>	Security			
<b>Feature Class Name</b>	SecurityArea			
<b>Feature Type</b>	Polygon			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C- SECR-SECA	An area of the airport in which security measures required by 49 CFR 1542.201			
	<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	6	Continuous	1 MM	User Defined
<b>MicroStation Standards</b>	5		7	
<b>Sensitivity</b>	Secret			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>SecurityElement</i>		Extension
	<b>FGDC</b>	<i>SecurityArea</i>		Extension
	<b>SDSFIE</b>	<i>None</i>		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect outline of security area at its greatest horizontal extents. Extents can be defined by fences, paint lines, or specific limits defined by airport authorities.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 5 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredths of arc second		Nearest foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>	<b>Description</b>			
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 (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.			



**5.12.2. Security Identification Display Area**

<b>Definition:</b> Portions of an airport, specified in the airport security program, in which security measures required by regulation must be, carried out. This area includes the security area and may include other areas of the airport. [Source: DHS]				
<b>Feature Group</b>	Security			
<b>Feature Class Name</b>	SecurityIdDisplayArea			
<b>Feature Type</b>	Polygon			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-AIRF-SECR-SIDA	Security Identification Display Area			
	<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	6	Continuous	1 MM	User Defined
<b>MicroStation Standards</b>	5		7	
<b>Sensitivity</b>	Secret			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>SecurityElement</i>		Extension
	<b>FGDC</b>	<i>SecurityIdentificationDisplayArea</i>		Extension
	<b>SDSFIE</b>	<i>none</i>		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect outline of security area at its greatest horizontal extents. Extents can be defined by fences, paint lines, or specific limits defined by airport authorities.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 5 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
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 (Integer2)		Discriminator used to tie features of a plan or proposal together into a version.		

**5.12.3. Security Perimeter Line**

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

CADD Standard Requirements			
Layer/Level	Description		
C-DETL-FENC-SECU	Security Fencing		
	<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>
<b>AutoDesk Standards</b>	4	None	1 MM
<b>MicroStation Standards</b>	7		7
<b>Sensitivity</b>	Confidential		
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>SecurityElement</i>	Extension
	<b>FGDC</b>	<i>SecurityPerimeterLine</i>	Extension
	<b>SDSFIE</b>	<i>security_perimeter_line</i>	
<b>Documentation and Submission Requirements</b>	None		
<b>Related Features</b>			
<b>Data Capture Rules:</b> <i>Collect outline of security area at its greatest horizontal extents. Extents can be defined by fences, paint lines, or specific limits defined by airport authorities.</i>			
<b>Monumentation</b>	No monumentation required.		
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>
	N/A		N/A
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>
	± 5 ft		<b>Orthometric</b>
			<b>Ellipsoidal</b>
± 5 ft		± 5 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>
	Five hundredth of arc second		Nearest foot
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>		<b>Description</b>	
name (VARCHAR2 (50))		Name of the feature.	
description (VARCHAR2 (255))		A description or other unique information concerning the subject item, limited to 255 characters. [Source: SDSFIE Attribute Table]	
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
Alternative (Integer2)		Discriminator used to tie features of a plan or proposal together into a version.	

**5.12.4. Sterile Area**

<b>Definition:</b> Portions of an airport defined in the airport security program that provide passengers access to boarding aircraft and to which the access is generally controlled by TSA, an aircraft operator, or a foreign air carrier. [Source: DHS]	
<b>Feature Group</b>	Security
<b>Feature Class Name</b>	SterileArea
<b>Feature Type</b>	Polygon
<b>CADD Standard Requirements</b>	
<b>Layer/Level</b>	<b>Description</b>
C-AFLD-SECR-STER	Airfield sterile area

	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1 MM	User Defined
MicroStation Standards	5		7	
Sensitivity	Secret			
Equivalent Standards	AIXM	SecurityElement		Extension
	FGDC	SterileArea		Extension
	SDSFIE	None		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules:	Collect outline of security area at its greatest horizontal extents. Extents can be defined by fences, paint lines, or specific limits defined by airport authorities.			
Monumentation	No monumentation required.			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
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 (Integer2)		Discriminator used to tie features of a plan or proposal together into a version.		

### 5.13. Group: SURFACE TRANSPORTATION

#### 5.13.1. Bridge

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

verticalStructureMaterial Enumeration: CodeVerticalStructureMaterial)	
directionality (Enumeration: CodeDirectionality)	Code indicating the traffic flow of the bridge being classified.
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

### 5.13.2. Driveway Area

<b>Definition:</b> An access to a building or other vehicle parking lot or storage area.				
<b>Feature Group</b>	Surface Transportation			
<b>Feature Class Name</b>	DrivewayArea			
<b>Feature Type</b>	Polygon			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-ROAD-DRIV-	Driveway edge of pavement			
	<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Restricted			
<b>Equivalent Standards</b>	<b>AIXM</b>	DrivewayArea		Extension
	<b>FGDC</b>	DrivewayArea		Extension
	<b>SDSFIE</b>	driveway_area		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				
<b>Data Capture Rules:</b> Capture the outline of driveway at its greatest horizontal extents.				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 5 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest Foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>	<b>Description</b>			
name (VARCHAR2 (50))	Name of the feature.			
description (VARCHAR2 (255))	Description of the feature.			
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			
surfaceMaterial (enumeration: CodeSurfaceMaterial)	The material used as a surface for the driveway.			
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.			

**5.13.3. Driveway Centerline**

<b>Definition:</b> The center of the driveway as measured from the edge of the paved surface. The segments of a driveway centerline will coincide with the road segments in order to provide network connectivity.				
<b>Feature Group</b>	Surface Transportation			
<b>Feature Class Name</b>	DrivewayCenterline			
<b>Feature Type</b>	Line			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-ROAD-DRIV-CNTR	Driveway centerline			
	<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Restricted			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>DrivewayCenterline</i>		Extension
	<b>FGDC</b>	<i>DrivewayCenterline</i>		Extension
	<b>SDSFIE</b>	<i>None</i>		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect in the horizontal plane at the center of driveway, and to intersect with centerline of road/drive/ramp.</i>				
<b>Monumentation</b>	No monumentation required.			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 5 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest Foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
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 (Integer2)		Discriminator used to tie features of a plan or proposal together into a version.		

**5.13.4. Parking Lot**

<b>Definition:</b> An area of an airport used for parking of automobiles, buses, etc.	
<b>Feature Group</b>	Surface Transportation
<b>Feature Class Name</b>	ParkingLot
<b>Feature Type</b>	Polygon

CADD Standard Requirements				
Layer/Level	Description			
C-PKNG-ISLD-	Parking islands			
C-PKNG-OTLN-	Parking lots			
	<b>Color</b>	<b>Line type</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	84 (all)	Dashed-Spaced (all)	1 mm (all)	User Defined
<b>MicroStation Standards</b>	256 (all)		7 (all)	
<b>Sensitivity</b>	Restricted			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>ParkingLot</i>		Extension
	<b>FGDC</b>	<i>ParkingLot</i>		Extension
	<b>SDSFIE</b>	<i>vehicle_parking_area</i>		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect outline of parking lot at its greatest horizontal extents.</i>				
<b>Monumentation</b>	None			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 5 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest Foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
name (VARCHAR2 (50))		Any commonly used name for the parking area.		
description (VARCHAR2 (255))		A description of the parking lot.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
parkingLotUse (String 16)		The primary use of the parking area.		
totalNumberSpaces (Integer)		The total parking spaces available in the area including handicapped or reserved spaces.		
numberHandicapSpaces (Integer)		The total number of spaces marked as being handicapped parking.		
owner (Enumeration: CodeOwner)		The owner of the parking lot		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
surfaceType (Enumeration: codeSurfaceType)		Type of different materials used to construct the surface.		
Alternative (Integer2)		Discriminator used to tie features of a plan or proposal together into a version.		

### 5.13.5. Railroad Centerline

**Definition:** Represents the centerline of each pair of rails [Source: ANSI: Data Content Standards For Transportation Networks: Roads]

<b>Feature Group</b>	Surface Transportation
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<b>Feature Class Name</b>	RailroadCenterline			
<b>Feature Type</b>	Line			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-RAIL-CNTR-	Centerlines			
C-RAIL-TRAK-	Railroads			
	<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	91 (all)	Continuous (all)	1 (all)	User Defined
<b>MicroStation Standards</b>	106 (all)		7 (all)	
<b>Sensitivity</b>	Confidential			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>RailroadCenterline</i>		Extension
	<b>FGDC</b>	<i>RailroadCenterline</i>		Extension
	<b>SDSFIE</b>	<i>railroad_centerline</i>		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>In the horizontal plane, collect a line along the centerline of each pair of rails. In the vertical plane, collect the height at the top of highest rail.</i>				
<b>Monumentation</b>	None			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 5 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest Foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>	<b>Description</b>			
name (VARCHAR2 (50))	Any commonly used name for the railroad.			
description (VARCHAR2 (255))	Any narrative remarks concerning the railroad.			
Status (Enumeration codeStatus)	The current status as to whether the railroad segment is being used.			
numberOfTracks (Integer)	The number of tracks present			
owner (Enumeration: CodeOwner)	The owner of the rail track			
isBridge (Boolean)	Indicates given railroad segment is bridge (Y- a is bridge, N- is not a bridge).			
istunnel (Boolean)	Indicates given railroad segment is tunnel (Y- is a tunnel, N- is not a tunnel).			
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.			
directionality (Enumeration: CodeDirectionality)	Code indicating the traffic flow of the railroad segment being classified.			
segmentType (Enumeration: CodeSegmentType)	Code indication the sequence or position of the segment being classified by the feature.			
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.			



**5.13.6. Railroad Yard**

<b>Definition:</b> Represents a railroad yard [Source: ANSI: Data Content Standards For Transportation Networks: Roads]				
<b>Feature Group</b>	Surface Transportation			
<b>Feature Class Name</b>	RailroadYard			
<b>Feature Type</b>	Polygon			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-RAIL-YARD-	Railroad Yard			
	<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	4	Continuous	1	User Defined
<b>MicroStation Standards</b>	7		7	
<b>Sensitivity</b>	Confidential			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>RailroadYard</i>		Extension
	<b>FGDC</b>	<i>RailroadYard</i>		Extension
	<b>SDSFIE</b>	<i>railroad_yard_area</i>		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect outline of the yard area its greatest horizontal extents. Represented by fences, road or change in ground surfaces.</i>				
<b>Monumentation</b>	None			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 5 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest Foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
name (VARCHAR2 (50))		A name that represent the railroad yard.		
description (VARCHAR2 (255))		Any brief description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
owner (Enumeration: CodeOwner)		The owner of the rail track		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Integer2)		Discriminator used to tie features of a plan or proposal together into a version.		

**5.13.7. Road Centerline**

<b>Definition:</b> The center of the roadway as measured from the edge of the paved surface. The segments of a road centerline will coincide with the road segments in order to have similar characteristics.	
<b>Feature Group</b>	Surface Transportation
<b>Feature Class Name</b>	RoadCenterline
<b>Feature Type</b>	Line

CADD Standard Requirements				
Layer/Level	Description			
C-ROAD-CNTR-	Centerlines			
	Color	Linetype	Line Weight	Symbol
AutoDesk Standards	6	Continuous	1	User Defined
MicroStation Standards	5		7	
Sensitivity	Confidential			
Equivalent Standards	AIXM	RoadCenterline	Extension	
	FGDC	RoadCenterline	Extension	
	SDSFIE	road_centerline		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules:	<i>Collect the centerline of road by splitting the edge of pavement or painted centerline, which ever is better defined.</i>			
Monumentation	None			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest Foot	
Feature Attributes				
Attribute (Datatype)		Description		
name (VARCHAR2 (50))		Any commonly used name for the road centerline.		
description (VARCHAR2 (255))		Description of the feature.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
Color (Enumeration: CodeColor)		The color of the centerline marking.		
userFlag (String 254)		An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
Alternative (Integer2)		Discriminator used to tie features of a plan or proposal together into a version.		

**5.13.8. Road Point**

<b>Definition:</b> A point along the roadway system which has some special significance either for starting or ending a road segment or for representing a significant position along the roadway system such as the start or center of a bridge or the center of an intersection [Source: ANSI: Data Content Standards For Transportation Networks: Roads]	
Feature Group	Surface Transportation
Feature Class Name	RoadPoint
Feature Type	Point
CADD Standard Requirements	
Layer/Level	Description
C-ROAD-POIN-	Road Point

	Color	Line type	Line Weight	Symbol
AutoDesk Standards	2	Continuous	1 mm	User Defined
MicroStation Standards	4		7	
Sensitivity	Confidential			
Equivalent Standards	AIXM	RoadPoint	Extension	
	FGDC	RoadPoint	Extension	
	SDSFIE	None		
Documentation and Submission Requirements	None			
Related Features				
Data Capture Rules:	<i>Collect point at desired location using the technique necessary to achieve accuracy</i>			
Monumentation	None			
Survey Point Location	Horizontal		Vertical	
	N/A		N/A	
Accuracy Requirements (in feet)	Horizontal		Vertical	
	± 5 ft		Orthometric	Ellipsoidal
			± 5 ft	N/A
Resolution	Geographic Coordinates		Distances and Elevations	
	Five hundredth of arc second		Nearest Foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
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 (Integer2)		Discriminator used to tie features of a plan or proposal together into a version.		

### 5.13.9. Road Segment

<b>Definition:</b> Represents a linear section of the physical road system designed for, or the result of, human or vehicular movement; must be continuous (no gaps) and cannot branch; no mandates are provided on how to segment the road system except that data providers adopt a consistent method [Source: ANSI: Data Content Standards For Transportation Networks: Roads]	
<b>Feature Group</b>	Surface Transportation
<b>Feature Class Name</b>	RoadSegment
<b>Feature Type</b>	Polygon
<b>CADD Standard Requirements</b>	
<b>Layer/Level</b>	<b>Description</b>
C-PROF-ROAD-	Roads
C-ROAD-CURB-	Curbs
C-ROAD-OTLN-	Roads
V-PROF-ROAD-	Roads

	Color	Linetype	Line Weight	Symbol
<b>AutoDesk Standards</b>	1 (all)	Continuous (all)	1 mm (all)	User Defined
<b>MicroStation Standards</b>	3 (all)		7 (all)	
<b>Sensitivity</b>	Confidential			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>RoadSegment</i>		Extension
	<b>FGDC</b>	<i>RoadSegment</i>		Extension
	<b>SDSFIE</b>	<i>road_site</i>		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect all road segments as individual polygon objects. Where two or more roadway segments intersect, collect as separate polygons depicting beginning, intersection and end. Collect roadway at the outer edge of pavement or defined paint line (excluding shoulder).</i>				
<b>Monumentation</b>	None			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 5 ft	N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>		<b>Distances and Elevations</b>	
	Five hundredth of arc second		Nearest Foot	
<b>Feature Attributes</b>				
<b>Attribute (Datatype)</b>		<b>Description</b>		
name (VARCHAR2 (50))		A common name or street name used to refer to the stretch of road.		
description (VARCHAR2 (255))		A general description of the road.		
status (Enumeration: codeStatus)		A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
alternateName (String 30)		The alternate name or second name for the road.		
route1Name (String 30)		The route number or other identifier that is affiliated with the first route type		
route1Type (Enumeration: CodeRouteType)		The first route type for the road (Interstate, US, State, etc.)		
route2Name (String 30)		The route number or other identifier that is affiliated with the second route type		
route2Type (Enumeration: CodeRouteType)		The second route type for the road (Interstate, US, State, etc.)		
route3Name (String 30)		The number or other identifier that is affiliated with the third route type		
route3Type (Enumeration: CodeRouteType)		The third route type for the road (Interstate, US, State, etc.)		
numberOfLanes (Integer)		The total number of lanes of traffic, counting both directions, not including turning lanes. [Source: SDSFIE Feature Table]		
length (Real)		The length of the road segment measured at the centerline. [Source: SDSFIE Feature Table]		
width (Real)		The average width of the road segment. [Source: SDSFIE Feature Table]		
isBridge (Boolean)		Indicates given road segment is bridge (Y- a is bridge, N- is not a bridge). [Source: SDSFIE Feature Table]		

isTunnel (Boolean)	Indicates given road segment is tunnel (Y- is a tunnel, N is not a tunnel). [Source: SDSFIE Feature Table]
directionality (Enumeration: CodeDirectionality)	Code indicating the traffic flow on the road segment.
segmentType (Enumeration: CodeSegmentType)	Code indicating the type of segment being classified.
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.
surfaceType (Enumeration: codeSurfaceType)	Type of material used to construct the surface.
surfaceMaterial (Enumeration: CodeSurfaceMaterial)	Material used to construct the surface of the road.
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.

### 5.13.10.Sidewalk

<b>Definition:</b> A paved or concrete pad used as a pedestrian walkway. Usually is composed of one or more SideWalkSegments.				
<b>Feature Group</b>	Surface Transportation			
<b>Feature Class Name</b>	Sidewalk			
<b>Feature Type</b>	Polygon			
<b>CADD Standard Requirements</b>				
<b>Layer/Level</b>	<b>Description</b>			
C-SITE-WALK-	Walks, trails and bicycle paths			
L-SITE-WALK-	Walks and steps			
V-SITE-WALK-	Walks, trails, and bicycle paths			
	<b>Color</b>	<b>Linetype</b>	<b>Line Weight</b>	<b>Symbol</b>
<b>AutoDesk Standards</b>	8 (all)	Continuous (all)	1 mm (all)	User Defined
<b>MicroStation Standards</b>	9 (all)		7 (all)	
<b>Sensitivity</b>	Restricted			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>Sidewalk</i>	Extension	
	<b>FGDC</b>	<i>Sidewalk</i>	Extension	
	<b>SDSFIE</b>	<i>pedestrian_sidewalk_area</i>		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect all sidewalks as individual polygon objects. Where two or more sidewalks intersect, collect as separate polygons depicting beginning, intersection and end. Collect sidewalk at the outer edge of pavement.</i>				
<b>Monumentation</b>	None			
<b>Survey Point Location</b>	<b>Horizontal</b>		<b>Vertical</b>	
	N/A		N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>		<b>Vertical</b>	
	± 5 ft		<b>Orthometric</b>	<b>Ellipsoidal</b>
			± 5 ft	N/A

Resolution	Geographic Coordinates	Distances and Elevations
	Five hundredth of arc second	Nearest Foot
<b>Feature Attributes</b>		
Attribute (Datatype)	Description	
name (VARCHAR2 (50))	Name of the feature.	
description (VARCHAR2 (255))	A brief description of any special characteristics of the sidewalk.	
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.	
walkUse (String 26)	A short description of the primary use of the sidewalk.	
AmericanDisabilitiesAct (Boolean)	Boolean indicating whether or not the walkway is in compliance with the American Disabilities Act.	
length (Real)	The overall length of the sidewalk section.	
width (Real)	The mean width of the sidewalk section.	
surfaceMaterial (Enumeration: CodeSurfaceMaterial)	Primary material used in the sidewalk and/or trail.	
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.	
segmentType (Enumeration: CodeSegmentType)	Code indicating the type of segment being classified.	
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.	

**5.13.11.Tunnel**

<b>Definition:</b> The area of a transportation passage, open at both ends, used to provide access through or under a natural obstacle.				
<b>Feature Group</b>	Surface Transportation			
<b>Feature Class Name</b>	Tunnel			
<b>Feature Type</b>	Polygon			
<b>CADD Standard Requirements</b>				
Layer/Level	Description			
L-SITE-TUNL-	Tunnels			
	Color	Linetype	Line Weight	Symbol
<b>AutoDesk Standards</b>	7	Continuous	1 MM	User Defined
<b>MicroStation Standards</b>	0		7	
<b>Sensitivity</b>	Restricted			
<b>Equivalent Standards</b>	<b>AIXM</b>	<i>Tunnel</i>		Extension
	<b>FGDC</b>	<i>Tunnel</i>		Extension
	<b>SDSFIE</b>	<i>tunnel_area</i>		
<b>Documentation and Submission Requirements</b>	None			
<b>Related Features</b>				
<b>Data Capture Rules:</b> <i>Collect the tunnel extending between the entrance points with a width defined by edge of pavement at either entrance.</i>				
<b>Monumentation</b>	None			

<b>Survey Point Location</b>	<b>Horizontal</b>	<b>Vertical</b>	
	N/A	N/A	
<b>Accuracy Requirements (in feet)</b>	<b>Horizontal</b>	<b>Vertical</b>	
	± 5 ft	<b>Orthometric</b> ± 5 ft	<b>Ellipsoidal</b> N/A
<b>Resolution</b>	<b>Geographic Coordinates</b>	<b>Distances and Elevations</b>	
	Five hundredth of arc second	Nearest Foot	
<b>Feature Attributes</b>			
<b>Attribute (Datatype)</b>	<b>Description</b>		
name (VARCHAR2 (50))	Name of the feature.		
description (VARCHAR2 (255))	Description of the feature.		
status (Enumeration: codeStatus)	A temporal description of the operational status of the feature. This attribute is used to describe real-time status.		
type (String 16)	The code that represents the type of tunnel		
verticalClearance (Real)	Indicates the actual vertical clearance to the top of the tunnel imposed by any restrictions.		
averageHeight (Real)	The average height of the tunnel.		
averageWidth (Real)	The average width of the tunnel.		
length (Real)	The length of the tunnel.		
userFlag (String 254)	An operator-defined work area. This attribute can be used by the operator for user-defined system processes. It does not affect the subject item's data integrity and should not be used to store the subject item's data.		
directionality (Enumeration:CodeDirectionality)			
segmentType (Enumeration: CodeSegmentType)	Code indicating the type of segment being classified.		
Alternative (Integer2)	Discriminator used to tie features of a plan or proposal together into a version.		