CHAPTER 6-02-03.1
AIRPORT RUNWAY APPROACH HAZARDS

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6-02-03.1-01. Definitions.

1. "Nonprecision instrument runway" means a runway having an existing instrument approach procedure utilizing air navigation facilities with only horizontal guidance, or area type navigation equipment, for which a straight-in nonprecision instrument approach procedure has been approved, or planned, and for which no precision approach facilities are planned, or indicated on a planning document.

2. "Precision instrument runway" means a runway having an existing instrument approach procedure utilizing an instrument landing system, or a precision approach radar. It also means a runway for which a precision approach system is planned and is so indicated by an approved airport layout plan or planning document.

3. "Utility runway" means a runway that is constructed for and intended to be used by propeller-driven aircraft of twelve thousand five hundred pounds maximum gross weight and less.

4. "Visual runway" means a runway intended solely for the operation of aircraft using visual approach procedures, with no straight-in instrument approach procedure and no instrument designation indicated on an approved airport layout plan, or by any planning document submitted to the North Dakota aeronautics commission by a competent authority.

History: Effective April 1, 2016.
General Authority: NDCC 2-05-07
Law Implemented: NDCC 2-03-12

6-02-03.1-02. General.

Obstructions to air navigation are prohibited. The following rules, criteria, regulations, and minimum standards governing the construction or maintenance of hazards or obstructions near runway approaches to any airport that is open for public use in North Dakota, whether publicly or privately owned, is hereby adopted by the North Dakota aeronautics commission pursuant to authority set forth in North Dakota Century Code section 2-03-12.

History: Effective April 1, 2016.
General Authority: NDCC 2-03-12, 2-05-07, 2-05-21
Law Implemented: NDCC 2-03-12

6-02-03.1-03. Procedure for determining obstructions.

This part establishes standards for determining obstructions to air navigation. It applies to existing and proposed manmade objects, objects of natural growth, and terrain. The standards apply to the use of navigable airspace by aircraft and to existing public airports. Additionally, the standards apply to a planned public airport, or a change in an existing public airport, if a proposal therefore is on file with the North Dakota aeronautics commission.

1. An existing object, including a mobile object, is, and a future object would be, an obstruction to air navigation if it is of greater height than any of the following heights or surfaces:

    a. A height of four hundred ninety-nine feet above ground level at the site of the object.

    b. A height that is two hundred feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than three thousand two hundred feet in actual length, and that height increases in the proportion of one hundred feet for each additional nautical mile of distance from the airport up to a maximum of four hundred ninety-nine feet.

    c. A height within a terminal obstacle clearance area, including an initial approach segment, a departure area, and a circling approach area, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required obstacle clearance.

    d. A height within an en route obstacle clearance area, including turn and termination areas, of a federal airway or approved off-airway route, that would increase the minimum obstacle clearance altitude.

    e. The surface of a takeoff and landing area of an airport or any airport imaginary surface. However, no part of the takeoff or landing area itself will be considered an obstruction.

2. Except for traverse ways on or near an airport with an operative ground traffic control service, furnished by an air traffic control tower or by the airport management and coordinated with the air traffic control service, the standards of subsection 1 of this section apply to traverse ways used or to be used for the passage of mobile objects only after the heights of these traverse ways are increased by:

    a. Seventeen feet for an interstate highway that is part of the national system of military and interstate highways where overcrossings are designed for a minimum of seventeen feet vertical distance.

    b. Fifteen feet for any other public roadway.

    c. Ten feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road.

    d. Twenty-three feet for a railroad.

    e. For a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it.

Failure to comply with the above regulations regarding obstructions to air navigation is prohibited under this chapter.

History: April 1, 2016.
General Authority: NDCC 2-03-12
Law Implemented: NDCC 2-03-12

6-02-03.1-04. Airport referenced imaginary surfaces.

The following airport imaginary surfaces are established with relation to the airport and to each runway. The size of each imaginary surface is based on the classification of each runway and the type of approach available or planned for that runway. Refer to Exhibit A for a table showing the

classification and dimensional standards. Refer to Exhibit B and C for a graphical depiction of the imaginary surfaces.

1. **Primary surface.** A surface longitudinally centered on a runway. When the runway has a specially prepared hard surface, the primary surface extends two hundred feet beyond each end of that runway; but when the runway has no specially prepared hard surface, or planned hard surface, the primary surface ends at each end of that runway. The elevation of any point on the primary surface is the same as the elevation of the nearest point on the runway centerline. The width of a primary surface is:

    a. Two hundred fifty feet for utility runways having only visual approaches.

    b. Five hundred feet for utility runways having nonprecision instrument approaches.

    c. For other than utility runways the width is:

        (1) Five hundred feet for visual runways having only visual approaches.

        (2) Five hundred feet for nonprecision instrument runways having visibility minimums greater than three-fourths statute mile.

        (3) One thousand feet for a nonprecision instrument runway having a nonprecision instrument approach with visibility minimums as low as three-fourths of a statute mile, and for precision instrument runways.

The width of the primary surface of a runway will be that width prescribed in this section for the most precise approach existing or planned for either end of that runway.

2. **Approach surface.** A surface longitudinally centered on the extended runway centerline and extending outward and upward from each end of the primary surface. An approach surface is applied to each end of each runway based upon the type of approach available or planned for that runway end.

    a. The inner edge of the approach surface is the same width as the primary surface and it expands uniformly to a width of:

        (1) One thousand two hundred fifty feet for that end of a utility runway with only visual approaches;

        (2) One thousand fifty feet for that end of a runway other than a utility runway with only visual approaches;

        (3) Two thousand feet for that end of a utility runway with a nonprecision instrument approach;

        (4) Three thousand five hundred feet for that end of a nonprecision instrument runway other than utility, having visibility minimums greater than three-fourths of a statute mile;

        (5) Four thousand feet for that end of a nonprecision instrument runway, other than utility, having a nonprecision instrument approach with visibility minimums as low as three-fourths statute mile; and

        (6) Sixteen thousand feet for precision instrument runways.

    b. The approach surface extends for a horizontal distance of:

        (1) Five thousand feet at a slope of twenty to one for all utility and visual runways;

(2) Ten thousand feet at a slope of thirty-four to one for all nonprecision instrument runways other than utility; and

(3) Ten thousand feet at a slope of fifty to one with an additional forty thousand feet at a slope of forty to one for all precision instrument runways.

3. **Horizontal surface.** A horizontal plane one hundred fifty feet above the established airport elevation, the perimeter of which is constructed by swinging arcs of specified radii from the center of each end of the primary surface of each runway of each airport and connecting the adjacent arcs by lines tangent to those arcs. The radius of each arc is:

   a. Five thousand feet for all runways designated as utility or visual;

   b. Ten thousand feet for all other runways. The radius of the arc specified for each end of a runway will have the same arithmetical value. That value will be the highest determined for either end of the runway. When a five thousand-foot arc is encompassed by tangents connecting two adjacent ten thousand-foot arcs, the five thousand-foot arc shall be disregarded on the construction of the perimeter of the horizontal surface.

4. **Conical surface.** A surface extending outward and upward from the periphery of the horizontal surface at a slope of twenty to one for a horizontal distance of four thousand feet.

5. **Transitional surface.** These surfaces extend outward and upward at right angles to the runway centerline and the runway centerline extended at a slope of seven to one from the sides of the primary surface and from the sides of the approach surfaces. Transitional surfaces for those portions of the precision approach surface which project through and beyond the limits of the conical surface, extend a distance of five thousand feet measured horizontally from the edge of the approach surface and at right angles to the runway centerline.

History: April 1, 2016.
General Authority: NDCC 2-03-12
Law Implemented: NDCC 2-03-12

6-02-03.1-05. Penalty.

In accordance with North Dakota Century Code section 2-03-13, failure to comply with this section constitutes a class A misdemeanor.

History: Effective April 1, 2016.
General Authority: NDCC 2-03-12
Law Implemented: NDCC 2-03-12

EXHIBIT A

DIM	Item	Dimensional Standards (Feet)					
		Visual Runway		Nonprecision Instrument Runway			Precision Instrument Runway PIR
					B		
		A	B	A	C	D	
A	Width of primary surface and approach surface width at inner end	250	500	500	500	1,000	1,000
B	Radius of horizontal surface	5,000	5,000	5,000	10,000	10,000	10,000
		Visual Approach		Nonprecision Instrument Approach			Precision Instrument Approach
					B		
		A	B	A	C	D	
C	Approach surface width at end	1,250	1,500	2,000	3,500	4,000	16,000
D	Approach surface length	5,000	5,000	5,000	10,000	10,000	*
E	Approach slope	20:1	20:1	20:1	34:1	34:1	*

A - Utility runways

B - Runways larger than utility

C - Visibility minimums greater than three-fourths mile

D - Visibility minimums as low as three-fourths mile

* - Precision instrument approach is 50:1 for inner ten thousand feet and 40:1 for an additional forty thousand feet

EXHIBIT B

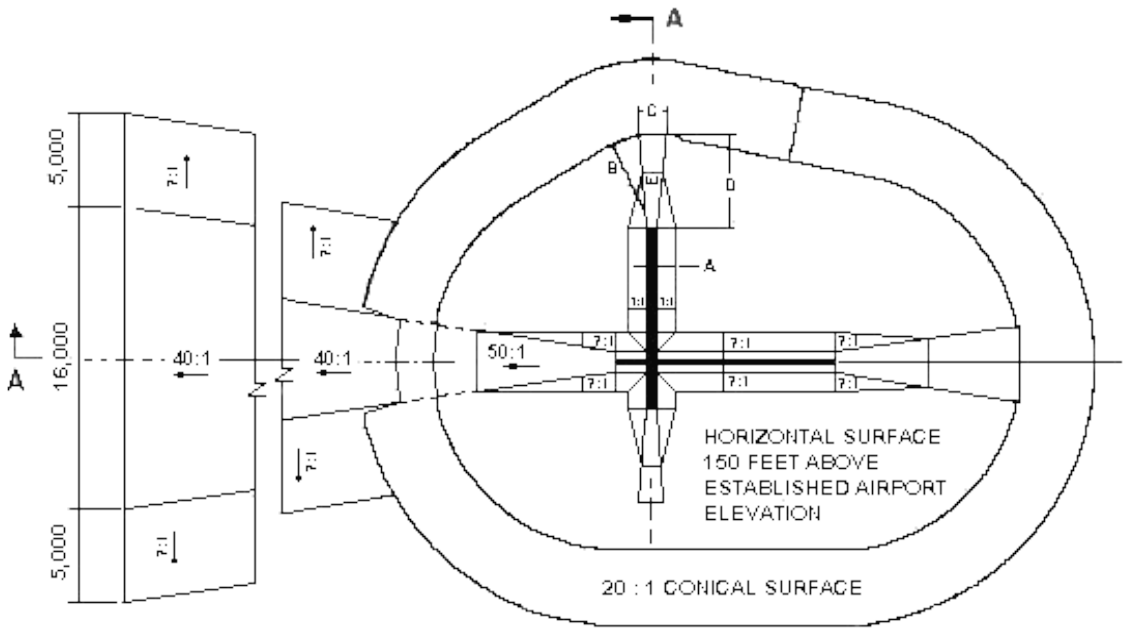
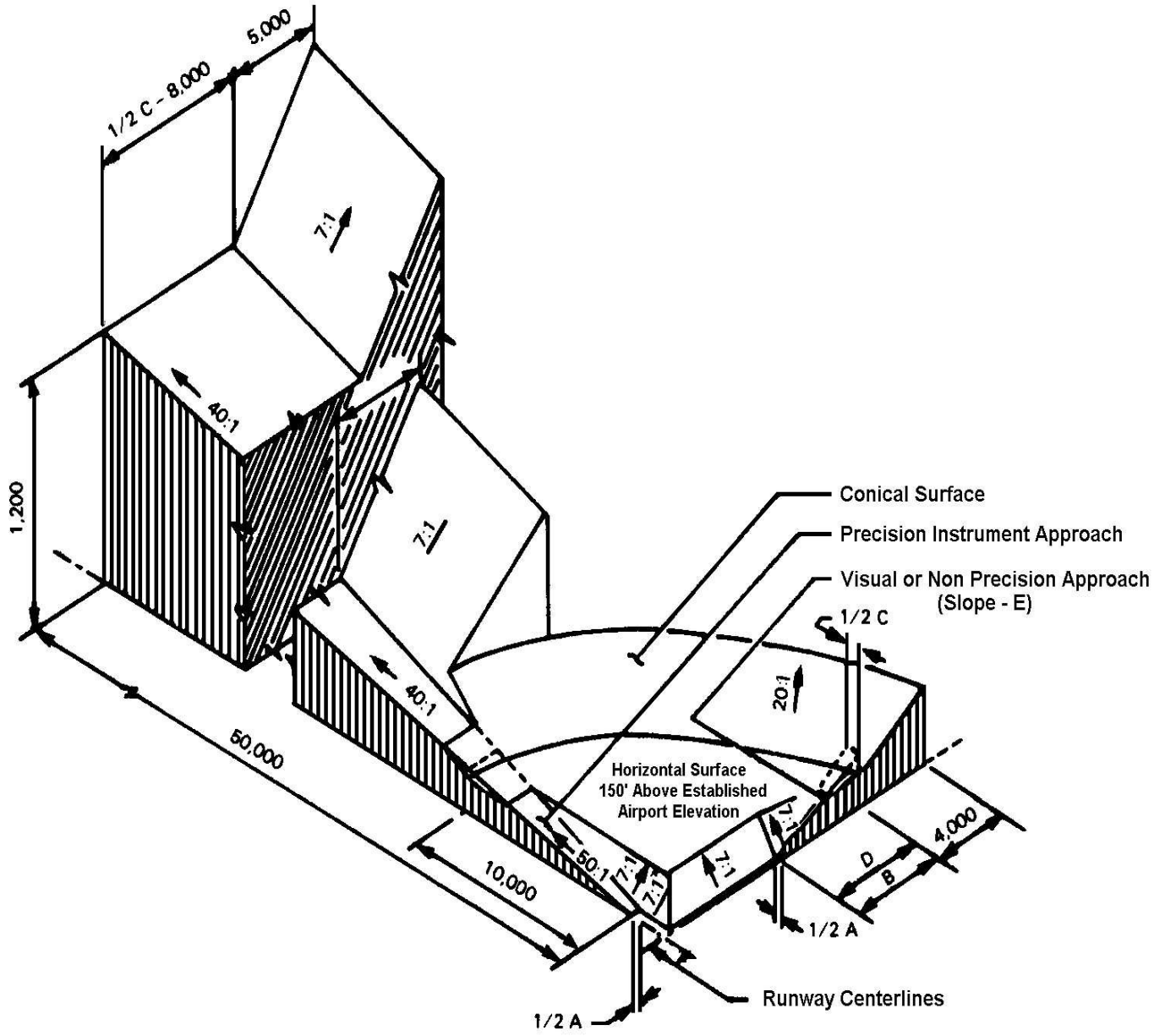

A
C
B
D
A
5,000
7:1
16,000
40:1
40:1
50:1
7:1
HORIZONTAL SURFACE
150 FEET ABOVE
ESTABLISHED AIRPORT
ELEVATION
20 : 1 CONICAL SURFACE
5,000

EXHIBIT C


5,000
1/2 C - 8,000
7:1
40:1
1,200
7:1
40:1
50,000
10,000
50:1
7:1
7:1
7:1
Conical Surface
Precision Instrument Approach
Visual or Non Precision Approach
(Slope - E)
1/2 C
20:1
Horizontal Surface
150' Above Established
Airport Elevation
7:1
D
B
4,000
1/2 A
1/2 A
Runway Centerlines