

CHANGE**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION****JO 7400.2K
CHG 1****Air Traffic Organization Policy****Effective Date:**
July 24, 2014**SUBJ:** Procedures for Handling Airspace Matters

- 1. Purpose of This Change.** This change transmits revised pages to Federal Aviation Administration Order JO 7400.2K, Procedures for Handling Airspace Matters.
- 2. Audience.** This change applies to all Air Traffic Organization (ATO) personnel and anyone using ATO directives. This order also applies to all regional, service area, and field organizational elements involved in rulemaking and nonrulemaking actions associated with airspace allocation and utilization, obstruction evaluation, obstruction marking and lighting, airport airspace analysis, and the management of air navigation aids.
- 3. Where Can I Find This Change?** This change is available on the FAA Web site at http://faa.gov/air_traffic/publications and https://employees.faa.gov/tools_resources/orders_notices/.
- 4. Explanation of Policy Change.** See the Explanation of Changes attachment which has editorial corrections and changes submitted through normal procedures.
- 5. Distribution.** This change is distributed to select offices in Washington headquarters; the Office of Commercial Space Transportation; regional Flight Standards; Airports Divisions; service area offices; the William J. Hughes Technical Center; the Mike Monroney Aeronautical Center; Technical Operations Aviation System Standards; all field facilities; international aviation field offices; and interested aviation public.
- 6. Disposition of Transmittal.** Retain this transmittal until superseded by a new basic order.
- 7. Page Control Chart.** See the page control chart attachment.



Elizabeth L. Ray
Vice President, Mission Support Services
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Date: 6/2/14

Explanation of Changes

Change 1

**Direct questions through appropriate facility/service center office staff
to the Office of Primary Interest (OPI).**

- a. 5-1-1. PURPOSE**
- 5-1-2. AUTHORITY**
- 5-2-1. REQUIREMENTS**
- 5-2-3. FAA FORMS**
- 6-1-5. STRUCTURES EXCEEDING
2,000 FEET**
- 7-2-4. EXTENSION PERIOD**
- 7-3-1. REVISIONS AND
TERMINATIONS BASED ON NEW FACTS**

This change updates the title, guidance, and policy in reference to Title 14 of the Code of Federal Regulations, Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace. The graphic figures in chapter 5, section 2 are also updated to reflect new guidelines.

- b. 5-1-3. POLICY**
- 5-1-10. RELEASE OF INFORMATION**
- 5-2-2. PROCESSING**
- 5-2-3. FAA FORMS**
- 6-1-1. POLICY**
- 6-3-2. SCOPE**

This change replaces “obstruction evaluation” study with “aeronautical” study to clarify that an obstruction is evaluated during an aeronautical study. This change also includes website information for the electronic collection of data.

- c. 5-2-2. PROCESSING**
- 6-3-11. EVALUATING PLANNED OR
FUTURE AIRPORT DEVELOPMENT PRO-
GRAMS**
- 6-3-13. CONSIDERING SHIELDING**
- 7-2-1. AUTHORITY**

This change revises the reference to Air Traffic personnel to more specifically identify the Obstruction Evaluation Group (OEG), which was streamlined to Headquarters during the Air Traffic Organization transition.

- d. 6-2-4. ADDITIONAL COORDINATION**
- 6-3-2. SCOPE**

- 6-3-6. RESPONSIBILITY**
- 6-3-7. AIRPORT SURFACE AND
CLEARANCE AREAS**
- 6-3-8. EVALUATING EFFECT ON VFR
OPERATIONS**

In accordance with the revised Part 77, this change updates all references to “military” as “Department of Defense (DOD),” and includes the role of the Department of Homeland Security where appropriate. The graphic figures in chapter 6, section 3 are also updated to reflect these new guidelines.

- e. 6-3-6. RESPONSIBILITY**
- 6-3-8. EVALUATING EFFECT ON VFR
OPERATIONS**

Prior to the recent rule change, Part 77 provided that a proposed or existing structure was an obstruction to air navigation if it was higher than 500 feet above ground level (AGL). The FAA adopted the proposal that lowers the height of a structure identified as an obstruction from above 500 feet to above 499 feet. This change (including the graphic figures in chapter 6, section 3) is updated to reflect the new guidelines.

- f. 7-3-3. STANDARD FORMAT**

The automated Obstruction Evaluation/Airport Airspace Analysis program replaced much of the manual processes required during an aeronautical study with equivalent electronic processes. This change is updated to reflect the current automation.

- g. 32-1-3. BACKGROUND**
- 32-1-4. DELEGATION OF AUTHORITY**
- 32-1-5. RESPONSIBILITIES**
- 32-2-1. PROCEDURES**
- Appendix 1. Environmental Study Process
Flow Chart**
- Appendix 5. Air Traffic Initial Environ-
mental Review**
- Appendix 6. Sample Department of Trans-**

**portation Federal Aviation Administration
Categorical Exclusion Declaration**

The content herein is updated to reflect the implementation of the Re-engineered Environmental Review Process for Instrument Flight Procedures.

h. Entire publication.

Additional editorial/format changes were made where necessary. Revision bars were not used because of the insignificant nature of these changes.

FAA Order JO 7400.2K
Change 1
Page Control Chart
July 24, 2014

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Order JO 7400.2K

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Part 1. General Procedures for Airspace Management

Chapter 1. General

Section 1. Introduction

1-1-1. PURPOSE OF THIS ORDER

a. This order prescribes policy, criteria, guidelines, and procedures applicable to the System Operations Services, System Operations Airspace and AIM; Technical Operations ATC Spectrum Engineering Services; the Office of Airport Planning and Programming, APP; the Office of Airport Safety and Standards, AAS; Technical Operations Aviation System Standards; and the Flight Standards Service, AFS.

b. While this order provides procedures for handling airspace matters, additional procedures and criteria to supplement those contained herein may be set forth in other directives and should be consulted.

1-1-2. AUDIENCE

a. This order applies to all ATO personnel and anyone using ATO directives.

b. This order also applies to all regional, service area, and field organizational elements involved in rulemaking and nonrulemaking actions associated with airspace allocation and utilization, obstruction evaluation, obstruction marking and lighting, airport airspace analysis, and the management of air navigation aids.

1-1-3. WHERE TO FIND THIS ORDER

This order is available on the FAA Web site at http://faa.gov/air_traffic/publications and http://employees.faa.gov/tools_resources/orders_notices/.

1-1-4. WHAT THIS ORDER CANCELS

FAA Order 7400.2J, Procedures for Handling Airspace Matters, dated February 9, 2012, and all changes to it are canceled.

1-1-5. CHANGE AUTHORITY

The Vice President, Mission Support Services, will issue changes to this directive after obtaining concurrence from the affected Headquarters offices/services/service units on the cover of this order.

1-1-6. EXPLANATION OF CHANGES

a. The significant changes to this order are identified in the Explanation of Changes page(s). It is advisable to retain the page(s) throughout the duration of the basic order.

b. If further information is desired, please direct questions through the appropriate facility/service area/regional office to the headquarters office of primary responsibility.

1-1-7. SUBMISSION CUTOFF AND EFFECTIVE DATES

This order and its changes are scheduled to be published to coincide with AIRAC dates.

Publication Schedule		
Basic or Change	Cutoff Date for Submission	Effective Date of Publication
JO 7400.2K	8/22/13	4/3/14
Change 1	4/3/14	7/24/14
Change 2	7/24/14	1/8/15
Change 3	1/8/15	6/25/15
JO 7400.2L	6/25/15	12/10/15

1-1-8. DELIVERY DATES

If an FAA facility **has not** received the order/changes at least 30 days before the above effective dates, the facility must notify its service area office distribution officer.

1-1-9. ORDER CHANGES

a. The responsibility associated with processing and coordinating revisions to this order is delegated

to the Manager, Airspace Regulations and ATC Procedures Group.

b. Proposed changes or recommended revisions must be submitted, in writing, to Airspace Regulations and ATC Procedures Group. The proposal should include a description of the proposal, and the language to be inserted in the order.

c. When appropriate, Airspace Regulations and ATC Procedures Group may convene a workgroup for the purpose of reviewing, clarifying, editing, or revising recommendations received to revise this order. Composition of the workgroup will be determined by the subject matter, and the expertise required. Airspace Regulations and ATC Procedures Group is responsible for the selection of the members of the workgroup, and for appointing the chairperson of the group.

d. When revised, reprinted, or additional pages are issued, they will be marked as follows:

1. Each revised or added page will show the change number and effective date of the change.

2. Bold vertical lines in the margin of the text will mark the location of substantive procedural, operational, or policy changes (e.g., when material that affects the performance of duty is added, revised, or deleted).

1-1-10. DISTRIBUTION

This order is distributed to select offices in Washington headquarters; the Office of Commercial Space Transportation; regional Flight Standards; Airports Divisions; service area offices; the William J. Hughes Technical Center; the Mike Monroney Aeronautical Center; Technical Operations Aviation System Standards; all field facilities; international aviation field offices; and interested aviation public.

Part 2. Objects Affecting Navigable Airspace

Chapter 5. Basic

Section 1. General

5-1-1. PURPOSE

The guidelines, procedures, and criteria detailed in this part supplement those contained in Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace, and address the following:

- a. The performance of functions relating to the processing of notices of proposed construction or alteration.
- b. The conduct of aeronautical studies of any existing or proposed object affecting the navigable airspace.
- c. The conduct of aeronautical studies of the electromagnetic radiation effect of proposed or existing objects on the operation of air navigation facilities.
- d. The conduct of aeronautical studies of the physical effect of proposed or existing objects on the line-of-sight view of all runways, taxiways, and traffic pattern areas from the airport traffic control tower.
- e. The conduct of aeronautical studies regarding the physical effect of proposed or existing objects on airport approach lighting systems.

5-1-2. AUTHORITY

a. The FAA's authority to promote the safe and efficient use of the navigable airspace, whether concerning existing or proposed structures, is predominantly derived from Title 49 U.S.C. Section 44718 (Section 44718). It should be noted however, that Section 44718 does not provide specific authority for the FAA to regulate or control how land (real property) may be used in regard to structures that may penetrate navigable airspace.

b. Title 14 of the Code of Federal Regulations (14 CFR) Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace, was adopted to establish notice standards for proposed construc-

tion or alteration that may result in an obstruction or an interference with air navigation facilities and equipment or the navigable airspace.

5-1-3. POLICY

The prime objective of the FAA in administering Section 44718 and 14 CFR Part 77 in conducting aeronautical studies is to ensure the safety of air navigation and efficient utilization of navigable airspace by aircraft.

5-1-4. SCOPE

a. 49 U.S.C. Sections 40103 and 44718, and Part 77 apply only to structures located within any state, territory, or possession of the United States, within the District of Columbia, or within territorial waters (12 NM) surrounding such states, territories, or possessions.

b. Structures that are subject to study requirements associated with 49 U.S.C. Section 40103, 44718, and Part 77 may be man made (including mobile structures) or of natural growth and terrain whether existing, proposed, permanent, or temporary.

5-1-5. RESPONSIBILITY

The responsibility for managing the obstruction evaluation program for those structures that may affect the navigable airspace is delegated to the Obstruction Evaluation Group (OEG).

5-1-6. SENSITIVE CASES REFERRED TO WASHINGTON

The OEG Manager, or designated representative, must brief sensitive or high profile cases to the Manager, Airspace Regulations and ATC Procedures Group before issuing, revising, or extending the determination.

5-1-7. AUTOMATION

a. To the extent practicable, the obstruction evaluation/airport airspace analysis (OE/AAA) automated programs must be used in lieu of manual processing.

b. Automated obstruction evaluation (OE) correspondence forms must be used.

5-1-8. OE/AAA AUTOMATED SYSTEM AIRPORT/RUNWAY DATABASE

a. To ensure the automated Part 77 obstruction criteria and the military Part 77 obstruction criteria conflict analysis programs consider all known plans on file, the regional Airports Division is responsible for maintaining the automated airport/runway database.

1. Either the Airports Division or the Airports District Office must enter the ultimate airport reference point for any proposed public-use or military airport into the database within two working days from receipt of the information.

2. Either the Airports Division or the Airports District Office must enter any change of airport status from private-use to public-use into the database within two working days from receipt of the information. As workload permits, information on private-use airports must also be entered into the database.

3. Either the Airports Division or the Airports District Office must enter all other public-use and military airport/runway information in the database within 10 working days from receipt of the information.

b. Airports must resolve and correct any discrepancies that have been identified in the automated airport/runway database.

c. Any required corrections must be forwarded to AIM.

5-1-9. TRAINING

Employees involved with the OE/AAA program must attend the Basic Obstruction Evaluation and Airport/Airspace Analysis Course offered by the FAA Academy.

5-1-10. RELEASE OF INFORMATION

Requests from the public for access to or copies of information contained in aeronautical study files are occasionally made to the regional offices. Such requests must be processed in accordance with the provisions of the Freedom of Information Act (5 U.S.C. 552), as implemented by Part 7 of the Department of Transportation Regulations and Order 1270.1, Freedom of Information Act Program.

Section 2. Notices

5-2-1. REQUIREMENTS

a. Requirements for notifying the FAA of proposed construction or alteration are contained in Sections 77.9 (see FIG 5-2-1, FIG 5-2-2, FIG 5-2-3, FIG 5-2-4, and FIG 5-2-5).

b. No notice is required, as specified in Section 77.9(e), for certain equipment installations “of a type approved by the Administrator” when the equipment is installed in accordance with the established FAA siting criteria. Equipment installed in compliance with the siting criteria without waivers and which do not affect other runways do not have to be considered under Part 77 criteria.

c. Examples of equipment not requiring notice are:

1. Wind equipment (AWOS, ASOS, AWSS, etc.). Supplemental wind cones, wind turbines, and meteorological towers are not exempt from notice.

2. Transmissometers (Runway Visibility Value (RVV) and Runway Visual Range (RVR) equipment).

3. Instrument Landing Systems (ILS).

4. Visual Glide Slope Indicators (VGSI).

5-2-2. PROCESSING

a. Obstruction Evaluation Group (OEG) personnel must administer aeronautical studies with the

coordinated assistance of Airports, Technical Operations Services, Frequency Management, Flight Standards, Flight Procedures Team, Department of Defense, and Department of Homeland Security representatives.

b. The OEG must process notices received under the provisions of Sections 44718 and Part 77 as OE cases. The exception to this is notices received under those provisions that pertain to structures located on a public-use airport which must be processed by the Airports Division as a nonrulemaking airport (NRA) case (defined in Part 3, Airport Airspace Analysis, of this order).

c. If notice is required by any other FAA regulation, the appropriate division must process the notice under that regulation.

5-2-3. FAA FORMS

Standard FAA forms are established for use in conducting aeronautical studies. The standard FAA forms are:

- a. FAA Form 7460-1, Notice of Proposed Construction or Alteration (OE notice).

- b. FAA Form 7460-2, Notice of Actual Construction or Alteration (Supplemental Notice).

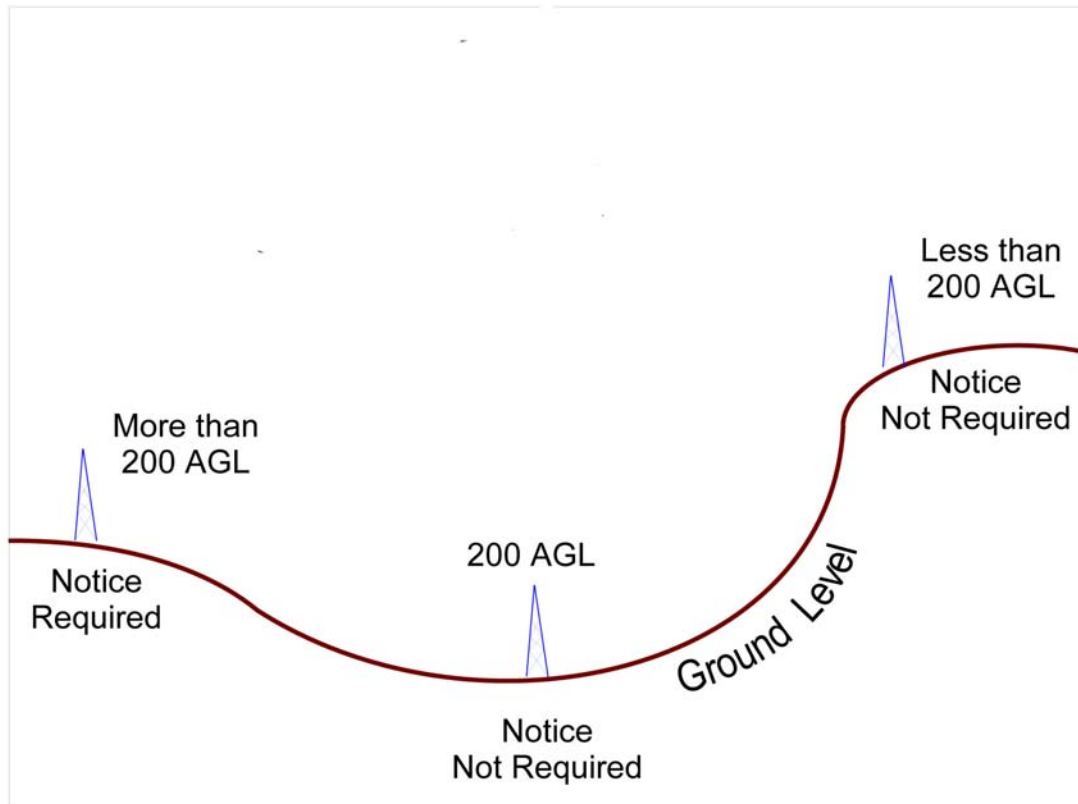
NOTE—

An electronic system to collect notice(s) of proposed construction or alteration and actual construction is available online at <https://oeaaa.faa.gov>.

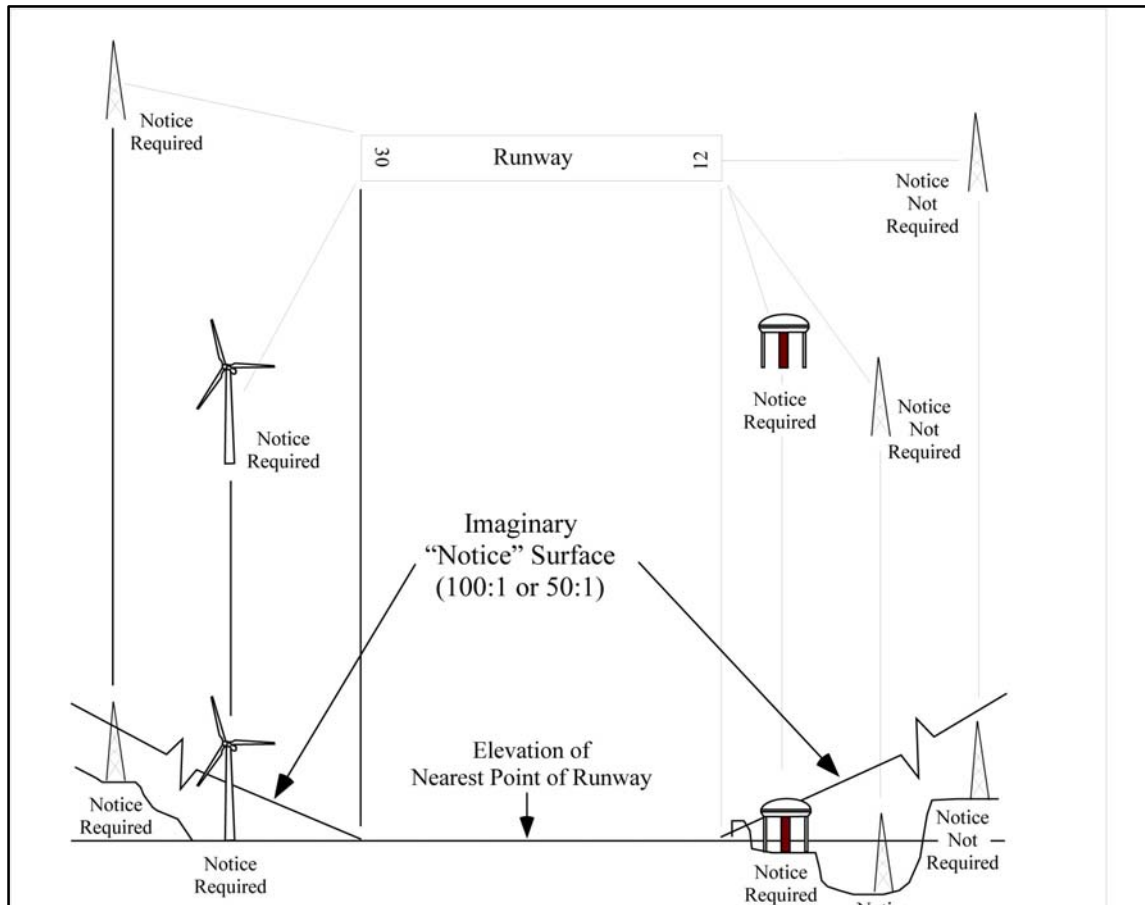
FIG 5-2-1

NOTICE REQUIREMENT RELATED TO 200 FEET IN HEIGHT**Notice of Construction or Alteration**

§77.9(a) – Any construction or alteration that is more than 200 feet AGL at its site.



**FIG 5-2-2
NOTICE REQUIREMENT RELATED TO AIRPORTS**



NOTE:

Each airport must be available for public use and listed in the Airport/Facility Directory or in either the Alaska or Pacific Chart Supplement; under construction and the subject of a notice or proposal on file with FAA, and except for DOD airports, it is clearly indicated that airport will be available for public use or for private use which has at least one FAA approved instrument approach procedure, or operated by a Federal agency or the DOD. (Heliports without specified boundaries and seaplane bases without marked sea lanes are excluded.)

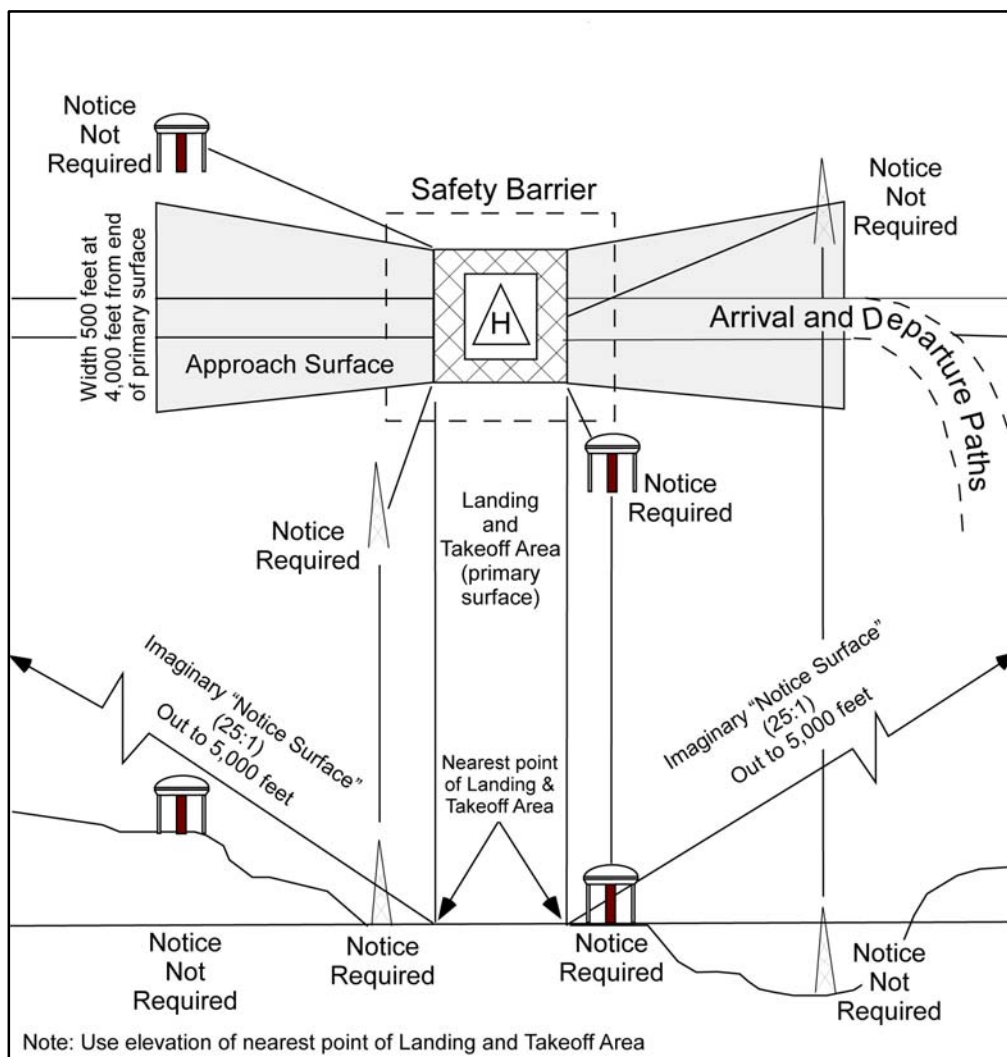
§77.9(b) – Any construction or alteration that exceeds an imaginary surface extending outward and upward at any of the following slopes:

- (1) 100:1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of each airport described in §77.9(d) with its longest runway more than 3,200 feet in actual length, excluding heliports.
- (2) 50:1 for a horizontal distance of 10,000 feet from the nearest point of the nearest runway of each airport described in §77.9(d) with its longest runway not more than 3,200 feet in actual length, excluding heliports.

§77.9(d) – Any construction or alteration on any of the following airports and heliports:

- (1) A public use in the Airport/Facility Directory, Alaska Supplement, or Pacific Chart Supplement of the U.S. Government Flight Information Publications;
- (2) A military airport under construction, or an airport under construction that will be available for public use;
- (3) An airport operated by a Federal agency or the Department of Defense;
- (4) An airport or heliport with at least one FAA–approved instrument approach procedure. At private use airports with an FAA–approved instrument approach procedure, only the instrument approach procedure will be considered.

FIG 5-2-3
NOTICE REQUIREMENT RELATED TO HELIPORTS

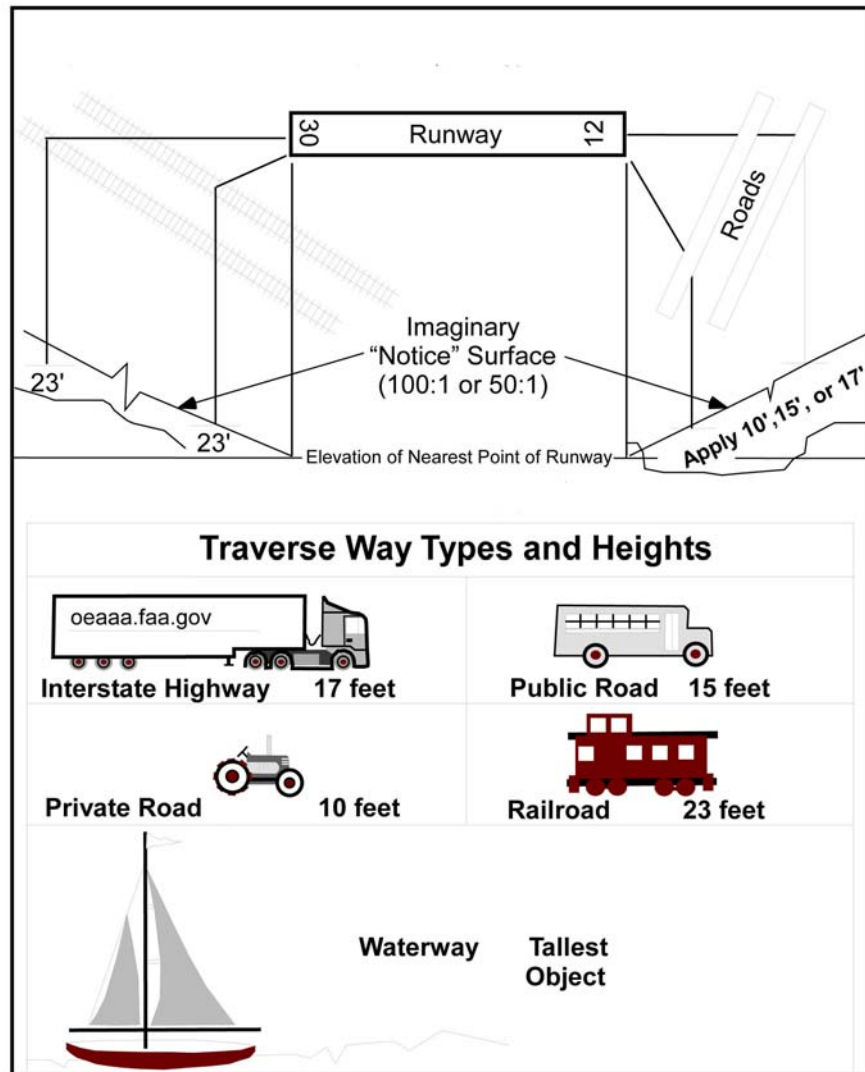


Subpart B – Notice of Construction or Alteration

§77.9(b) – Any construction or alteration that exceeds an imaginary surface extending outward and upward at any one of the following slopes:

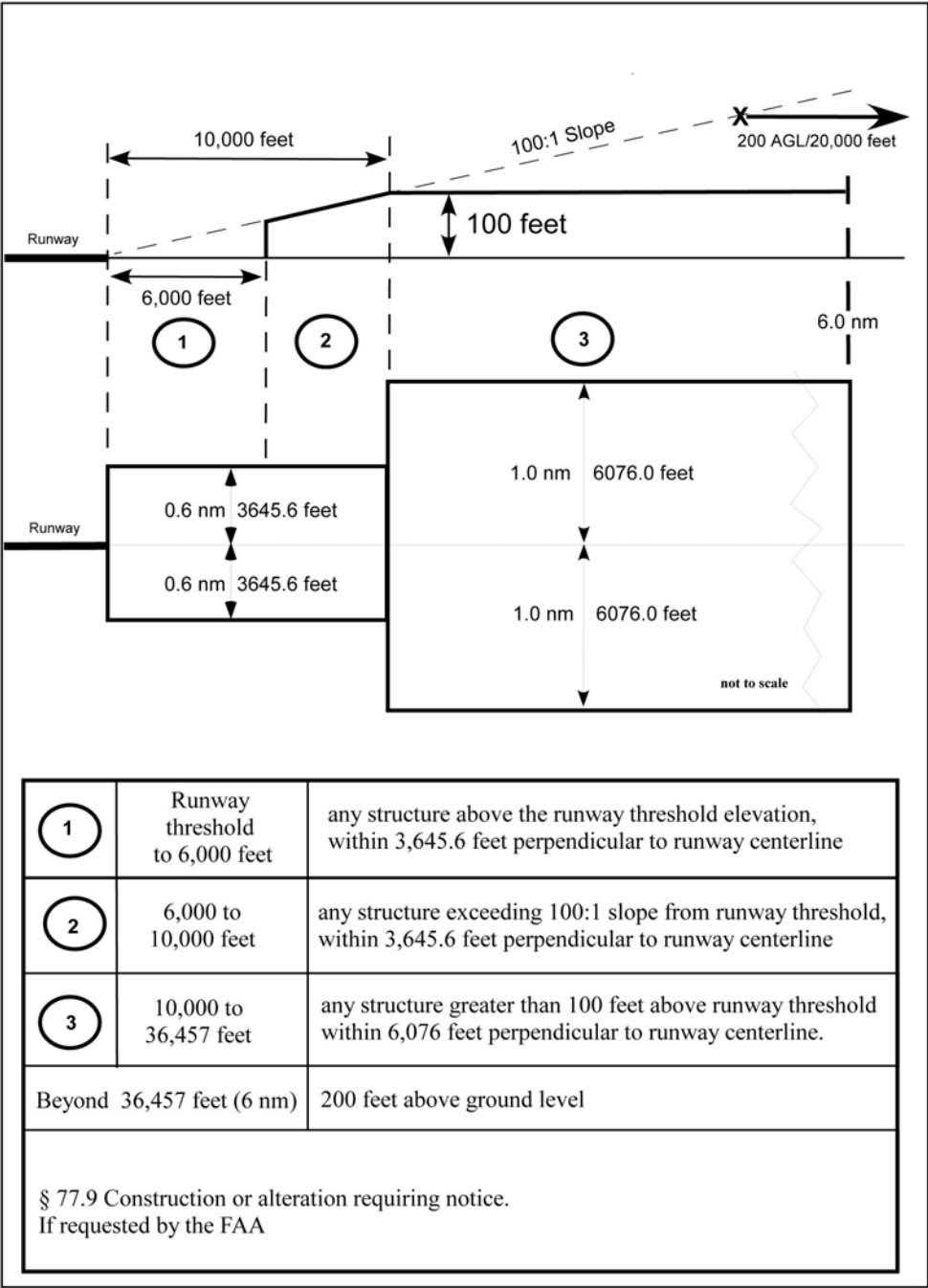
- (1) 25:1 for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of each heliport described in paragraph d of this section.

FIG 5-2-4

NOTICE REQUIREMENT RELATED TO TRAVERSE WAYS**Subpart B – Notice of Construction or Alteration**

§77.9 – Construction or alteration requiring notice. (c) Any highway, railroad, or other traverse way for mobile objects, of a height which, if adjusted upward 17 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 17 feet vertical distance, 15 feet for any other public roadway, 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road, 23 feet for a railroad, and 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, would exceed a standard of paragraph (a) or (b) of this section.

FIG 5-2-5
NOTICE REQUIREMENT RELATED TO AIRPORT INSTRUMENT APPROACH AREA
Notice of Construction or Alteration



Section 2. Initial Processing/Verification

6-2-1. VERIFICATION/E-FILING

a. The OEG must verify each obstruction evaluation case to ensure that the submitted site elevation and coordinates appear to be correct and that all necessary information has been included. Verification must include, as a minimum, the following actions:

1. Compare the submitted site depiction to the submitted coordinates when plotted.

2. Compare the submitted site elevation to the ground contour elevations in the area of the submitted coordinates when plotted.

3. If a survey is submitted, compare the information contained on the survey, with the submitted information and the site as plotted.

4. If the submission involves an existing structure, compare the submitted information to the digital obstacle file, with the previous aeronautical study (if any), and possibly the FCC tower registration information.

5. Ensure that the submission provides a complete description and clearly explains the reason for submission. The submission should include sufficient information to allow each division/service area office to accomplish its specialized portion of the obstruction evaluation.

6. If the submission involves a structure that would normally radiate frequencies, ensure that the frequencies and effective radiated power are included.

7. If the submission involves a structure over 200 feet AGL, ensure marking and/or lighting preferences are part of the submission. Sponsors must be required to specifically request the type of marking and/or lighting they desire when submitting FAA Form 7460-1. They should be encouraged to become familiar with the different type of lighting systems available. The sponsor should obtain information about these systems from the manufacturers. The sponsor can then determine which system best meets his/her needs based on purchase, installation, and maintenance costs. The FAA will consider the sponsor's desired marking and/or lighting system when conducting the aeronautical study.

b. If the submission contains errors, discrepancies, or lack of information, the OEG must request resolution by the sponsor and/or the sponsor's representative. If the sponsor does not resolve the issues within 30 days of the written request, the OEG may terminate the aeronautical study.

c. If the submission passes verification and there are no unresolved issues, initiate evaluation by other divisions by changing the status in the OE/AAA automation program to "WRK."

NOTE-

It is imperative that all data in the automated OE case file is reviewed and verified for accuracy before proceeding to "Division/Service Area Office Coordination." Any correction or change to the heights and/or coordinates after the divisions/service area offices begin evaluation must require initiating a new aeronautical study.

6-2-2. VERIFICATION/PAPER-FILING

a. Prior to assigning an aeronautical study into the OE/AAA automation program, review the submission for completeness. The following information should be considered:

1. Ground elevation of the site (site elevation).
2. Above ground elevation of the structure (AGL).
3. Latitude and longitude of the structure.
4. A 7.5-Minute U.S.G.S. Topographic Map (Quadrangle Chart) depicting the site of the structure.

b. If the submission package contains all of the required information, assign an aeronautical study number and initiate an obstruction evaluation study. Exceptions may be made for emergency situations in accordance with 77.17(d).

c. If the submission package does not contain the required information, the entire package may be returned to the sponsor with a clear explanation and a request for the sponsor to provide the information necessary to initiate the study.

d. For submission packages pertaining to structures that may be time critical, an effort should be made to obtain the required information by telephone. Information received by telephone conversation should be added to case notes. If

written confirmation is received from the sponsor, it should be faxed/scanned into the file.

6-2-3. DIVISION COORDINATION

Each division described in paragraph 5-2-2 must evaluate all notices of proposed construction or alteration received regardless of whether notice was required under Part 77, except as follows:

NOTE—

For the purpose of division/service area office coordination, Frequency Management (FM) will be considered separately in addition to Technical Operations Services. It should also be noted that FM responds separately.

a. Side Mounted Non-Microwave Antennas. Airports, Technical Operations Services, Airway Facilities and the military normally are not required to review OE cases that involve the addition of antennas to a previously studied structure that does not increase in overall height of the structure. FM will continue to evaluate these cases. The FAA must have previously studied the structure and the data of the present case and it must exactly match the data of the previously studied case.

b. Side Mounted Microwave Dishes. Airports, Flight Standards, and the military normally must not be required to review OE cases that involve the addition of microwave dishes to a structure that does not increase in overall height. FM will continue to evaluate these cases. The FAA must have previously studied the structure and the data of the present case and it must exactly match the data of the previously studied case.

c. Marking and Lighting Changes. Airports, Flight Standards, Flight Procedures Team, FM, Technical Operations Services, and the military

normally are not required to review OE cases which involve only marking and lighting changes. The FAA must have previously studied the structure and the data of the present case and it must exactly match the data of the prior case.

d. Temporary Structures. Airports, Flight Standards, FM, and the military normally must not be required to review OE cases which involve temporary structures of a 6 month or less duration. All appropriate divisions/service area offices must review temporary structures of a longer duration.

e. Flight Procedures Team normally must not be required to review OE cases that are beyond 14 NM from the airport reference point of the nearest public-use or military airport and the height of the structure is not more than 200 feet above ground level.

f. Airports normally must not be required to review OE cases that are beyond 3 NM from the airport reference point of the nearest public-use or military airport.

g. Flight Standards must review OE cases that are circularized for public comment.

h. FM normally must only be required to review OE cases, that involve transmitting frequencies.

6-2-4. ADDITIONAL COORDINATION

Air traffic may request any division to review an OE case on a case-by-case basis. For instance, Flight Standards may be requested to review a marking and lighting change, the DOD may be requested to review a temporary structure if the closest airport is a DOD base, or FM may be requested to review a temporary structure if it radiates a frequency.

Section 3. Identifying/Evaluating Aeronautical Effect

6-3-1. POLICY

a. The prime objective of the FAA in conducting OE studies is to ensure the safety of air navigation, and the efficient utilization of navigable airspace by aircraft. There are many demands being placed on the use of the navigable airspace. However, when conflicts arise concerning a structure being studied, the FAA emphasizes the need for conserving the navigable airspace for aircraft; preserving the integrity of the national airspace system; and protecting air navigation facilities from either electromagnetic or physical encroachments that would preclude normal operation.

b. In the case of such a conflicting demand for the airspace by a proposed construction or alteration, the first consideration should be given to altering the proposal.

c. In the case of an existing structure, first consideration should be given to adjusting the aviation procedures to accommodate the structure. This does not preclude issuing a "Determination Of Hazard To Air Navigation" on an existing structure when the needed adjustment of aviation procedures could not be accomplished without a substantial adverse effect on aeronautical operations. In all cases, consideration should be given to all known plans on file received by the end of the public comment period or before issuance of a determination if the case was not circularized.

6-3-2. SCOPE

Part 77 establishes standards for determining obstructions to air navigation. A structure that exceeds one or more of these standards is presumed to be a hazard to air navigation unless the aeronautical study determines otherwise. An obstruction evaluation must identify:

a. The effect the structure would have:

1. On existing and proposed public-use, private use with at least one FAA-approved instrument approach procedure, and DOD airports and/or aeronautical facilities.

2. On existing and proposed visual flight rule (VFR)/instrument flight rule (IFR) aeronautical

departure, arrival and en route operations, procedures, and minimum flight altitudes.

3. Regarding physical, electromagnetic, or line-of-sight interference on existing or proposed air navigation, communications, radar, and control systems facilities.

4. On airport capacity, as well as the cumulative impact resulting from the structure when combined with the impact of other existing or proposed structures.

b. Whether marking and/or lighting is necessary.

6-3-3. DETERMINING ADVERSE EFFECT

If a structure first exceeds the obstruction standards of Part 77, and/or is found to have physical or electromagnetic radiation effect on the operation of air navigation facilities, then the proposed or existing structure, if not amended, altered, or removed, has an adverse effect if it would:

a. Require a change to an existing or planned IFR minimum flight altitude, a published or special instrument procedure, or an IFR departure procedure for a public-use airport.

b. Require a VFR operation, to change its regular flight course or altitude. This does not apply to VFR military training route (VR) operations conducted under Part 137, or operations conducted under a waiver or exemption to the CFR.

c. Restrict the clear view of runways, helipads, taxiways, or traffic patterns from the airport traffic control tower cab.

d. Derogate airport capacity/efficiency.

e. Affect future VFR and/or IFR operations as indicated by plans on file.

f. Affect the usable length of an existing or planned runway.

6-3-4. DETERMINING SIGNIFICANT VOLUME OF ACTIVITY

The type of activity must be considered in reaching a decision on the question of what volume of aeronautical activity is "significant." For example, if one or more aeronautical operations per day would be

affected, this would indicate regular and continuing activity, thus a significant volume no matter what the type of operation. However, an affected instrument procedure or minimum altitude may need to be used only an average of once a week to be considered significant if the procedure is one which serves as the primary procedure under certain conditions.

6-3-5. SUBSTANTIAL ADVERSE EFFECT

A proposed structure would have, or an existing structure has, a substantial adverse effect if it causes electromagnetic interference to the operation of an air navigation facility or the signal used by aircraft, or if there is a combination of:

- a. Adverse effect as described in paragraph 6-3-3; and
- b. A significant volume of aeronautical operations, as described in paragraph 6-3-4, would be affected.

6-3-6. RESPONSIBILITY

The FAA's obstruction evaluation program transcends organizational lines. In order to determine the effect of the structure within the required notice period, each office should forward the results of its evaluation within 15 working days to the service area office for further processing. Areas of responsibility are delegated as follows:

a. Air traffic personnel must:

1. Identify when the structure exceeds Section 77.23 (a)(1) (see FIG 6-3-1 thru FIG 6-3-6) and apply Section 77.23(b) (see FIG 5-2-4).

2. Identify the effect on existing and planned aeronautical operations, air traffic control procedures, and airport traffic patterns and making recommendations for mitigating adverse effect including marking and lighting recommendations.

3. Identify when the structure would adversely affect published helicopter route operations as specified in paragraph 6-3-8 subparagraph e, of this order, and forward the case to Flight Standards.

4. Identify whether obstruction marking/lighting are necessary and recommend the appropriate marking and/or lighting.

5. Identify when negotiations are necessary and conduct negotiations with the sponsor. This may be done in conjunction with assistance from other division/service area office personnel when their subject expertise is required (for example, in cases of electromagnetic interference).

6. Identify when circularization is necessary and conduct the required circularization process.

7. Evaluate all valid aeronautical comments received as a result of the circularization and those received as a result of the division evaluation.

8. Issue the determination (except as noted in paragraph 7-1-2, subparagraph b).

b. Regional Airports Division personnel must:

1. Verify that the airport/runway database has been reviewed, is correct, and contains all plans on file pertaining to the OE case.

2. Identify the structure's effect on existing and planned airports or improvements to airports concerning airport design criteria including potential restrictions/impacts on airport operations, capacity, efficiency and development, and making recommendations for eliminating adverse effect. Airports Divisions are not required to perform evaluations on OE cases that are further than 3 NM from the Airport Reference Point (ARP) of a public-use or military airport.

3. Determine the effect on the efficient use of airports and the safety of persons and property on the ground. Airports will resist structures and activities that conflict with an airport's planning, design, and/or recommendations from other divisions/service area offices.

c. FPT personnel must:

1. Identify when the structure exceeds Sections 77.23(a)(3), and 77.23(a)(4).

2. Identify the effect upon terminal area IFR operations, including transitions; radar vectoring; holding; instrument departure procedures; any segment of a standard instrument approach procedure (SIAP) or special SIAP, including proposed instrument procedures and departure areas; and making recommendations for eliminating adverse effect.

NOTE-

This paragraph applies to any IAP and Special SIAP at public-use and private-use airports.

3. Identify the effect on minimum en route altitudes (MEA); minimum obstruction clearance altitudes (MOCA); minimum vectoring altitudes (MVA); minimum IFR altitudes (MIA); minimum safe altitudes (MSA); minimum crossing altitudes (MCA); minimum holding altitudes (MHA); turning areas and termination areas; and making recommendations for eliminating adverse effect.

4. Coordinate with air traffic and technical operations services personnel to determine the effect of any interference with an air navigation facility on any terminal or en route procedure.

5. State what adjustments can be made to the procedure/structure to mitigate or eliminate any adverse effects of the structure on an instrument flight procedure.

d. Regional Flight Standards personnel must identify the effect on fixed-wing and helicopter VFR routes, terminal operations, and other concentrations of VFR traffic. When requested by air traffic, the Flight Standards Division must also evaluate the mitigation of adverse effect on VFR operations for marking and/or lighting of structures.

e. Technical Operations Services personnel must identify any electromagnetic and/or physical effect on air navigation and communications facilities including:

1. The presence of any electromagnetic effect in the frequency protected service volume of the facilities shown in FIG 6-3-16, FIG 6-3-17, and FIG 6-3-18.

2. The effect on the availability or quality of navigational or communications signals to or from aircraft including lighting systems (for example, VGSI), and making recommendations to eliminate adverse effect.

3. The effect on ground-based communications and NAVAID equipment, and the signal paths between ground-based and airborne equipment, and making recommendations to eliminate adverse effect.

4. The effect on the availability or quality of ground-based primary and secondary radar; direction finders; and air traffic control tower line-of-sight visibility; and making recommendations to eliminate adverse effect.

5. The effect of sunlight or artificial light reflections, and making recommendations to eliminate adverse effect.

f. Military personnel are responsible for evaluating the effect on airspace and routes used by the military.

g. Other applicable FAA offices or services may be requested to provide an evaluation of the structure on a case-by-case basis.

FIG 6-3-1
ANYWHERE

§77.17 – Obstruction Standards.

(a)(1) – A height of 499 feet AGL at the site of the object.

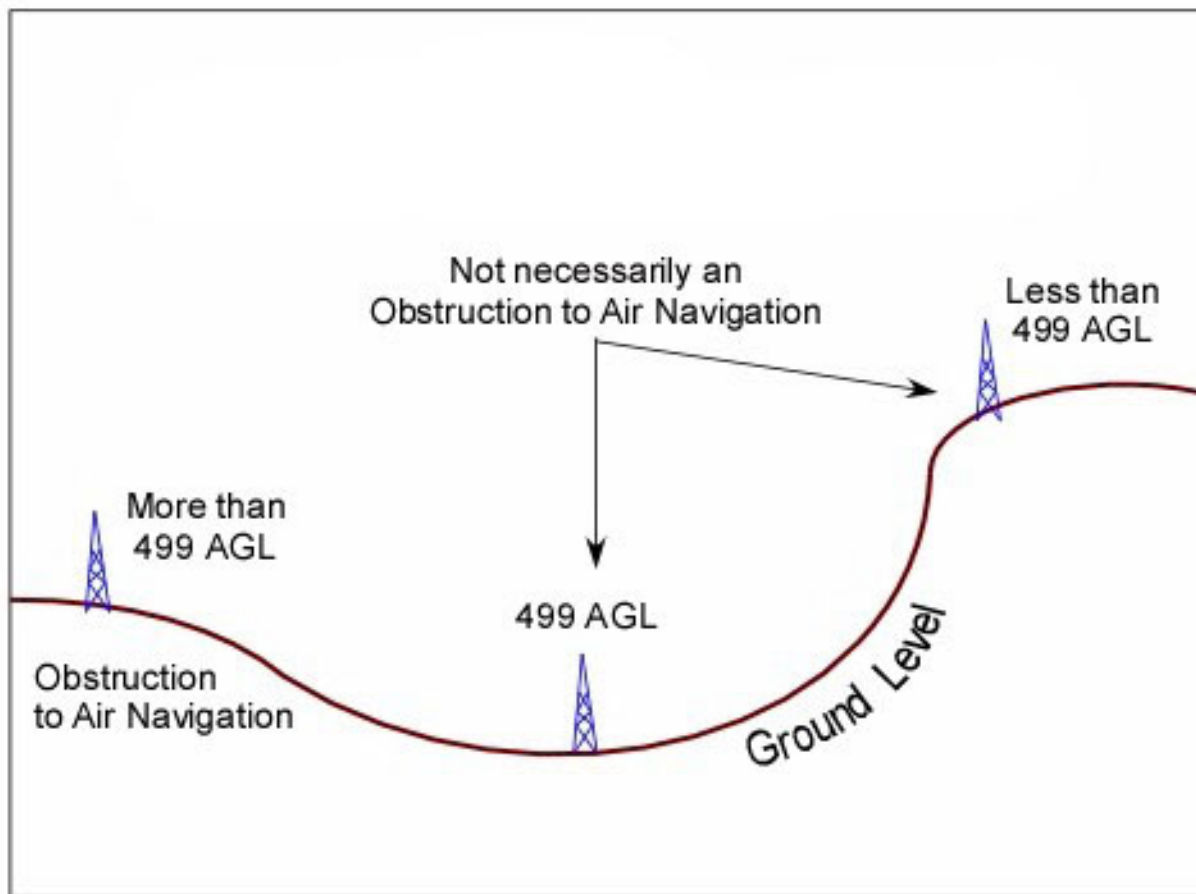
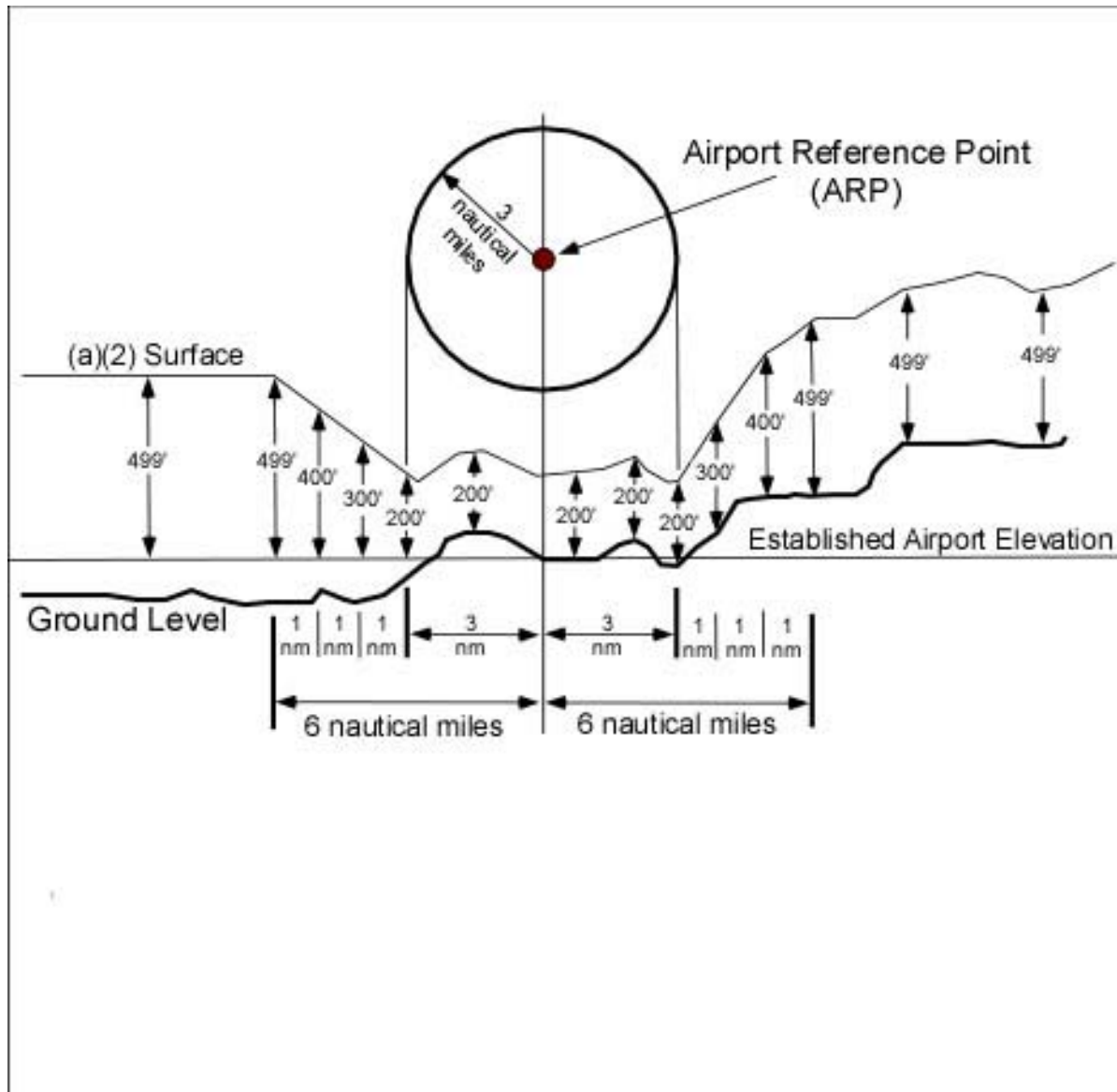


FIG 6-3-2
OBSTRUCTION STANDARDS NEAR AIRPORTS



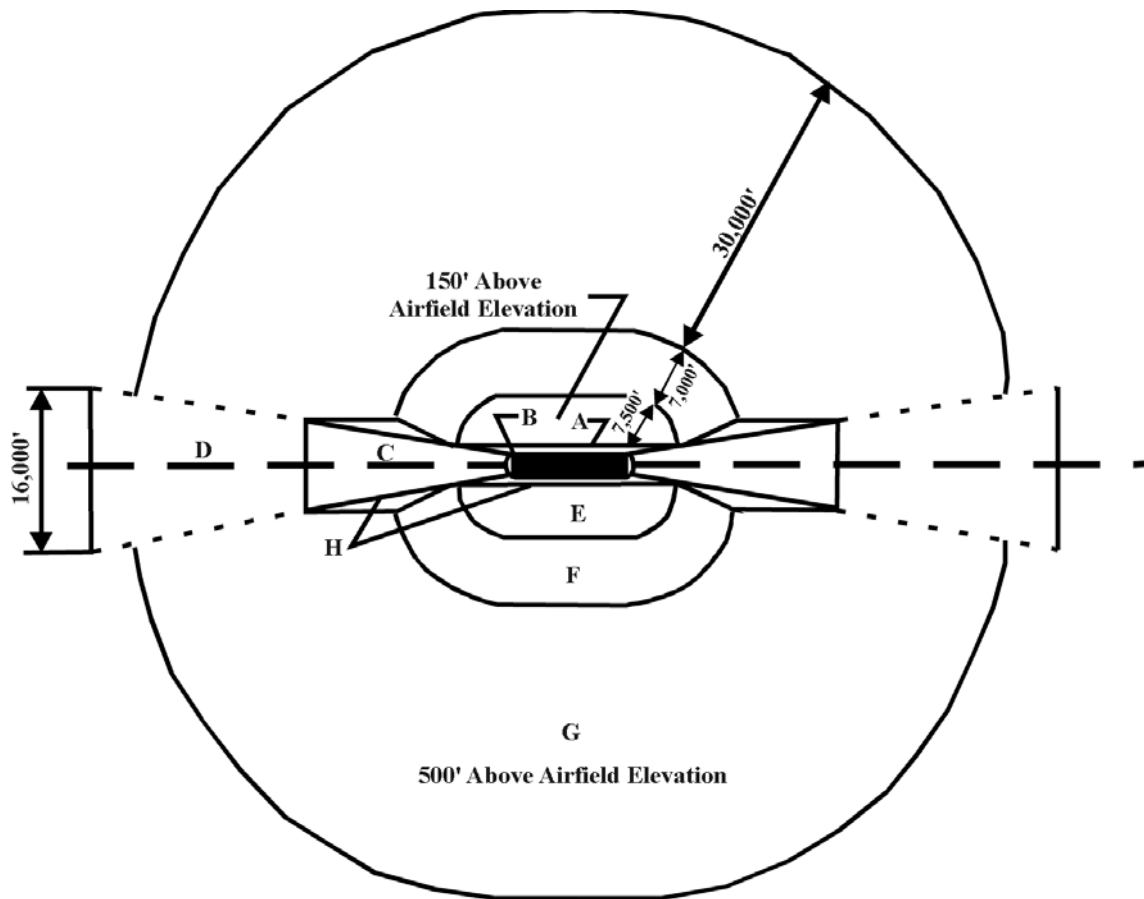
Subpart C – Obstruction Standards

§77.17(a)(2) – An object would be an obstruction to air navigation if of greater height than 200 feet above ground at its site, or above the established airport elevation, whichever is higher–

- (a) within 3NM of the established reference point of an airport with its longest runway more than 3,200 feet in actual length, and
- (b) that height increases in proportion of 100 feet for each additional nautical mile from the airport reference point up to a maximum of 499 feet.

Note: Heliports excluded.

FIG 6-3-3
DEPARTMENT OF DEFENSE AIRPORT IMAGINARY SURFACES



Legend

- | | |
|---|-----------------------------------|
| A Primary Surface | E Inner Horizontal Surface |
| B Clear Zone Surface | F Conical Surface |
| C Approach-Departure Clearance Surface (Glide Angle) | G Outer Horizontal Surface |
| D Approach-Departure Clearance Surface (Horizontal) | H Transitional Surface |

FIG 6-3-4
DEPARTMENT OF DEFENSE AIRPORT IMAGINARY SURFACES

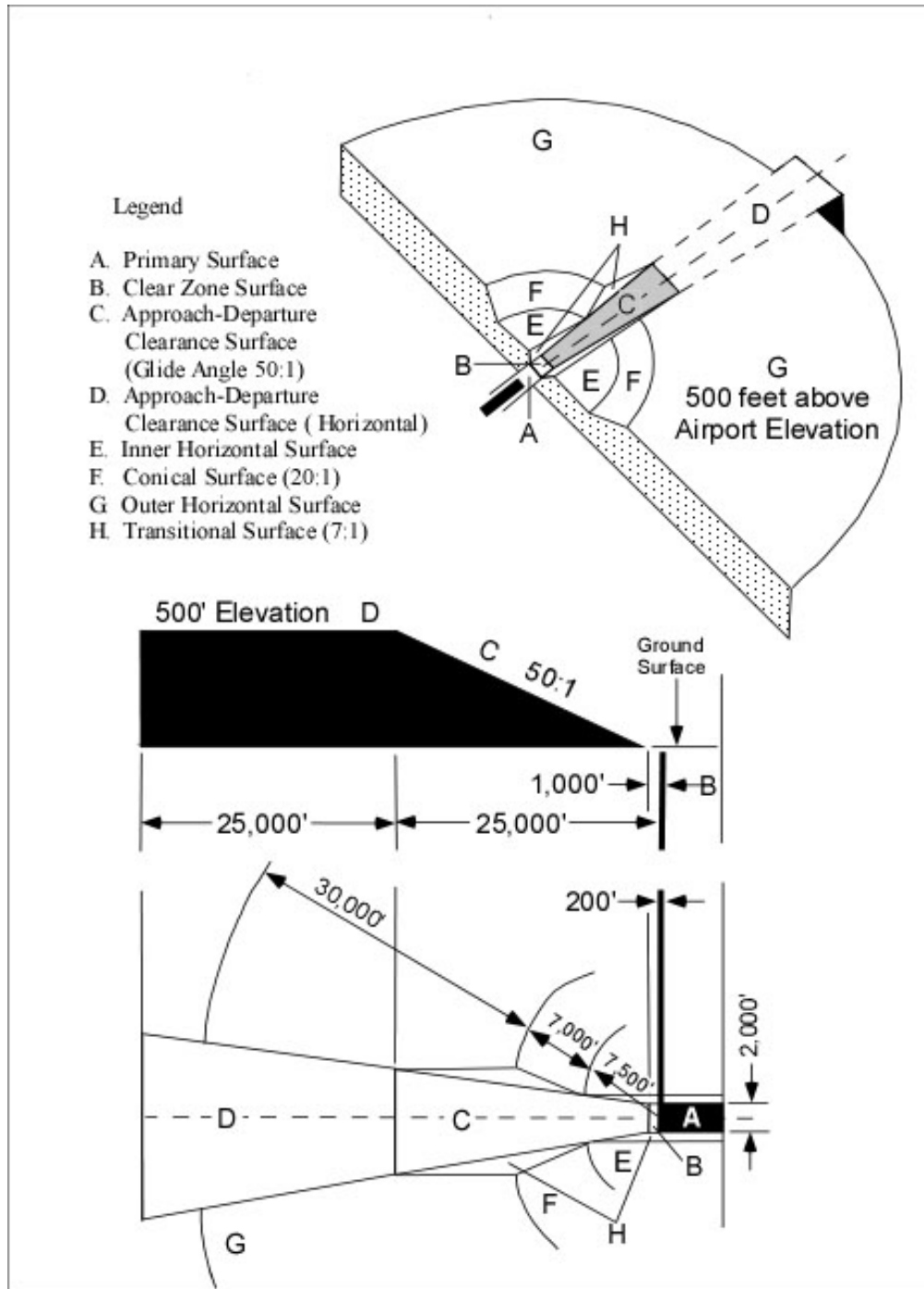


FIG 6-3-5
DEPARTMENT OF DEFENSE AIRPORT SUFACES – CLEAR ZONE

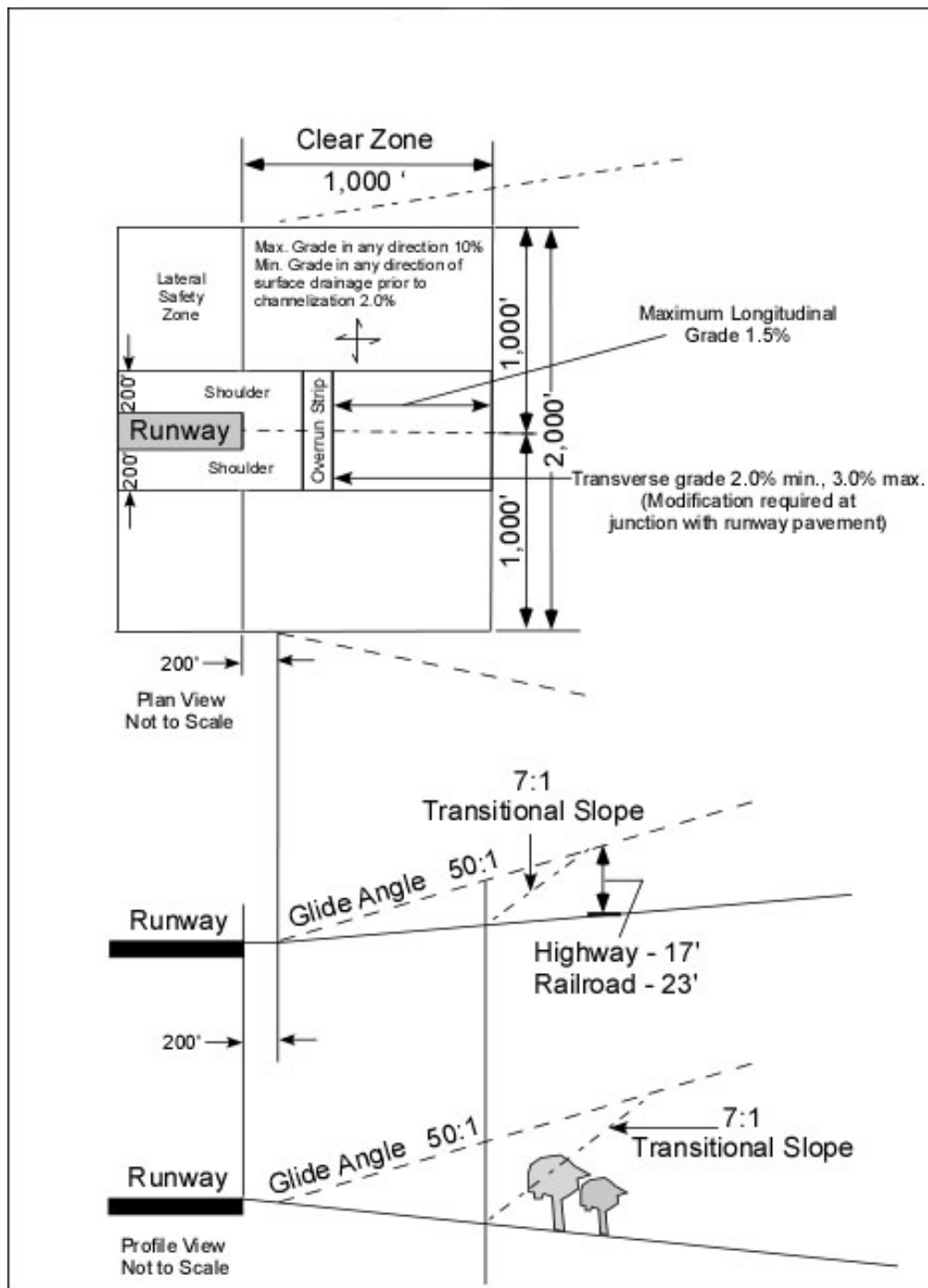


FIG 6-3-6
AIRPORT IMAGINARY SURFACES FOR HELIPORTS

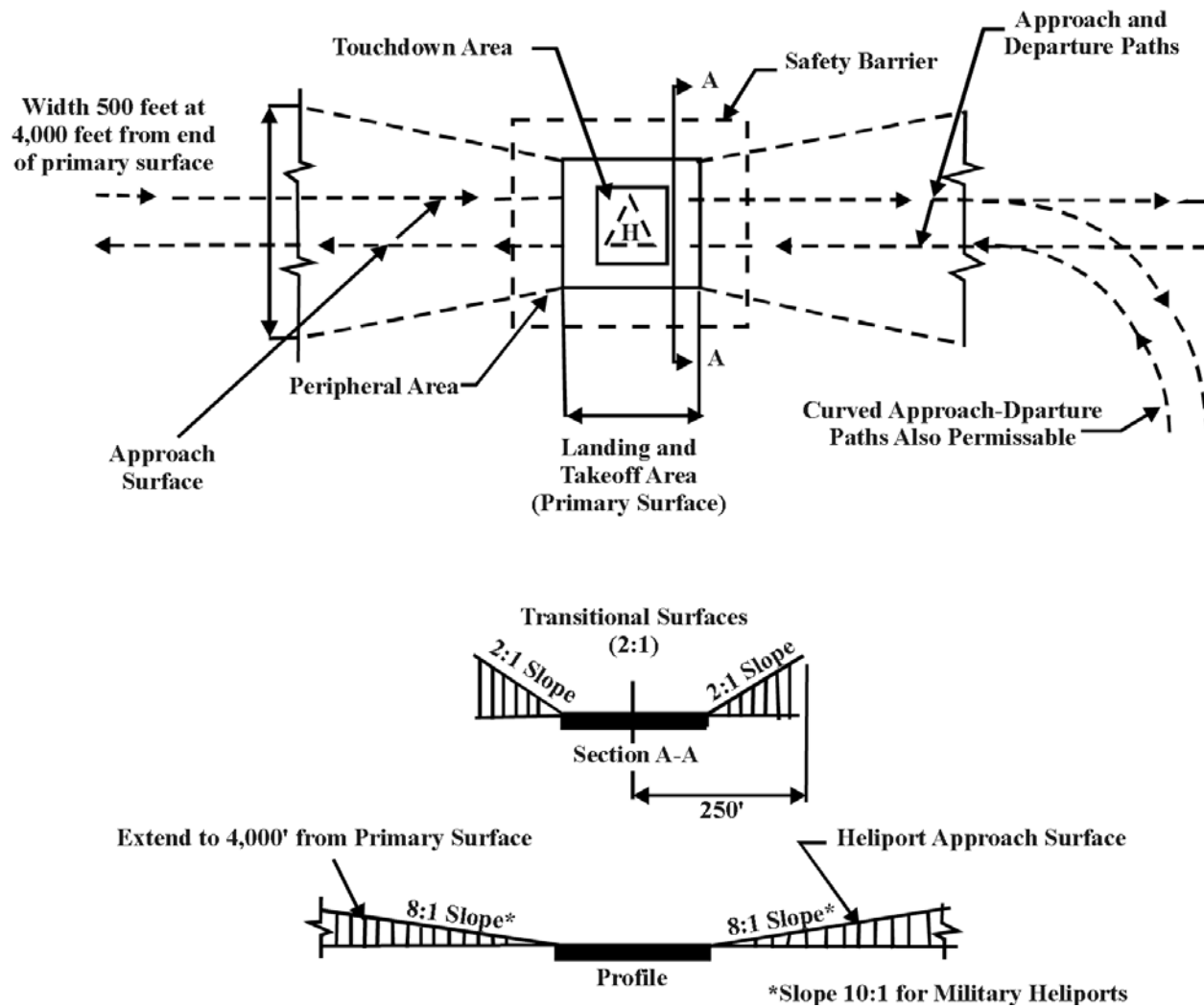


FIG 6-3-7
PART 77, APPROACH SURFACE DATA

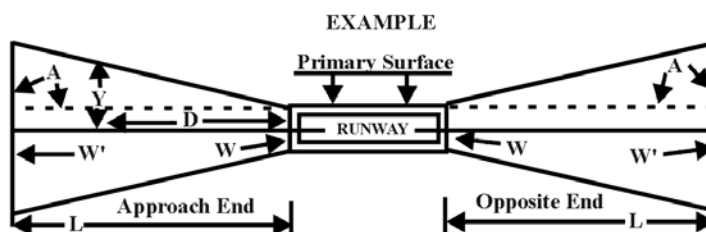
RUNWAY TYPE	RWY USE AVAILABLE/PLANNED		APPROACH SURFACE DIMENSIONS			SLOPES AND FLARE RATIOS	
	APPROACH/OPPOSITE RUNWAY END COMBINATIONS		LENGTH - L	INNER WIDTH - W	OUTER WIDTH - W'	SLOPE RATIO	FLARE RATIO - A
UTILITY RUNWAYS	V		5,000	250	1,250	20:1	.1:1
		V	5,000	250	1,250	20:1	.1:1
	V		5,000	500	1,250	20:1	.075:1
		NP	5,000	500	2,000	20:1	.15:1
	NP		5,000	500	2,000	20:1	.15:1
		NP	5,000	500	2,000	20:1	.15:1
OTHER THAN UTILITY RUNWAYS	V		5,000	500	1,500	20:1	.1:1
		V	5,000	500	1,500	20:1	.1:1
	V		5,000	500	1,500	20:1	.1:1
		NP $\frac{3}{4}$ +	10,000	500	3,500	34:1	.15:1
	V		5,000	1,000	1,500	20:1	.05:1
		NP $\frac{1}{4}$	10,000	1,000	4,000	34:1	.15:1
	V		5,000	1,000	1,500	20:1	.05:1
		P	50,000	1,000	16,000	50:1/40:1	.15:1
	NP $\frac{3}{4}$ +		10,000	500	3,500	34:1	.15:1
		NP $\frac{3}{4}$ +	10,000	500	3,500	34:1	.15:1
	NP $\frac{3}{4}$ +		10,000	1,000	3,500	34:1	.125:1
		NP $\frac{1}{4}$	10,000	1,000	4,000	34:1	.15:1
	NP $\frac{3}{4}$ +		10,000	1,000	3,500	34:1	.125:1
		P	50,000	1,000	16,000	50:1/40:1	.15:1
	NP $\frac{1}{4}$		10,000	1,000	4,000	34:1	.15:1
		NP $\frac{1}{4}$	10,000	1,000	4,000	34:1	.15:1
	NP $\frac{1}{4}$		10,000	1,000	4,000	34:1	.15:1
		P	50,000	1,000	16,000	50:1/40:1	.15:1
	P		50,000	1,000	16,000	50:1/40:1	.15:1
		P	50,000	1,000	16,000	50:1/40:1	.15:1

V - Visual

NP - Nonprecision

 $\frac{3}{4}$ + - Visibility Minimums More Than $\frac{3}{4}$ SM

P - Precision

 $\frac{3}{4}$ - Visibility Minimums As Low As $\frac{3}{4}$ SM

Sample Use Problem: Proposed structure would be located by measurement to be 20,000 feet from the end of the primary surface and 3,400 feet at 90° from the extended centerline of a precision runway (refer to Section 77.21(b) for relation of primary surface to end of runway). To determine whether it would fall within the approach surface of that runway, apply the following formula:

$$Y = D \times A + W/2$$

Y = distance for runway centerline to edge of the approach

D = distance from end of primary surface at which proposed construction is 90° from extended runway centerline

$$Y = 20,000 \times .15 + 1,000/2$$

$$Y = 3,000 + 500$$

$$Y = 3,500 \text{ (structure would be within approach surface)}$$

6-3-7. AIRPORT SURFACES AND CLEARANCE AREAS

a. CIVIL AIRPORT SURFACES

1. Civil airport imaginary surfaces are defined in Section 77.19 and are based on the category of each runway according to the type of approach (visual, nonprecision, or precision) available or planned for each runway end (see FIG 6-3-7). The appropriate runway imaginary surface must be applied to the primary surfaces related to the physical end of the specific runway surface that is usable for either takeoff or landing.

2. Approach Surface Elevation – Use the runway centerline elevation at the runway threshold and the elevation of the helipad as the elevation from which the approach surface begins (see Sections 77.19 and 77.23).

3. Heliport imaginary surfaces are defined in Section 77.23 and are based upon the size of the takeoff and landing area.

4. Planned Airport/Runway Improvements – Consider the planned runway threshold and approach type when there is a plan on file with the FAA or with an appropriate military service to extend the runway and/or upgrade its use or type of approach. The existing runway threshold and type of approach may be used for temporary structures/equipment, as appropriate.

b. DOD AIRPORT SURFACES – The obstruction standards in Section 77.19, Civil Airport Imaginary Surfaces, apply to civil operated joint-use airports. The obstruction standards in Section 77.21, DOD Airport Imaginary Surfaces, are applicable only to airports operated and controlled by a DOD service of the United States, regardless of whether use by civil aircraft is permitted.

c. TERMINAL OBSTACLE CLEARANCE AREA – The terminal obstacle clearance area specified in Section 77.17(a)(3) includes the initial, intermediate, final, and missed approach segments of an instrument approach procedure, and the circling approach and instrument departure areas. The applicable FAA approach and departure design criteria are contained in the 8260.3 Order series.

d. EN ROUTE OBSTACLE CLEARANCE AREA – The en route obstacle clearance area specified in Section 77.17(a)(4) is applicable when

evaluating the effect of a structure on an airway, a feeder route, and/or an approved off-airway route (direct route) as prescribed in the 8260.3 Order series.

6-3-8. EVALUATING EFFECT ON VFR OPERATIONS

a. PURPOSE. These guidelines are for use in determining the effect of structures, whether proposed or existing, upon VFR aeronautical operations in the navigable airspace. The intent of these guidelines is to provide a basis for analytical judgments in evaluating the effect of structures on VFR operations.

b. CONSIDERATIONS

1. Minimum VFR Flight Altitudes. Minimum VFR flight altitudes are prescribed by regulation. Generally speaking, from a VFR standpoint, the navigable airspace includes all airspace 500 feet AGL or greater and that airspace below 500 feet required for:

(a) Takeoff and landing, including the airport traffic pattern.

(b) Flight over open water and sparsely populated areas (an aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure).

(c) Helicopter operations when the operation may be conducted without hazard to persons and property on the surface.

2. VFR Weather Minimums. Proposed or existing structures potentially have the greatest impact in those areas where VFR operations are conducted when ceiling and/or visibility conditions are at or near VFR weather minimums. Any structure that would interfere with a significant volume of low altitude flights by actually excluding or restricting VFR operations in a specific area would have a substantial adverse effect and may be considered a hazard to air navigation.

3. Marking and/or Lighting of Structures. Not every structure penetrating the navigable airspace is considered to be a hazard to air navigation. Some may be marked and/or lighted so pilots can visually observe and avoid the structures.

4. Shielded Structures. A structure may be “shielded” by being located in proximity to other permanent structures or terrain and would not, by

itself, adversely affect aeronautical operations (see paragraph 6–3–13).

5. Height Of Structures. Structures are of concern to pilots during a climb after takeoff, low altitude operations, and when descending to land. Any structure greater than 500 feet AGL, or structures of any height which would affect landing and takeoff operations, requires extensive evaluation to determine the extent of adverse effect on VFR aeronautical operations.

6. Airport Traffic Patterns. The primary concern regarding structures in airport traffic pattern areas is whether they would create a dangerous situation during a critical phase of flight.

7. Class B and C Airspace. Structures that exceed obstruction standards in areas available for VFR flight below the floor of Class B or C airspace areas require careful evaluation. Class B and C airspace areas are designed to provide a more regulated environment for IFR and VFR traffic in and around certain airports. Consequently, the floors of some Class B and C areas compress VFR operations into airspace of limited size and minimum altitude availability.

8. VFR Routes. Pilots operating VFR frequently fly routes that follow rivers, coastlines, mountain passes, valleys, and similar types of natural landmarks or major highways, railroads, powerlines, canals, and other manmade structures. A VFR route may also be comprised of specific radials of a Very High Frequency Omnidirectional Range (VOR). These routes may correspond to an established Federal Airway, direct radials between navigation facilities, or a single radial providing transition to a route predicated on visual aids. While there may be established minimum en route altitudes for segments of these routes and navigation is dependent upon adequate signal reception, a VFR pilot may fly at an altitude below the established minimum altitude in order to maintain visual contact with the ground. The basic consideration in evaluating the effect of obstructions on operations along these routes is whether pilots would be able to visually observe and avoid them during marginal VFR weather conditions. At least 1-mile flight visibility is required for VFR operations beneath the floor of controlled airspace. This means that a surface reference used for VFR low altitude flight must be horizontally visible to pilots for a minimum of 1 mile.

c. EN ROUTE OPERATIONS. The area considered for en route VFR flight begins and ends outside the airport traffic pattern airspace area or Class B, C, and D airspace areas.

1. A structure would have an adverse effect upon VFR air navigation if its height is greater than 499 feet above the surface at its site, and within 2 statute miles of any regularly used VFR route (see FIG 6–3–8).

2. Evaluation of obstructions located within VFR routes must recognize that pilots may, and sometimes do, operate below the floor of controlled airspace during low ceilings and 1-mile flight visibility. When operating in these weather conditions and using pilotage navigation, these flights must remain within 1 mile of the identifiable landmark to maintain visual reference. Even if made more conspicuous by the installation of high intensity white obstruction lights, a structure placed in this location could be a hazard to air navigation because after sighting it, the pilot may not have the opportunity to safely circumnavigate or overfly the structure.

3. VFR DOD TRAINING ROUTES (VR) – Operations on VRs provide DOD aircrews low altitude, high speed navigation and tactics training, and are a basic requirement for combat readiness (see FAA Order 7610.4, Special Operations). Surface structures have their greatest impact on VFR operations when ceiling and visibility conditions are at or near basic VFR minimums. Accordingly, the guidelines for a finding of substantial adverse effect on en route VFR operations are based on consideration for those operations conducted under part 91 that permits flight clear of clouds with 1 mile flight visibility outside controlled airspace. In contrast, flight along VRs can be conducted only when weather conditions equal or exceed 3,000 feet ceiling and 5 miles visibility. A proposed structure's location on a VR is not a basis for determining it to be a hazard to air navigation; however, in recognition of the DOD's requirement to conduct low altitude training, disseminate Part 77 notices and aeronautical study information to DOD representatives. Additionally, attempt to persuade the sponsor to lower or relocate a proposed structure that exceeds obstruction standards and has been identified by the DOD as detrimental to its training requirement.

d. AIRPORT AREAS – Consider the following when determining the effect of structures on VFR operations near airports:

1. Traffic Pattern Airspace – There are many variables that influence the establishment of airport arrival and departure traffic flows. Structures in the traffic pattern airspace may adversely affect air navigation by being a physical obstruction to air navigation or by distracting a pilot's attention during a critical phase of flight. The categories of aircraft using the airport determine airport traffic pattern airspace dimensions.

(a) Traffic Pattern Airspace dimensions (See FIG 6–3–9).

(b) Within Traffic Pattern Airspace – A structure that exceeds a 14 CFR, Part 77 obstruction standard and that exceeds any of the following heights is considered to have an adverse effect and would have a substantial adverse effect if a significant volume of VFR aeronautical operations are affected except as noted in paragraph 6–3–8 d.1.(f) and (g) (see FIG 6–3–10).

(c) The height of the transition surface (other than abeam the runway), the approach slope (up to the height of the horizontal surface), the horizontal surface, and the conical surface (as applied to visual approach runways, Section 77.19).

(d) Beyond the lateral limits of the conical surface and in the climb/descent area – 350 feet above airport elevation or the height of 14 CFR Section 77.17(a)(2), whichever is greater not to exceed 499 feet above ground level (AGL). The climb/descent area begins abeam the runway threshold being used and is the area where the pilot is either descending to land on the runway or climbing to pattern altitude after departure. (The area extending outward from a line perpendicular to the runway at the threshold, see FIG 6–3–11).

(e) Beyond the lateral limits of the conical surface and not in the climb/descent area of any runway – 499 feet above airport elevation (AE) not to exceed 499 feet AGL.

(f) An existing structure (that has been previously studied by the FAA), terrain, or a proposed structure (that would be shielded by existing structures) may not be considered to have a substantial adverse effect. In such instances, the traffic pattern may be adjusted as needed on a case-by-case basis.

(g) Exceptions may be made on a case-by-case basis when the surrounding terrain is significantly higher than the airport elevation, the established traffic pattern altitude is less than 800 feet above airport elevation or “density altitude” is a consideration.

2. Terminal Transition Routes – A structure would have an adverse effect upon VFR air navigation if it:

(a) Exceeds a height of 499 feet above the surface at its site; and

(b) Is located within 2 statute miles of the centerline of any regularly used VFR route (see FIG 6–3–8).

3. VFR Approach Surface Slope Ratios – A structure would have an adverse effect upon VFR air navigation if it penetrates the approach surface slope of any runway. The following slope ratios are applied to the end of the primary surface:

(a) 20:1 for civil visual approaches.

(b) 50:1 for DOD runway approaches.

(c) 8:1 for civil helicopter approaches surfaces.

(d) 10:1 for DOD helicopter approach surfaces.

FIG 6-3-8
VFR ROUTES

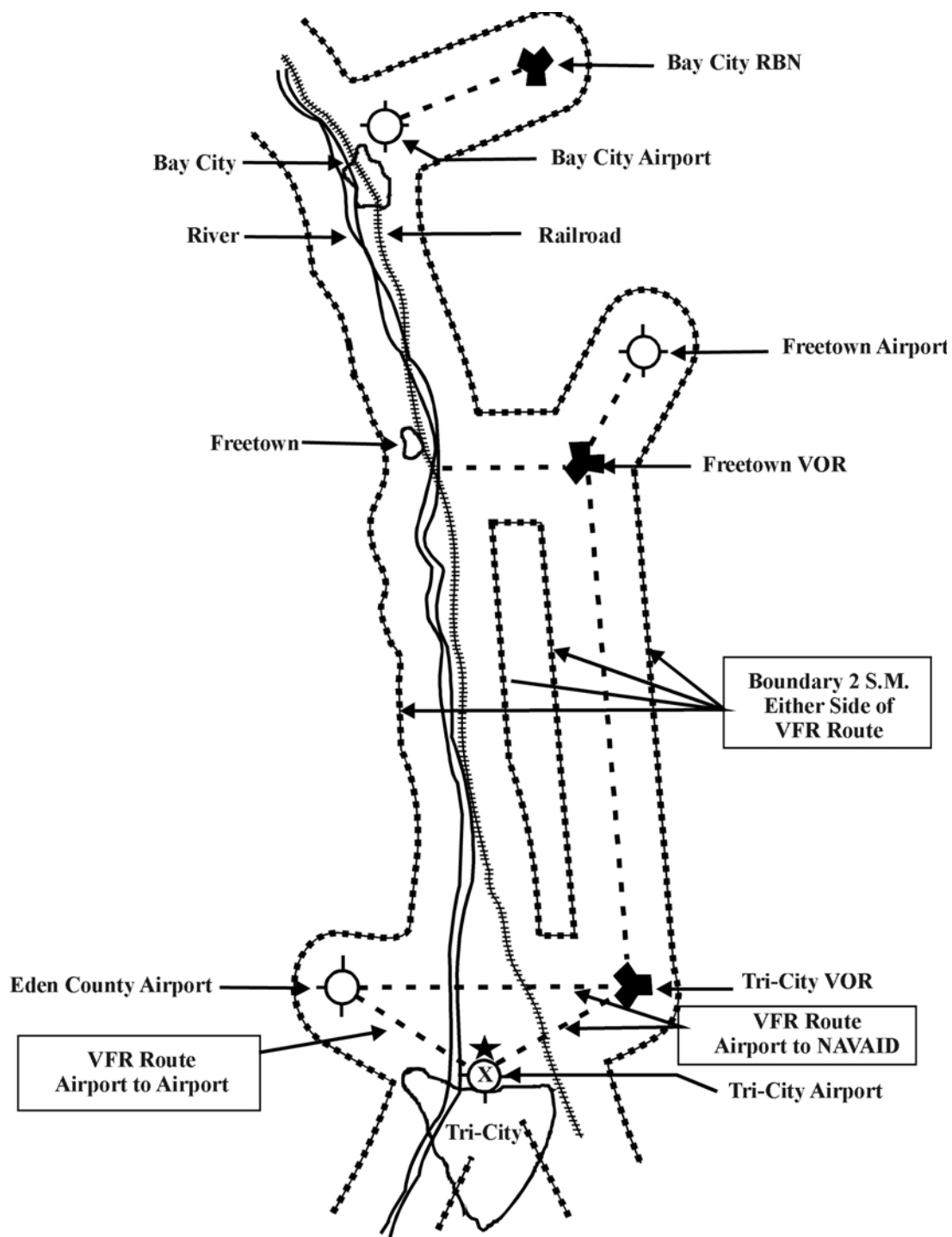
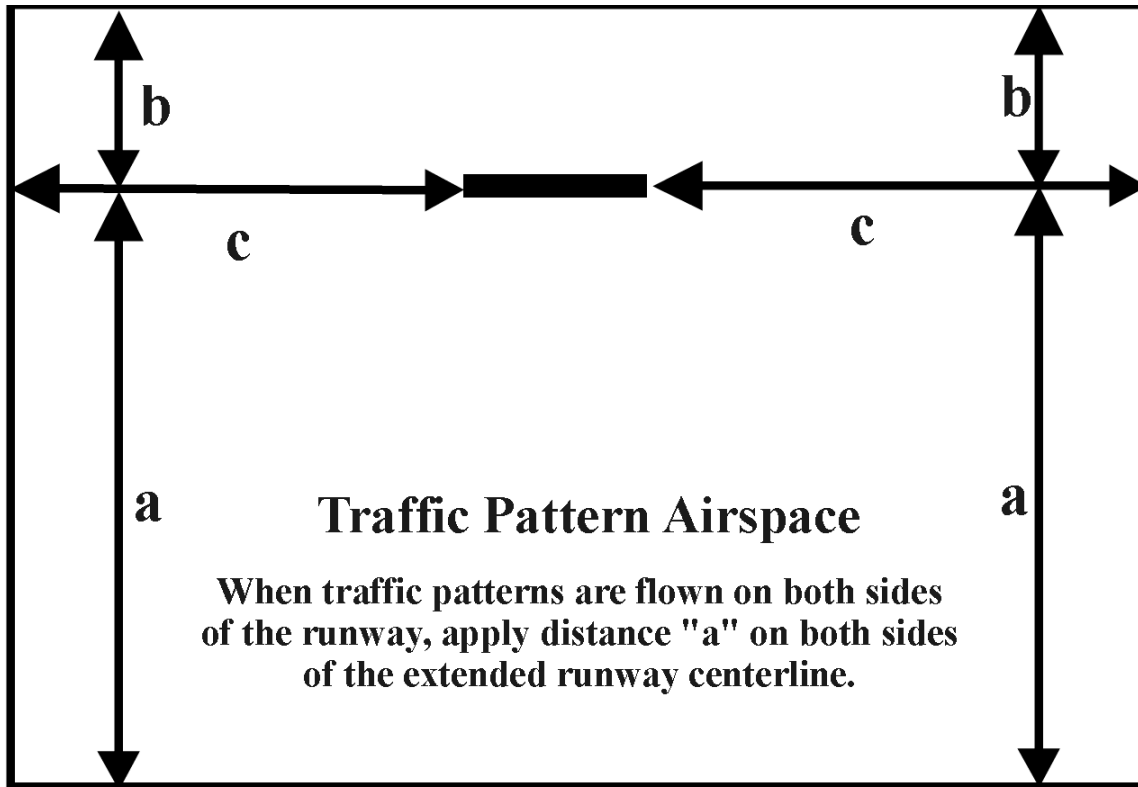


FIG 6-3-9
TRAFFIC PATTERN AIRSPACE



Aircraft Category	Distance (nautical miles)			
	a	b	c	d*
A	1.25	.25	1.25	.375
B	1.5	.25	1.5	.5
C	2.25	.5	2.25	.875
D	4.0	.5	3.0	1.0

*Increase distance "C" by adding distance specified in "d" for each aircraft over four (of the same category) anticipated to be operating in the traffic pattern at the same time.

FIG 6-3-10
TRAFFIC PATTERN AIRSPACE ADVERSE EFFECT

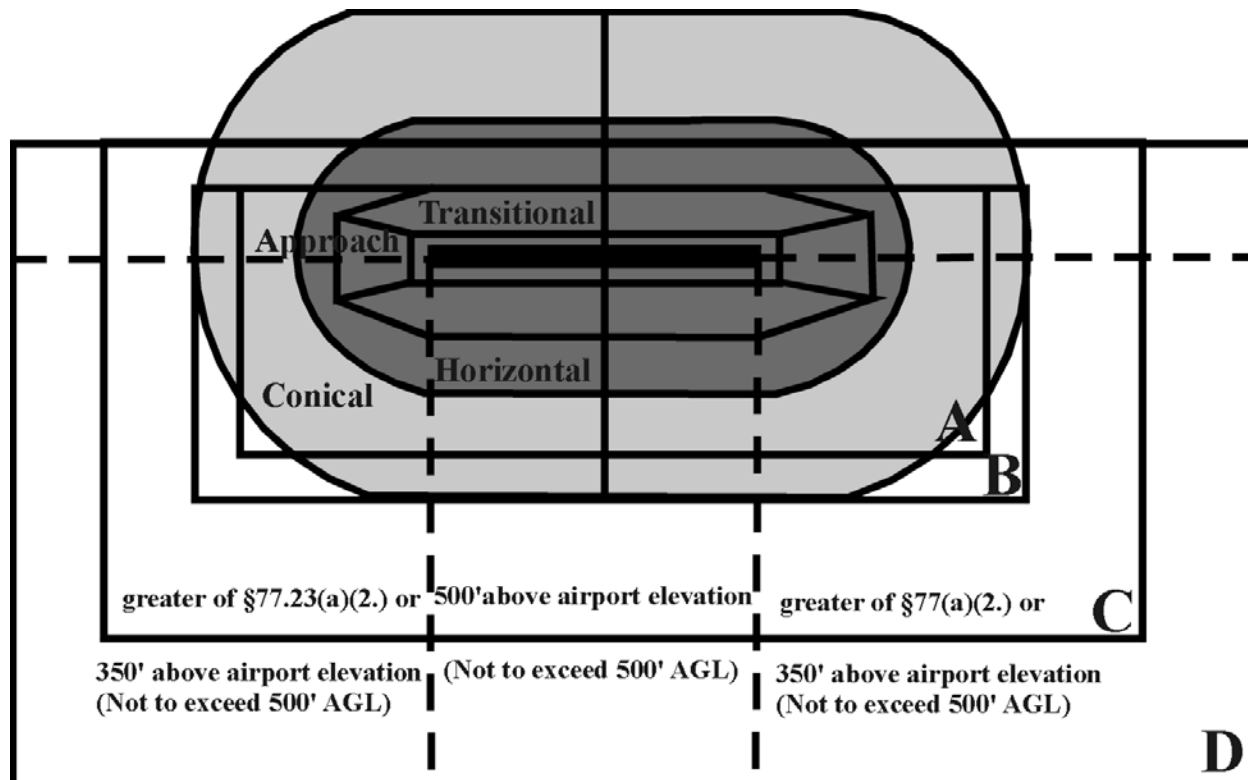
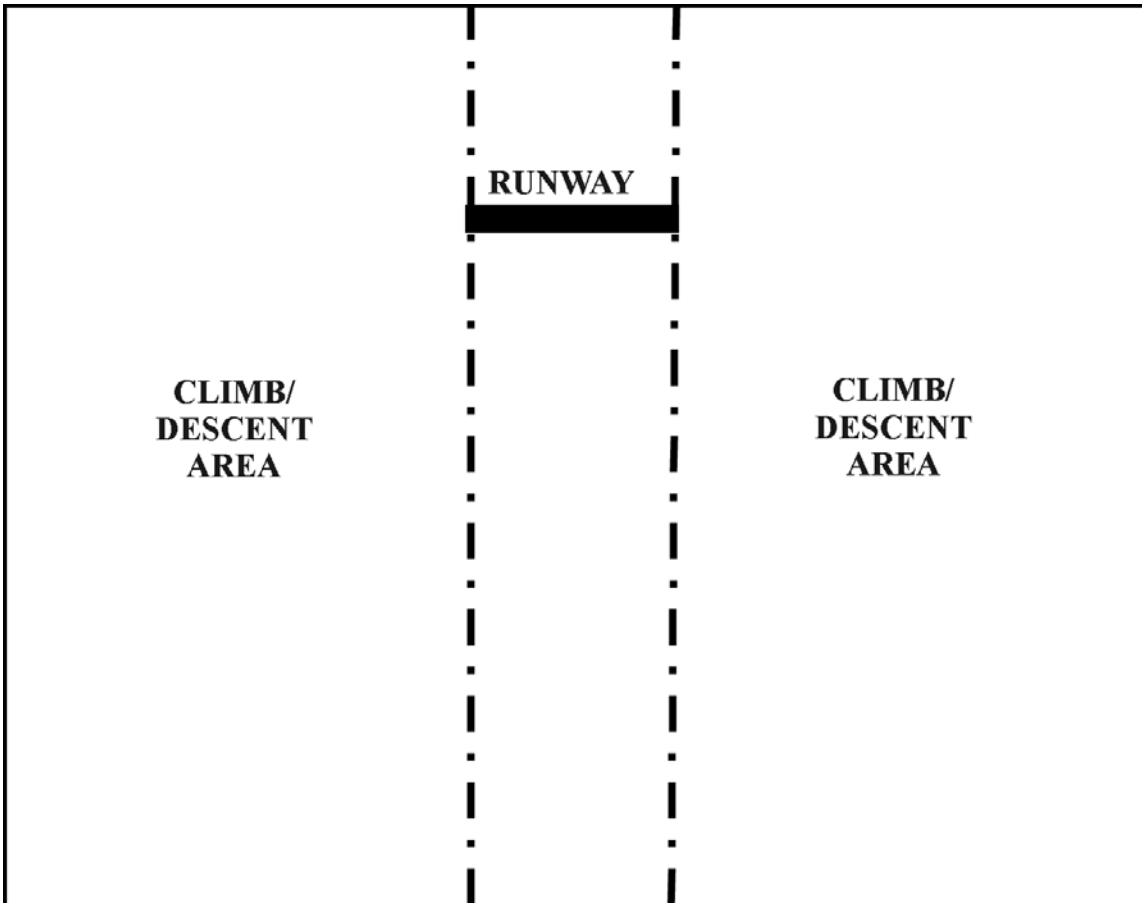


FIG 6-3-11
TRAFFIC PATTERN AIRSPACE CLIMB/DESCENT AREAS



e. HELICOPTERS – The special maneuvering characteristics of helicopters are recognized in Sections 91.119 and 91.155, provided operations are conducted without hazard to persons or property on the ground. Helicopter pilots must also operate at a speed that will allow them to see and avoid obstructions. Consequently, proposed or existing structures are not considered factors in determining adverse effect upon helicopter VFR operations except as follows:

- 1. En route.** When the Administrator prescribes routes and altitudes for helicopters, the exemptions to part 91 for helicopters do not apply. Thus, any structure would have an adverse effect if it penetrates an imaginary surface 300 feet below an established helicopter minimum flight altitude and is located within 250 feet either side of the established route's centerline.

- 2. Heliport Landing/Takeoff Area.** Any structure would have an adverse effect if it would exceed any of the heliport imaginary surfaces. Although helicopter approach–departure paths may curve, the length of the approach–departure surface remains fixed.

f. AGRICULTURAL AND INSPECTION AIRCRAFT OPERATIONS – Rules that apply to agricultural dispensing operations, as prescribed in part 137, allow deviation from part 91 altitude restrictions. It is the pilot's responsibility to avoid obstacles because the agricultural operations must be conducted without creating a hazard to persons or property on the surface. Similar operations include pipeline, power line, and military low–level route inspections. Consequently, these operations are not considered in reaching a determination of substantial adverse effect.

NOTE–

Before and after the dispensing is completed, the pilot is required to operate under the part 91 minimum altitudes.

g. OPERATIONS UNDER WAIVER OR EXEMPTION TO CFR – Waivers and/or exemptions to CFR operating rules include provisions to ensure achievement of a level of safety equivalent to that which would be present when complying with the regulation waived or exempted. Additionally, waivers and exemptions do not relieve pilots of their responsibility to conduct operations without creating a hazard to persons and property on the surface. Accordingly, a determination of hazard to air

navigation must not be based upon a structure's effect on aeronautical operations conducted under a waiver or exemption to CFR operating rules.

6–3–9. EVALUATING EFFECT ON IFR OPERATIONS

a. PURPOSE. This section provides general guidelines for determining the effect of structures, whether proposed or existing, upon IFR aeronautical operations.

b. STANDARDS. Obstruction standards are used to identify potential adverse effects and are not the basis for a determination. The criteria used in determining the extent of adverse effect are those established by the FAA to satisfy operational, procedural, and electromagnetic requirements. These criteria are contained in regulations, advisory circulars, and orders (for example, the 8260 Order series and FAA Order 7110.65). Obstruction evaluation personnel must apply these criteria in evaluating the extent of adverse effect to determine if the structure being studied would actually have a substantial adverse effect and would constitute a hazard to air navigation.

c. IFR MINIMUM FLIGHT ALTITUDES. Technical Operations Aviation System Standards is the principal FAA element responsible for establishing instrument procedures and minimum altitudes for IFR operations. FPT personnel must evaluate the effect of proposed structures on IFR aeronautical operations as outlined in Order 8260.19, Flight Procedures and Airspace.

d. EN ROUTE IFR OPERATIONS

- 1. Minimum En Route Altitudes (MEA).** MEAs are established for each segment of an airway or an approved route based upon obstacle clearance, navigational signal reception, and communications. The MEA assures obstruction clearance and acceptable navigational signal coverage over the entire airway or route segment flown. Any structure that will require an MEA to be raised has an adverse effect. Careful analysis by the appropriate Flight Procedures Team and air traffic personnel is necessary to determine if there would be a substantial adverse effect on the navigable airspace. Generally, the loss of a cardinal altitude is considered a substantial adverse effect. However, the effect may not be substantial if the aeronautical study discloses

that the affected MEA is not normally flown by aircraft, nor used for air traffic control purposes.

2. Minimum Obstruction Clearance Altitudes (MOCA). MOCAs assure obstacle clearance over the entire route segment to which they apply and assure navigational signal coverage within 22 NM of the associated VOR navigational facility. For that portion of the route segment beyond 22 NM from the VOR, where the MOCA is lower than the MEA and there are no plans to lower the MEA to the MOCA, a structure that affects only the MOCA would not be considered to have substantial adverse effect. Other situations require study as ATC may assign altitudes down to the MOCA under certain conditions.

3. Minimum IFR Altitudes (MIA). These altitudes are established in accordance with Order 7210.37, En Route Minimum IFR Altitude Sector Charts, to provide the controller with minimum IFR altitude information for off-airway operations. MIAs provide the minimum obstacle clearance and are established without respect to flight-checked radar or normal radar coverage. Any structure that would cause an increase in a MIA is an obstruction, and further study is required to determine the extent of adverse effect. Radar coverage adequate to vector around such a structure is not, of itself, sufficient to mitigate a finding of substantial adverse effect that would otherwise be the basis for a determination of hazard to air navigation.

4. IFR Military Training Routes (IR's) – Operations on IR's provide pilots with training for low altitude navigation and tactics (see FAA Order 7610.4, Special Operations). Flight along these routes can be conducted below the minimum IFR altitude specified in part 91, and the military conducts operational flight evaluations of each route to ensure compatibility with their obstructions clearance requirements. A proposed structure's location on an IR is not a basis for determining it to be a hazard to air navigation; however, in recognition of the military's requirement to conduct low altitude training, disseminate Part 77 notices and aeronautical study information to military representatives. Additionally, attempt to persuade the sponsor to lower, or relocate proposed structures that exceed obstruction standards and have been identified by the military as detrimental to their training requirement.

5. Radar Bomb Sites (RBS) – These sites are a vital link in the low level training network used by the

U.S. Air Force to evaluate bomber crew proficiency. They provide accurate radar records for aircraft flying at low altitudes attacking simulated targets along the RBS scoring line. An obstruction located within the flights' RBS boundaries may have a substantial adverse effect and a serious operational impact on military training capability.

e. TERMINAL AREA IFR OPERATIONS. The obstruction standards contained in part 77 are also used to identify obstructions within terminal obstacle clearance areas. Any structure identified as an obstruction is considered to have an adverse effect; however, there is no clear-cut formula to determine what extent of adverse effect is considered substantial. Instrument approach and departure procedures are established in accordance with published obstacle clearance guidelines and criteria. However, there are segments of instrument approach procedures where the minimum altitudes may be revised without substantially effecting landing minimums. Thus, the determination must represent a decision based on the best facts that can be obtained during the aeronautical study.

1. Instrument Approach Procedures (IAP)/Special SIAP. Flight Procedures Team personnel are responsible for evaluating the effect of structures upon any segment of an IAP/Special SIAP, any proposed IAP/Special SIAP, or any departure restriction. However, all FAA personnel involved in the obstruction evaluation process should be familiar with all aspects of the terminal area IFR operations being considered. If Flight Procedures Team personnel determine that a structure will affect instrument flight procedures, their evaluation should include those procedural adjustments that can be made without adversely affecting IFR operations. When the study discloses that procedural adjustments to reduce or mitigate any adverse effect cannot be accomplished, then the comments to air traffic must identify the significance of this effect on procedures and aeronautical operations.

NOTE–

This paragraph applies to any IAP and Special SIAP at public-use and private-use airports.

2. Minimum Vectoring Altitudes (MVA). These altitudes are based upon obstruction clearance requirements only (see Order 8260.19). The area considered for obstacle clearance is the normal operational use of the radar without regard to the flight-checked radar coverage. It is the responsibility

of individual controllers to determine that a target return is adequate for radar control purposes. MVAs are developed by terminal facilities, approved by the Terminal Procedures and Charting Group and published for controllers on MVA Sector Charts. Any structure that would cause an increase in an MVA is an obstruction and a study is required to determine the extent of adverse effect. Radar coverage adequate to vector around such a structure is not, of itself, sufficient to mitigate a finding of substantial adverse effect that would otherwise be the basis for a determination of hazard to air navigation.

3. Military Airports. With the exception of the U.S. Army, the appropriate military commands establish and approve terminal instrument procedures for airports under their respective jurisdictions. Consequently, the OEG must ensure that the military organizations are provided the opportunity to evaluate a structure that may affect their operations. While the military has the responsibility for determining the effect of a structure, it is expected that the FPT will assist air traffic in reconciling differences in the military findings.

4. Departure Procedures. TERPS, Chapter 12, Civil Utilization of Area Navigation (RNAV) Departure Procedures, contains criteria for the development of IFR departure procedures. An obstacle that penetrates the 40:1 departure slope is considered to be an obstruction to air navigation. Further study is required to determine if adverse effect exists. Any proposed obstacle that penetrates the 40:1 departure slope, originating at the departure end of runway (DER) by up to 35 feet will be circularized. If an obstacle penetrates the 40:1 departure slope by more than 35 feet, it is presumed to be a hazard, and a Notice of Presumed Hazard will be issued, and processed accordingly. Analysis by the Terminal Procedures and Charting Group and air traffic personnel is necessary to determine if there would be a substantial adverse effect on the navigable airspace.

5. Minimum Safe Altitudes (MSA). A MSA is the minimum obstacle clearance altitude for emergency use within a specified distance from the navigation facility upon which a procedure is predicated. These are either Minimum Sector Altitudes, established for all procedures within a

25-mile radius of the navigational facility (may be increased to 30 miles under certain conditions), or Emergency Safe Altitudes, established within a 100-mile radius of the navigation facility and normally used only in military procedures at the option of the approval authority. These altitudes are designed for emergency use only and are not routinely used by pilots or by air traffic control. Consequently, they are not considered a factor in determining the extent of adverse effect, used as the basis of a determination, or addressed in the public notice of an aeronautical study.

f. CONSIDERING ACCURACY. Experience has shown that submissions often contain elevation and/or location errors. For this reason, the Flight Procedures Team uses vertical and horizontal accuracy adjustments, as reflected below, to determine the effect on IFR operations.

1. Accuracy Application – Current directives require the FPT to apply accuracy standards to obstacles when evaluating effects on instrument procedures. These accuracy standards typically require an adjustment of 50 feet vertically and 250 feet horizontally to be applied in the most critical direction. Normally, these adjustments are applied to those structures that may become the controlling obstructions and are applicable until their elevation and location are verified by survey.

2. Certified Accuracy – The FPT must notify air traffic whenever certified accuracy is needed to determine if the structure will have an adverse effect. Air traffic must then contact the sponsor to request a surveyed verification of the elevation and location. The acceptable accuracy verification method must be provided and certified by a licensed engineer or surveyor. The survey must include the plus or minus accuracy required by the FPT, as well as the signature of the engineer/surveyor and the appropriate seal.

3. Determination – A final determination based on improved accuracy must not be issued until after the certified survey is received and evaluated.

4. Survey Information Distribution – When the certified survey is received, Air Traffic personnel must ensure that the survey information is provided to FPT personnel and must send to AeroNav a copy of the survey attached to the FAA Form 7460-2, Notice of Actual Construction or Alteration.

6-3-10. EVALUATING EFFECT ON AIR NAVIGATION AND COMMUNICATION FACILITIES

a. The FAA is authorized to establish, operate, and maintain air navigation and communications facilities and to protect such facilities from interference. During evaluation of structures, factors that may adversely affect any portion or component of the NAS must be considered. Since an electromagnetic interference potential may create adverse effects as serious as those caused by a physical penetration of the airspace by a structure, those effects must be identified and stated. Proposals will be handled, when appropriate, directly with FCC through Spectrum Assignment and Engineering Services.

b. Technical operations services personnel must evaluate notices to determine if the structure will affect the performance of existing or proposed NAS facilities. The study must also include any plans for future facilities, proposed airports, or improvements to existing airports.

c. The physical presence of a structure and/or the electromagnetic signals emanating or reflecting there from may have a substantial adverse effect on the availability, or quality of navigational and communications signals, or on air traffic services needed for the safe operation of aircraft. The following general guidelines are provided to assist in determining the anticipated interference.

1. Instrument Landing System (ILS) – Transmitting antennas are potential sources of electromagnetic interference that may effect the operation of aircraft using an ILS facility. The antenna height, radiation pattern, operating frequency, effective radiated power (ERP), and its proximity to the runway centerline are all factors contributing to the possibility of interference. Normally, any structure supporting a transmitting antenna within the established localizer and/or glide-slope service volume area must be studied carefully. However, extremes in structure height, ERP, frequency, and/or antenna radiation pattern may require careful study of structures up to 30 NM from the ILS frequency's protected service volume area.

(a) ILS Localizer. Large mass structures adjacent to the localizer course and/or antenna array are potential sources of reflections and/or re-radiation that may affect facility operation. The

shape and intensity of such reflections and/or re-radiation depends upon the size of the reflecting surface and distance from the localizer antenna. The angle of incidence reflection in the azimuth plane generally follows the rules of basic optical reflection. Normally, in order to affect the course, the reflections must come from structures that lie in or near the on-course signal. Large mass structures of any type, including metallic fences or powerlines, within plus/minus 15 degrees of extended centerline up to 1 NM from the approach end of the runway and any obstruction within 500 feet of the localizer antenna array must be studied carefully. (Refer to FAA Order 6750.16, Siting Criteria for Instrument Landing Systems).

(b) ILS Glide Slope. Vertical surfaces within approximately 1,000 feet of the runway centerline and located up to 3,000 feet forward of the glide slope antenna can cause harmful reflections. Most interference to the glide slope are caused by discontinuities in the ground surface, described approximately as a rectangular area 1,000 feet wide by 5,000 feet long, extending forward from the glide slope antenna and centered at about the runway centerline. Discontinuities are usually in the form of rough terrain or buildings (refer to FAA Order 6750.16, Siting Criteria for Instrument Landing Systems).

2. Microwave Landing System (MLS). The guidelines stated for ILS systems above also apply to MLS installations. The established MLS service volume defines the area of concern.

3. Very High Frequency Omni-Directional Radio Range and Tactical Air Navigation Aid (VOR/TACAN). Usually, there should be no reflecting structures or heavy vegetation (trees, brush, etc.) within a 1,000 foot radius of the VOR or the TACAN antenna. Interference may occur from large structures or powerlines up to 2 NM from the antenna. Wind turbines are a special case, in that they may cause interference up to 8 NM from the antenna. (Refer to FAA Order 6820.10, VOR, VOR/DME, and TACAN Siting Criteria).

4. Air Route Surveillance Radar/Airport Surveillance Radar (ARSR/ASR). Normally, there should be no reflecting structures within a 1,500-foot radius of the radar antenna. In addition, large reflective structures up to 3 NM from the antenna can cause interference unless they are in the "shadow" of

topographic features. Wind turbines are a special case, in that they may cause interference up to the limits of the radar line of site.

5. Air Traffic Control Radar Beacon (ATCRB). The effects encountered due to reflections of the secondary radar main lobe are more serious than those associated with primary radar. Therefore, it is necessary to ensure that no large vertical reflecting surface penetrates a 1,500-foot radius horizontal plane located 25 feet below the antenna platform. In addition, interference may occur from large structures up to 12 miles away from the antenna. This distance will depend on the area of the reflecting surface, the reflection coefficient of the surface, and its elevation with respect to the interrogator antenna. (Refer to FAA Order 6310.6, Primary/Secondary Terminal Radar Siting Handbook).

6. Directional Finder (DF). The DF antenna site should be free of structures that will obstruct line-of-sight with aircraft at low altitudes. The vicinity within 300 feet of the antenna should be free of metallic structures which can act as re-radiators.

7. Communication Facilities. Minimum desirable distances to prevent interference problems between communication facilities and other construction are:

(a) 1,000 feet from power transmission lines (other than those serving the facility) and other radio or radar facilities.

(b) 300 feet from areas of high vehicle activity such as highways, busy roads, and large parking areas.

(c) One (1) NM from commercial broadcasting stations (e.g., FM, TV).

8. Approach Lighting System. No structure, except the localizer antenna, the localizer far field monitor antenna, or the marker antenna must protrude above the approach light plane. For approach light plane clearance purposes, all roads, highways, vehicle parking areas, and railroads must be considered as vertical solid structures. The clearance required above interstate highways is 17 feet; above railroads, 23 feet; and for all other public roads, highways, and vehicle parking areas, 15 feet. The clearance required for a private road is 10 feet or the highest mobile structure that would normally use

the road, which would exceed 10 feet. The clearance for roads and highways must be measured from the crown of the road; the clearance for railroads must be measured from the top of the rails. For vehicle parking areas, clearance must be measured from the average grade in the vicinity of the highest point. Relative to airport service roads substantial adverse effect can be eliminated if all vehicular traffic is controlled or managed by the air traffic control facility. A clear line-of-sight is required to all lights in the system from any point on a surface, one-half degree below the aircraft descent path and extending 250 feet each side of the runway centerline, up to 1,600 feet in advance of the outermost light in the system. The effect of parked or taxiing aircraft must also be considered when evaluating line-of-sight for approach lighting systems.

9. Visual Approach Slope Indicator (VASI)/Precision Approach Path Indicator (PAPI). No structures or obstructions must be placed within the clearance zone for the particular site involved or the projected visual glide path.

NOTE—

VASI and PAPA now fall under the heading of VGSI.

10. Runway End Identifier Lights (REIL). No structures or obstructions must be placed within the established clearance zone.

d. Factors that modify the evaluation criteria guidelines require consideration. Some facility signal areas are more susceptible to interference than others. The operational status of some signals may already be marginal because of existing interference from other structures. In addition, the following characteristics of structures must be considered:

1. The higher the structure's height is in relation to the antenna, the greater the chance of interfering reflections. Any structure subtending a vertical angle greater than one degree from the facility is usually cause for concern. Tall structures, such as radio towers and grain elevators, can interfere from distances greater than those listed in the general criteria.

2. The type of construction material on the reflecting surface of the structure is a factor, with nonmetallic surfaces being less troublesome than metallic or metallic impregnated glass.

3. Aircraft hangars with large doors can be a special problem because the reflecting surface of the

hangar varies appreciably with changes in the position of the doors.

4. Interference is usually caused by mirror reflections from surfaces on the structure. Orientation of the structure therefore plays an important part in the extent of the interference. Reflections of the largest amplitude will come from signals striking a surface perpendicular to the signals. Signals striking a surface at a shallow angle will have a smaller amplitude.

e. Air traffic personnel must request technical operations services personnel to assist them in discussions with sponsors to explore alternatives to resolve the prospective adverse effects to facilities. These may involve design revisions, relocation, or reorientation depending on the character of the construction and facility involved.

f. Attempt to resolve electromagnetic interference (EMI) before issuing a hazard determination. Notify the sponsor by letter (automated DPH letter) that the structure may create harmful EMI and include in the letter the formula and values that were applied, the specific adverse effects expected, and an offer to consider alternatives. Provide the sponsor, as well as the FAA, ample time to exhaust all available avenues for positive resolution. The intent of this process is to allow the sponsor adequate time to consider the problems and the alternatives before a decision is rendered by the issuance of the FAA determination. Follow these guidelines in all situations where harmful EMI is projected by the study.

6-3-11. EVALUATING PLANNED OR FUTURE AIRPORT DEVELOPMENT PROGRAMS

The national system of airports consists of public, civil, and joint-use airport facilities considered necessary to adequately meet the anticipated needs of civil aeronautics. Airport Planning and Programming Offices are the most accurate sources of up-to-date information on airport development plans. Consequently, Airports personnel are expected to extensively review structures in reference to the safe and orderly development of airport facilities, including what development will realistically be accomplished within a reasonable time. Areas of consideration in accomplishing this responsibility are:

a. Future Development of Existing Airports. A detailed review in this area requires looking at current planned airport projects, national airport plan data, and land-use planning studies in the vicinity of the structure. The results of the study forwarded to air traffic must include appropriate comments regarding the extent of Federal aid, sponsor airport investments, the airport owner's obligations in existing grant-in-aid agreements, and anticipated aeronautical activity at the airport and in the general area. If a structure would adversely impact an airport's efficiency, utility, or capacity, the responsible Airports Office should document this impact in its evaluation. Comments should include recommended new location(s) for the structure as appropriate.

b. New Airport Development. When a structure requiring notice under Part 77 and any new airport development are both in the same vicinity, Airports personnel must study the interrelationship of the structure and the airport. Additionally, supplemental information on the proposed airport site must be furnished to the OEG. If a substantial adverse effect is anticipated, Airports personnel must provide detailed comments and specific recommendations for mitigating the adverse effects.

6-3-12. EVALUATING TEMPORARY CONSTRUCTION

a. Temporary Construction Equipment. Construction of structures normally requires use of temporary construction equipment that is of a greater height than the proposed structure. Appropriate action is necessary to ensure that the temporary construction equipment does not present a hazard to air navigation. It is not possible to set forth criteria applicable to every situation; however, the following action examples may help to minimize potential problems:

1. If use of the temporary construction equipment is on an airport, it may be necessary to negotiate with airport managers/owners to close a runway, taxiway, temporarily move a runway threshold, or take other similar action.

2. Negotiate with equipment operators to raise and lower cranes, derricks, or other construction equipment when weather conditions go below predetermined minimums as necessary for air traffic operations or as appropriate for the airport runways in use.

3. Control the movement of construction vehicle traffic on airports.

4. Adjust minimum IFR altitudes or instrument procedures as necessary to accommodate the construction equipment if such action will not have serious adverse effects on aeronautical operations.

5. Request that the temporary construction equipment be properly marked and/or lighted if needed.

b. Temporary Structures – OE notices for temporary structures are processed in the same manner as a permanent structure, but require special consideration in determining the extent of adverse effect. This is especially true of structures such as cranes and derricks that may only be at a particular site for a short time period. As a general policy, it is considered in the public interest to make whatever adjustments necessary to accommodate the temporary structure of 30 days or less if there is no substantial adverse affect on aeronautical operations or procedures. However, this policy does not apply if the aeronautical study discloses that the structure would be a hazard to aviation. Reasonable adjustments in aeronautical operations and modifications to the temporary structure should be given equal consideration.

6-3-13. CONSIDERING SHIELDING

Shielding as described below should not be confused with notice criteria as stated in Section 77.9(e).

a. Consideration. Shielding is one of many factors that must be considered in determining the physical effect a structure may have upon aeronautical operations and procedures. Good judgment, in addition to the circumstances of location and flight activity, will influence how this factor is considered in determining whether proposed or existing structures would be physically shielded.

b. Principle. The basic principle in applying the shielding guidelines is whether the location and height of the structures are such that aircraft, when operating with due regard for the shielding structure, would not collide with that structure.

c. Limitations. Application of the shielding effect is limited to:

1. The physical protection provided by existing natural terrain, topographic features, or surface structures of equal or greater height than the structure under study; and

2. The structure(s) providing the shielding protection is/are of a permanent nature and there are no plans on file with the FAA for the removal or alteration of the structure(s).

d. Guidelines. Any proposed construction of or alteration to an existing structure is normally considered to be physically shielded by one or more existing permanent structure(s), natural terrain, or topographic feature(s) of equal or greater height if the structure under consideration is located:

1. Not more than 500 feet horizontal distance from the shielding structure(s) and in the congested area of a city, town, or settlement, provided the shielded structure is not located closer than the shielding structures to any heliport or airport located within 5 miles of the structure(s).

2. Such that there would be at least one such shielding structure situated on at least three sides of the shielded structure at a horizontal distance of not more than 500 feet.

3. Within the lateral dimensions of any runway approach surface but would not exceed an overall height above the established airport elevation greater than that of the outer extremity of the approach surface, and located within, but would not penetrate, the shadow plane(s) of the shielding structure(s).

e. OEG must coordinate with FPT before applying shielding criteria for precision approach surface penetrations.

NOTE–

See FIG 6-3-7 and FIG 6-3-12.

6-3-14. CONSIDERING SHADOW PLANE

The term “shadow plane” means a surface originating at a horizontal line passing through the top of the shielding structure at right angles to a straight line extending from the top of the shielding structure to the end of the runway. The shadow plane has a width equal to the projection of the shielding structure’s width onto a plane normal to the line extending from the top and center of the shielding structure to the midpoint of the runway end. The shadow plane extends horizontally outward away from the

shielding structure until it intersects or reaches the end of one of the imaginary approach area surfaces; see FIG 6-3-13, FIG 6-3-14, and FIG 6-3-15.

6-3-15. RECOMMENDING MARKING AND LIGHTING OF STRUCTURES

a. STANDARDS. FAA standards, procedures, and types of equipment specified for marking and lighting structures are presented in AC 70/7460-1, Obstruction Marking and Lighting. These standards provide a uniform means to indicate the presence of structures and are the basis for recommending marking and lighting to the public. These standards are the minimum acceptable level of conspicuity to warn pilots of the presence of structures. They must also apply when Federal funds are to be expended for the marking and lighting of structures.

b. AERONAUTICAL STUDY. All aeronautical studies must include an evaluation to determine whether obstruction marking and/or lighting are necessary and to what extent. The entire structure or complex, including closely surrounding terrain and other structures, must be considered in recommending marking and lighting. A subsequent study may indicate a need to change an earlier determination by recommending marking and/or lighting when such recommendation was not made in the original study or, in some cases, after a determination was issued.

1. Proposed Structures. A change in runway length or alignment, a new airport development project, a change in aeronautical procedures, or other similar reasons may be cause for additional study of proposed structures to determine whether marking and/or lighting are now appropriate even when not recommended in the original study.

2. Existing Structures. A marking and/or lighting recommendation may be made at any time. In making the recommendation consider changes that have occurred in the vicinity of the structure since the initial determination was made and include such factors as increased aircraft activity, the closing of an airport, changes in IFR and VFR routes, and shielding by taller structures.

c. RECOMMENDATIONS. Recommend the marking and/or lighting standard most appropriate for the height and location of any temporary or permanent structure that:

1. Exceeds 200 feet in overall height above ground level at its site or exceeds any obstruction standard contained in Part 77, Subpart C, unless an aeronautical study shows the absence of such marking and/or lighting will not impair aviation safety.

2. Is not more than 200 feet AGL, or is not identified as an obstruction under the standards of Part 77, Subpart C, but may indicate by its particular location a need to be marked or lighted to promote aviation safety.

d. PARTIAL MARKING AND/OR LIGHTING. Omitting marking and/or lighting on the structure's bottom section; for example, the lowest 200 feet of a tall structure should be discouraged unless that part of the structure is shielded. Marking and lighting standards are based on a total system configuration and are only effective when used as intended. Therefore, the structure and its location must be given careful consideration before recommending partial marking and/or lighting.

e. OMISSION/DELETION OF MARKING AND/OR LIGHTING. When recommending that marking and/or lighting be omitted because the structure is sufficiently conspicuous by its shape, size, and/or color, include a judgment that the structure would not blend into any physical or atmospheric background that may reasonably be expected in the vicinity.

f. EXCESSIVE MARKING AND/OR LIGHTING. Recommend specific advisory circular chapters, paragraphs, and, when appropriate, specific intensities that address the minimum marking and/or lighting standards for safety. Recommendation of specific chapters allow for the use of those chapters only, although they may contain references to other chapters. If the sponsor insists on or the FAA finds that high intensity white lights would not be objectionable, indicate in the determination that the FAA does not object to increased conspicuity provided the lighting is in accordance with guidelines of AC 70/7460-1, Obstruction Marking and Lighting.

g. VOLUNTARY MARKING AND/OR LIGHTING. When it is determined not necessary for aviation safety, marking and/or lighting may be accomplished on a voluntary basis. However, marking and/or lighting should not be a condition of the determination, but instead, it must be recommen-

ded that, if voluntary, marking and/or lighting be installed and maintained in accordance with AC 70/7460-1.

h. HIGH AND MEDIUM INTENSITY WHITE OBSTRUCTION LIGHTING SYSTEMS:

1. High intensity lighting systems should not be recommended for structures less than 500 feet above ground level except when an aeronautical study shows otherwise. This does not apply to catenary support structures.

2. Use caution in recommending the use of high or medium intensity white obstruction lighting systems, especially in a populated area. Aircraft operations can be adversely affected where strobe-lighted structures are located in an area of limited visual cues. These situations can contribute to spatial disorientation when pilots are maneuvering in minimum visibility conditions. Marine or surface vessels and other vehicles, especially on nearby elevated roadways, could also experience operational difficulties from strobe lights. External shielding may minimize adverse effects. Examples are:

(a) At locations within the airport/heliport environment in a sparsely lighted rural setting.

(b) At an offshore installation.

3. Dual lighting systems should be considered when a structure is located in or near residential areas, especially in hilly terrain where some houses are higher than the base of the structure.

i. LIGHTED SPHERICAL MARKERS. Lighted spherical markers are available for increased night conspicuity of high-voltage (69kv or greater) transmission-line catenary wires. These markers should be recommended for increased night conspicuity for such wires when located near airports, heliports, across rivers, canyons, lakes, etc. Consider the following when recommending lighted spherical markers: aeronautical activity, nighttime operations, low level operations, local weather conditions, height of wires, length of span, etc. If the support structures are to be lighted, also consider lighting the catenary wires. Installation, size, color, and pattern guidelines can be found in Advisory Circular 70/7460-1, Obstruction Marking and Lighting.

j. DEVIATIONS AND MODIFICATION TO MARKING AND/OR LIGHTING. When the sponsor or owner of a structure requests permission to deviate from or modify the recommended marking and/or lighting, an appropriate aeronautical study should be made to determine whether the deviation/modification is acceptable, and/or whether the recommended marking and/or lighting should be retained.

1. A deviation refers to a change from the standard patterns, intensities, flashing rates, etc. A marking and lighting deviation is considered to be marking patterns or colors and lighting patterns, intensities, flashing rates, or colors other than those specified in AC 70/7460-1.

(a) Requests for deviations must be forwarded to Airspace Regulations and ATC Procedures Group only after an aeronautical study has been conducted on the proposal. The results of the study and the regional recommendation must be submitted with the request.

(b) Deviations require approval by the Director of Mission Support, Airspace Services. Airspace Regulation and ATC Procedures Group must effect all coordination necessary for issuing the decision to approve or disapprove. The approval or disapproval decision must be forwarded to the region/service area office for response to the sponsor. Examples of deviations are contained in AC 70/7460-1.

2. The OEG may approve a request for a modified application of marking and/or lighting. Examples of modified applications may be found in AC 70/7460-1. A modified application of marking and lighting refers to the amount of standard marking and/or lighting such as:

(a) Placing the standard marking and/or lighting on only a portion of a structure.

(b) Adding marking and/or lighting in addition to the standard marking and lighting to improve the conspicuity of the structure;

(c) Reducing the amount of standard marking and/or lighting to the extent of eliminating one or the other as may be considered appropriate.

(d) Adjusting the standard spacing of recommended intermediate light levels for ease of

installation and maintenance as considered appropriate.

6-3-16. NEGOTIATIONS

Negotiations must be attempted with the sponsor to reduce the structure's height so that it does not exceed obstruction standards, mitigate any adverse effects on aeronautical operations, air navigation and/or communication facilities, or eliminate substantial adverse effect. If feasible, recommend collocation of the structure with other structures of equal or greater heights. Include in the aeronautical study file and determination a record of all the negotiations attempted and the results. If negotiations result in the withdrawal of the OE notice, the obstruction evaluation study may be terminated. Otherwise, the obstruction evaluation must be continued to its conclusion.

6-3-17. CIRCULARIZATION

a. Circularizing a public notice allows the FAA to solicit information that may assist in determining what effect, if any, the proposed structure would have to the navigable airspace. The OEG determines when it is necessary to distribute a public notice.

1. If a structure first exceeds obstruction standards, then a public notice should be circularized if:

- (a) An airport is affected;
- (b) There is possible VFR effect; or
- (c) There is a change in aeronautical operations or procedures.

2. Circularization is not necessary for the following types of studies:

(a) A reduction in the height of an existing structure.

(b) A structure that would be located on a site in proximity to another previously studied structure, would have no greater effect on aeronautical operations and procedures, and the basis for the determination issued under the previous study could be appropriately applied.

(c) A proposed structure replacing an existing or destroyed structure, that would be located on the same site and at the same or lower height as the original structure, and marked and/or lighted under

the same provisions as the original structure (this does not preclude a recommendation for additional marking/lighting to ensure conspicuity).

(d) A proposed structure that would be in proximity to, and have no greater effect than, a previously studied existing structure, and no plan is on file with the FAA to alter or remove the existing structure.

(e) A structure that would be temporary and appropriate temporary actions could be taken to accommodate the structure without an undue hardship on aviation.

(f) A structure found to have substantial adverse effect based on an internal FAA study.

(g) A structure that would exceed Part 77.23(a)(2) and would be outside the traffic pattern.

(h) A structure that would affect IFR operations but would only need FAA comment. For instance a structure that:

- (1) Would raise a MOCA, but not a MEA.
- (2) Would raise a MVA.
- (3) Would raise a MIA.

3. Circularization for existing structures will be determined on a case-by-case basis.

b. Each public notice (automated letter CIR) must contain:

1. A complete, detailed description of the structure including, as appropriate, illustrations or graphics depicting the location of the structure:

(a) On-airport studies. Use airport layout plans or best available graphic.

(b) Off-airport studies. Use the appropriate aeronautical chart. Additional illustrations may be included, as necessary.

2. A complete description of the obstruction standards that are exceeded, the number of feet by which the structure exceeds the standards.

3. An explanation of the potential effects of the structure in sufficient detail to assist interested persons in formulating comments on how the structure would affect aeronautical operations.

4. A date by which comments are to be received. The date established should normally allow interested persons 30 days in which to submit

comments, but a shorter comment period may be established depending upon circumstances.

c. Public notices should be distributed to those who can provide information needed to assist in evaluating the aeronautical effect of the structure. As a minimum, the following governmental agencies, organizations, and individuals should be included on distribution lists due to their inherent aeronautical interests:

- 1.** The sponsor and/or his representative.
- 2.** All known aviation interested persons and groups such as state, city, and local aviation authorities; airport authorities; various military organizations within the DOD; flying clubs; national, state, and local aviation organizations; flight schools; fixed base operators; air taxi, charter flight offices; and other organizations or individuals that demonstrate a specific aeronautical interest such as county judges and city mayors.
- 3.** Airport owners as follows:
 - (a)** All public-use airports within 13 NM of the structure.
 - (b)** All private-use airports within 5 NM of the structure.
- 4.** The specific FAA approach facility, en route facility (ARTCC), and Flight Service Station (FSS) in whose airspace the structure is located.
- 5.** Flight Standards.
- 6.** An adjacent regional/service area office if the structure is within 13 NM of the regional state boundary.
- 7.** As appropriate, state and local authorities; civic groups; organizations; and individuals who do not have an aeronautical interest, but may become involved in specific aeronautical cases, must be included in the notice distribution, and given supplemental notice of actions and proceedings on a

case-by-case basis. Those involved should clearly understand that the public notice is to solicit aeronautical comments concerning the physical effect of the structure on the safe and efficient use of airspace by aircraft.

8. A proposed structure that penetrates the 40:1 by 35 feet or more, departure slope must be circularized to the following:

- (a)** Aircraft Owners and Pilots Association;
- (b)** National Business Aviation Association;
- (c)** Regional Air Line Association;
- (d)** Department of Defense;
- (e)** Air Transport Association;
- (f)** Air Line Pilots Association; and
- (g)** Other appropriate persons and organizations listed in this section.

d. Document and place in the obstruction evaluation file the names of each person and/or organizations to which public notice was sent. Reference to a distribution code, mailing list, or other evidence of circularization is sufficient provided a printout or list of each coded distribution is maintained for future reference. Also record the time period during which each printout or list is used. The retention schedule is listed in Order 1350.15, Records Organization, Transfer, and Destruction Standards.

e. Consider only valid aeronautical objections or comments in determining the extent of adverse effect of the structure. Comments of a non-aeronautical nature are not considered in obstruction evaluation as described in Part 77.

f. If the sponsor agrees to revise the project so that it does not exceed obstruction standards and would have no adverse effect, cancel the public notice, advise interested parties, as necessary, revise the obstruction evaluation study, and proceed as appropriate.

FIG 6-3-12
STANDARDS FOR DETERMINING SHIELDING: CONGESTED PART OF CITY, TOWN, OR SETTLEMENT

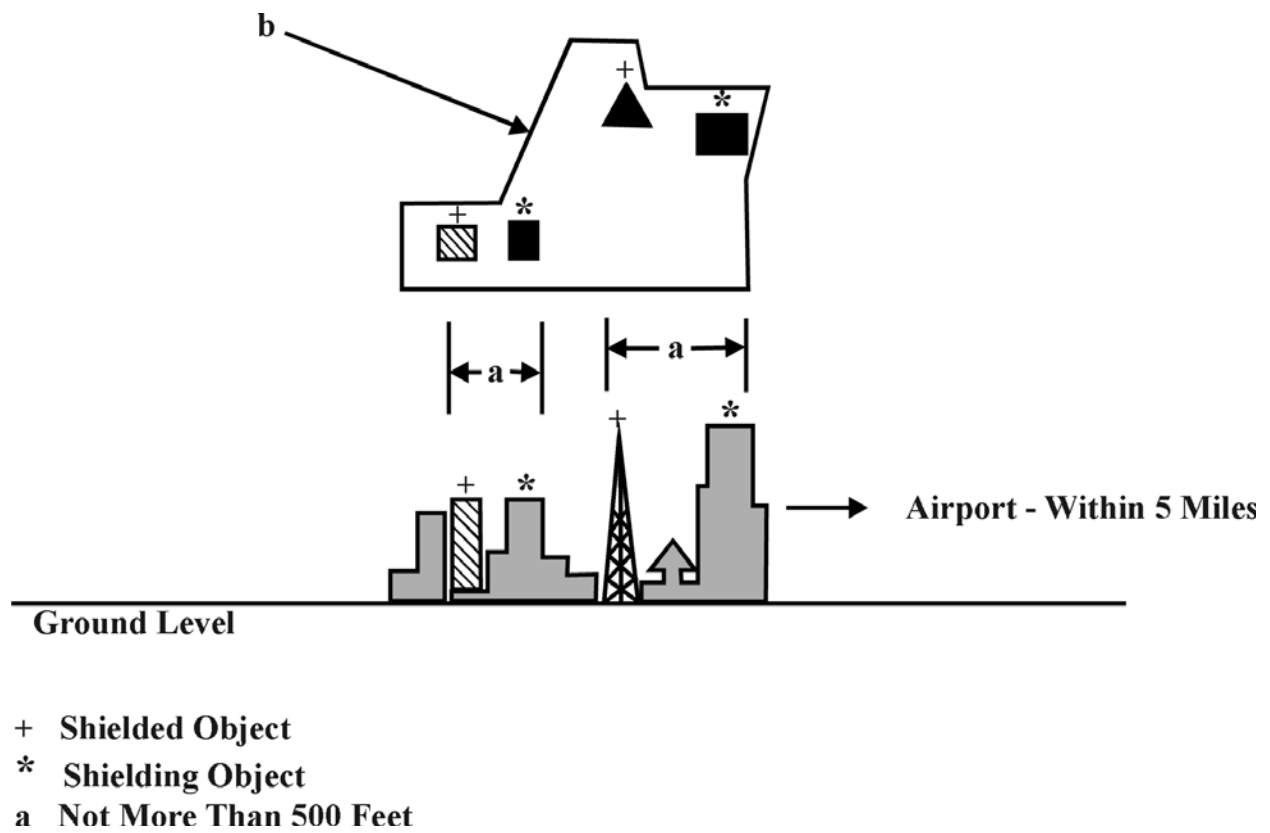


FIG 6-3-13
STANDARDS FOR DETERMINING SHIELDING

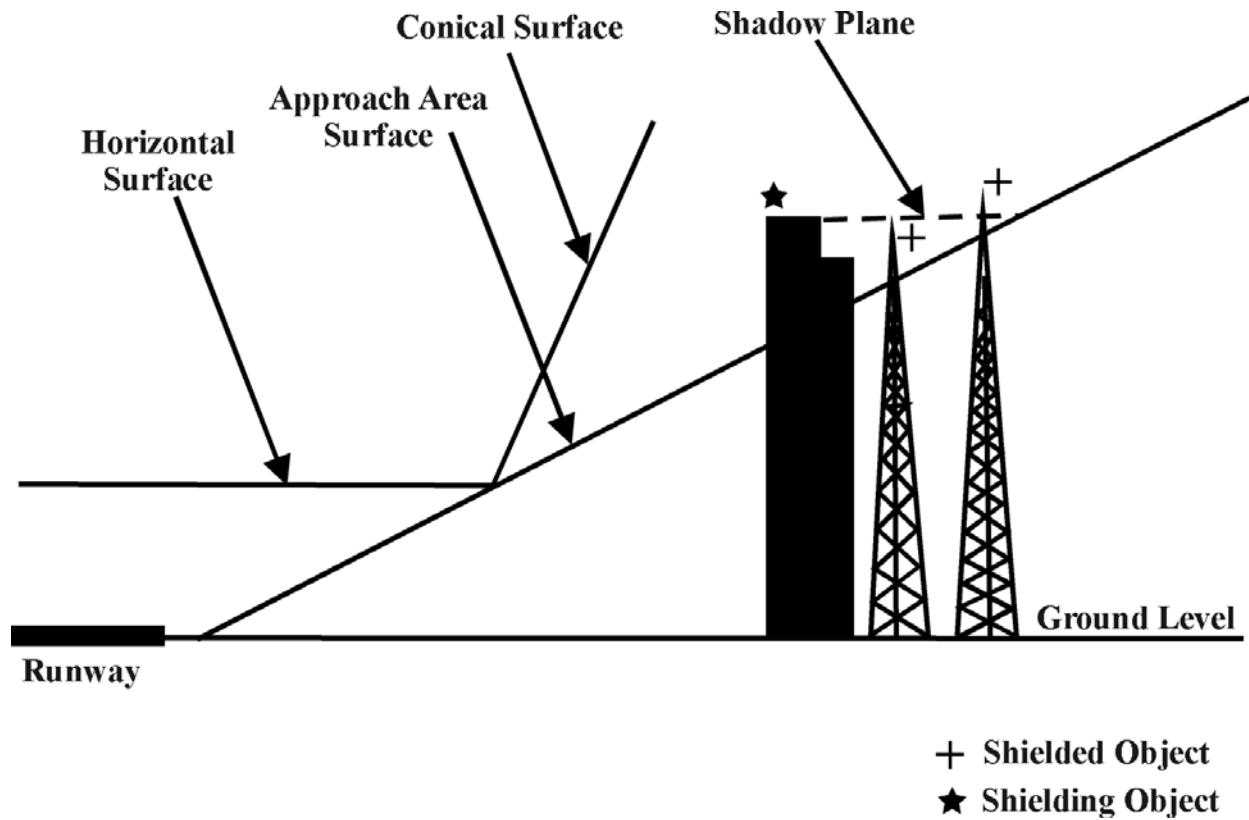


FIG 6-3-14
STANDARDS FOR DEVELOPING SHIELDING: PERSPECTIVE OF A SHADOW PLANE

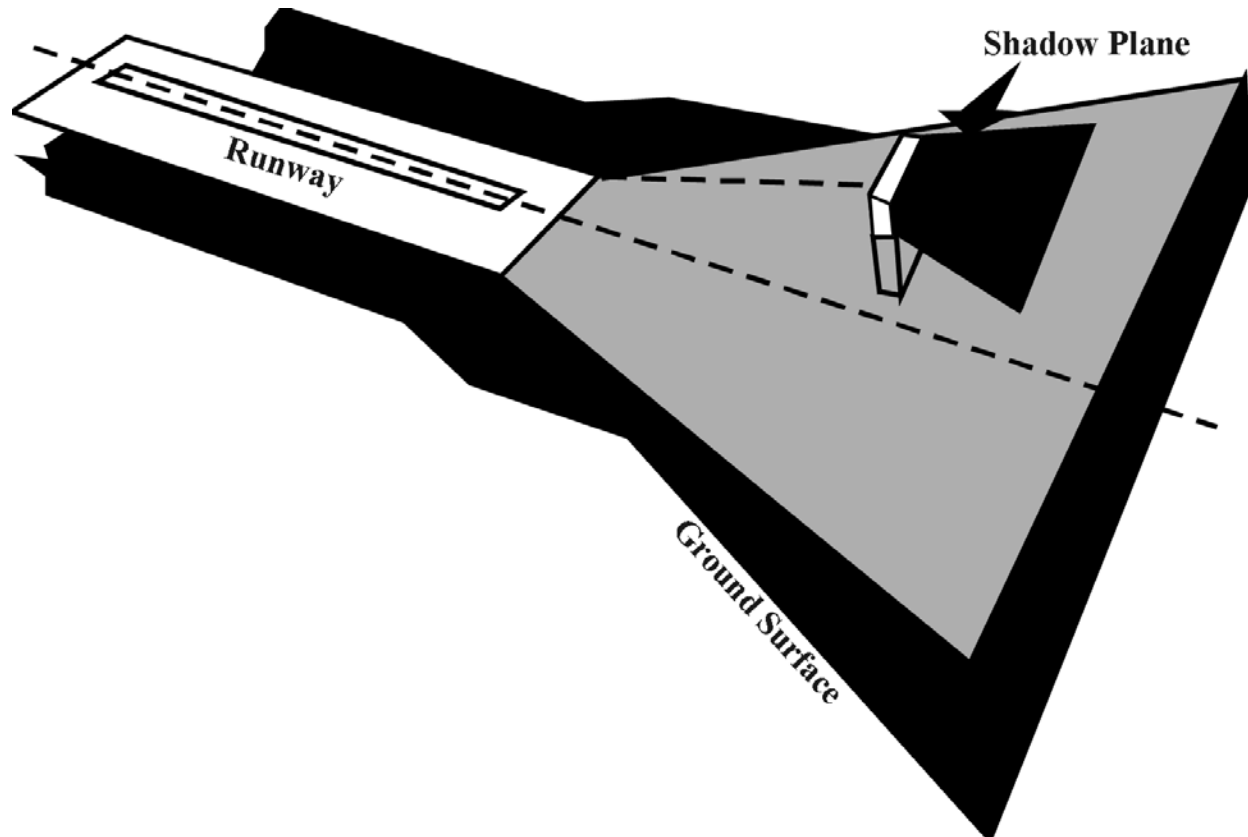


FIG 6-3-15
STANDARDS FOR DETERMINING SHIELDING: EXAMPLES OF SHADOW PLANES

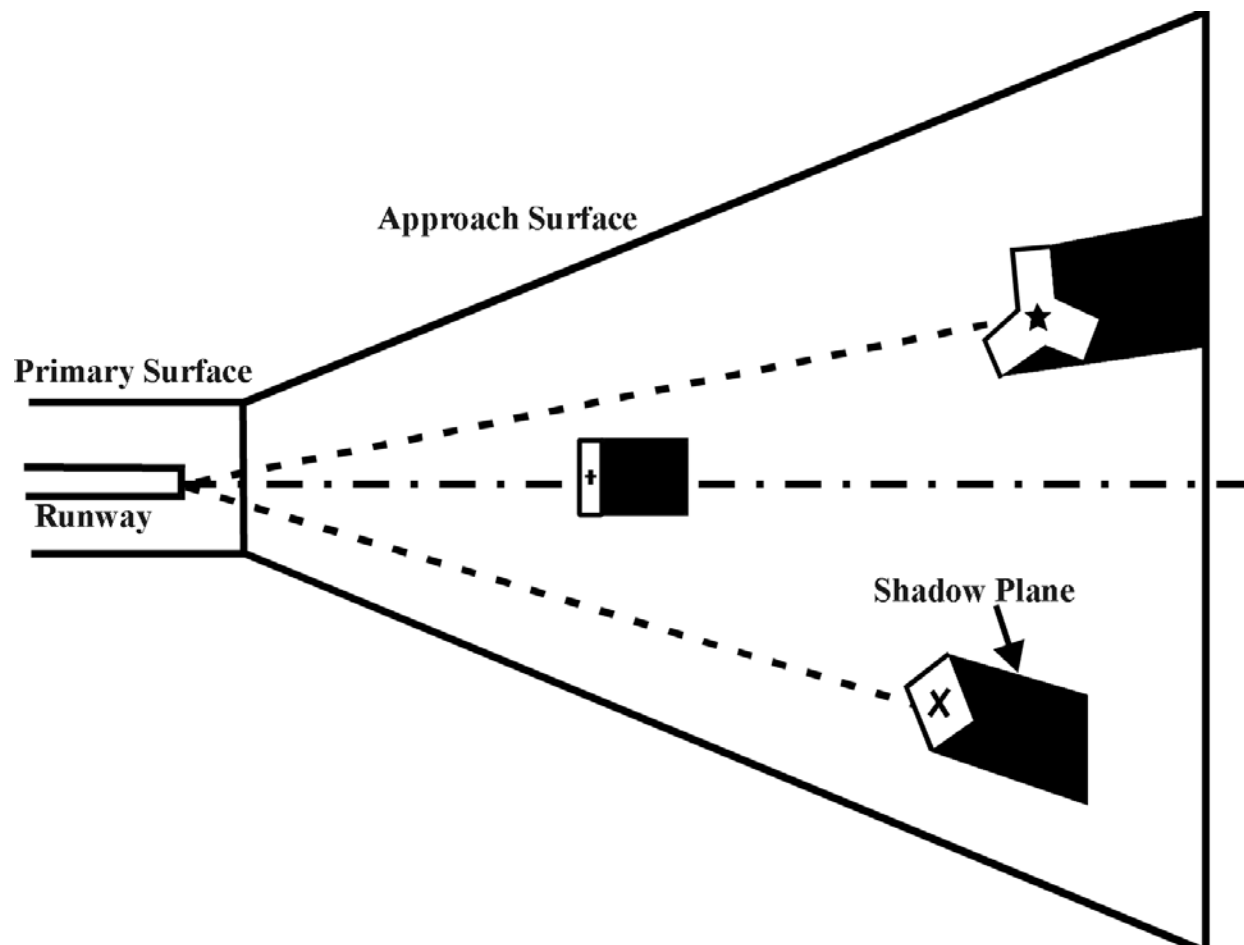


FIG 6-3-16
FREQUENCY PROTECTED SERVICE VOLUME FOR ILS FRONT COURSE

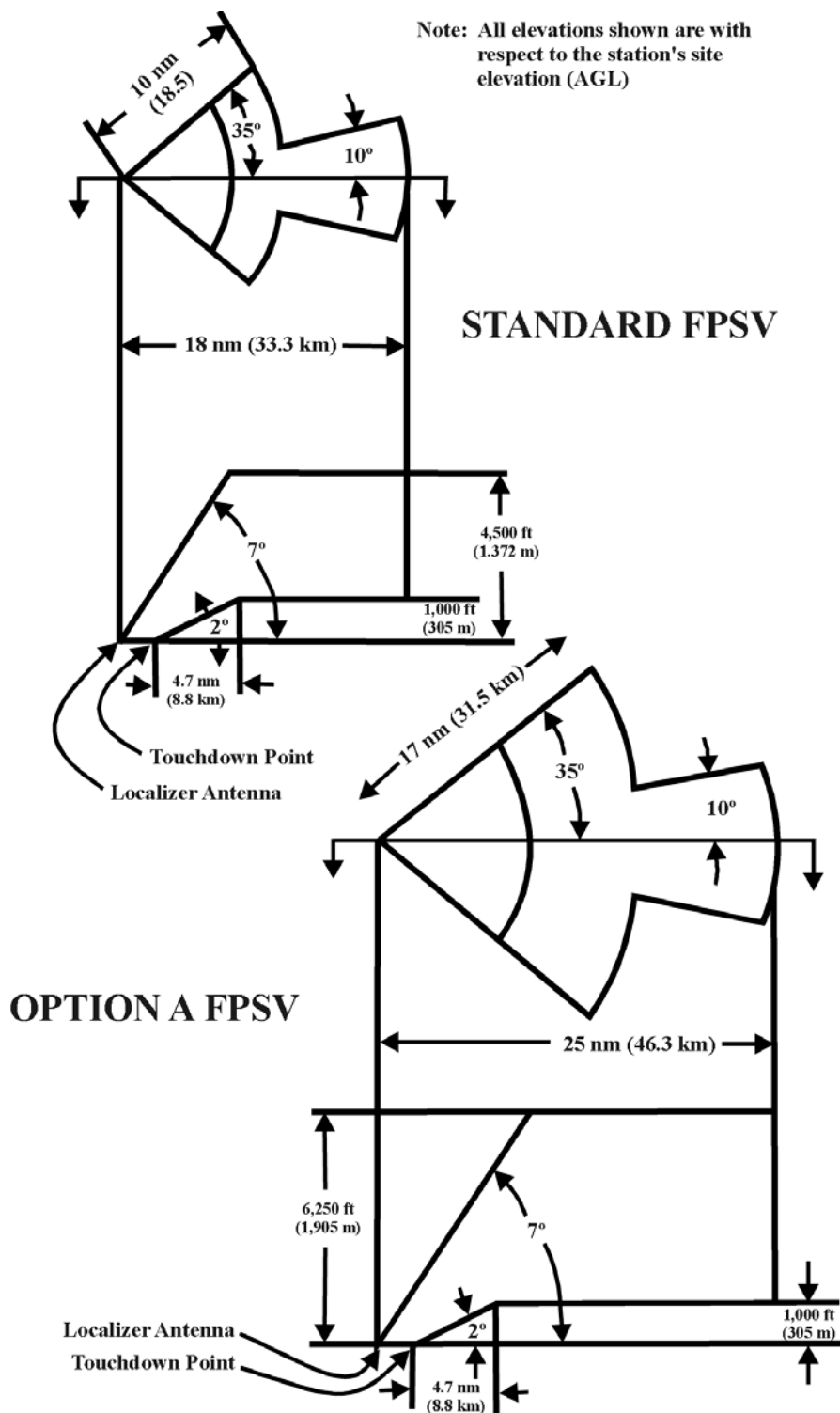


FIG 6-3-17
FREQUENCY PROTECTED SERVICE VOLUME FOR ILS BACK COURSE

Note: All elevations shown are with respect to the station's site elevation (AGL).

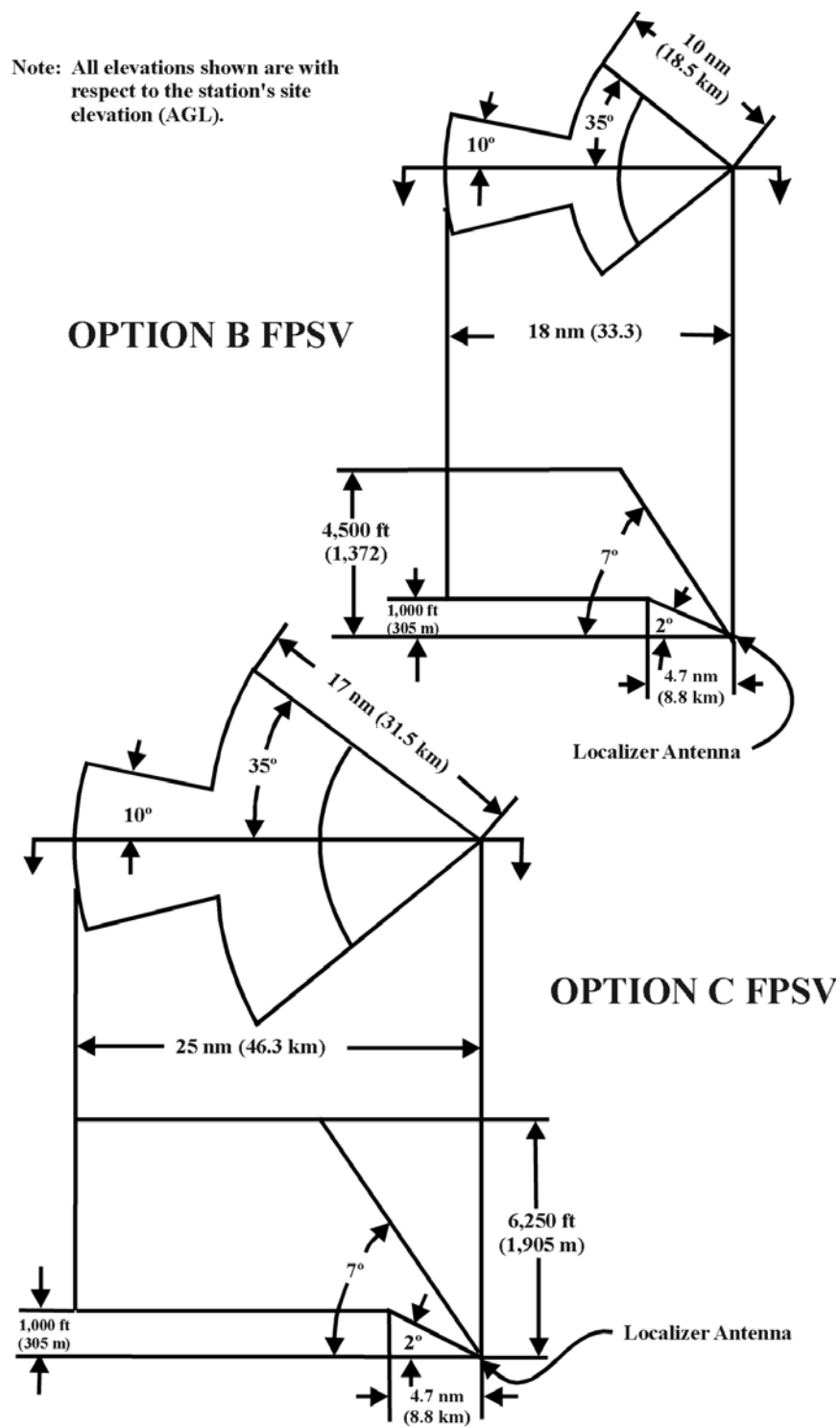
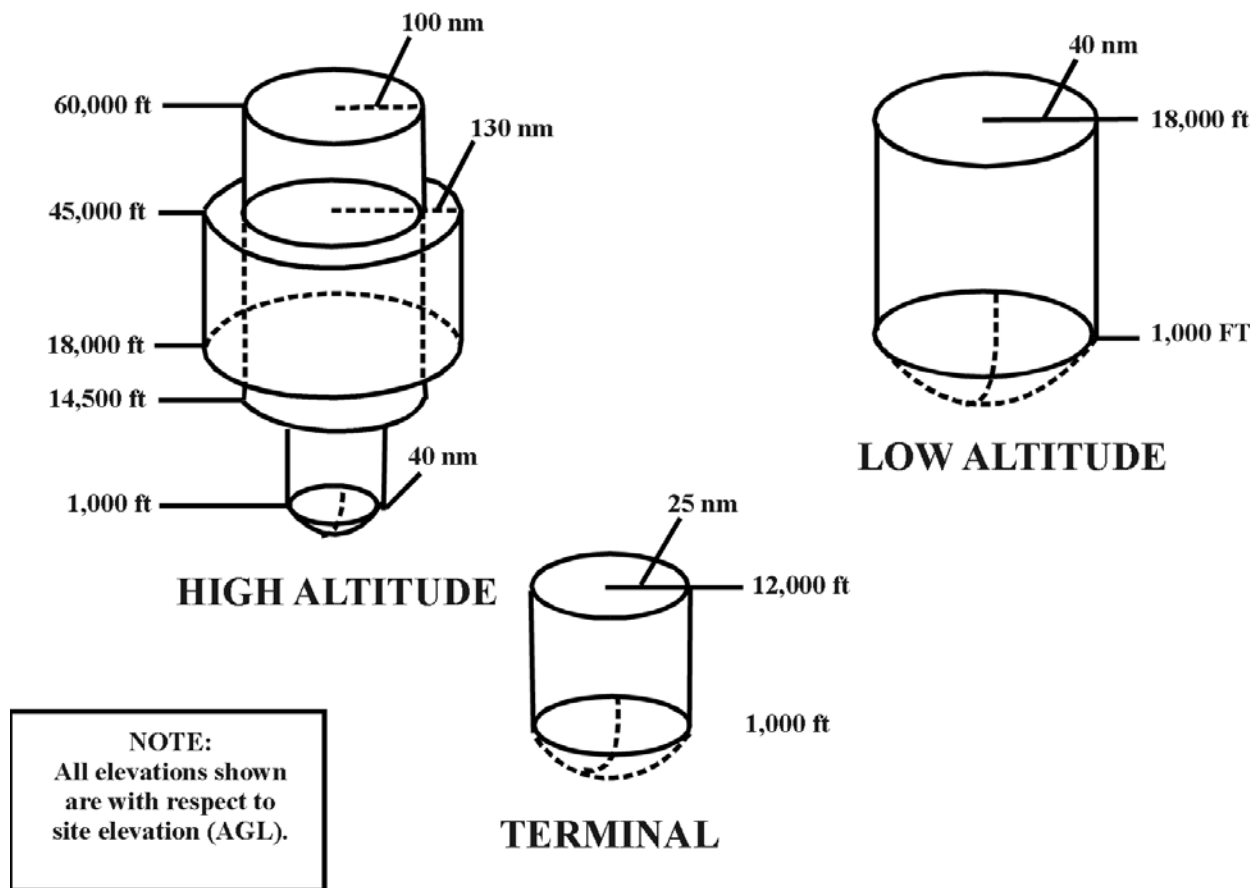


FIG 6-3-18
FREQUENCY PROTECTED SERVICE VOLUME FOR VOR



Section 2. Extension of Determinations

7-2-1. AUTHORITY

The FAA official issuing a determination has the delegated authority to grant an extension. Where a petition for an extension generates public interest or controversy, the OEG must inform the office of Mission Support, Airspace Services.

7-2-2. CONDITIONS

An extension may be granted provided the request is timely (received by the FAA 15 days before the determination expires) and a review of aeronautical activity shows no significant adverse effect resulting from a change that has occurred since the determination was issued. In the event a request for extension to the expiration date cannot be granted based on new facts, a “Determination of Hazard to Air Navigation” should be issued effective on the day following the expiration date of the no hazard determination.

7-2-3. COORDINATION

Coordination with Airspace Regulations and ATC Procedures Group must be obtained before denying extensions that pertain to structures that are subject to FCC licensing authority.

7-2-4. EXTENSION PERIOD

Normally, one extension for a period of 18 months may be granted, unless the sponsor requests a shorter period.

7-2-5. REVIEW PROVISIONS FOR PETITION

If an extension is granted on a DNH, petition rights apply, and therefore, each such extension must contain a statement advising of the petition period, the effective date, and the new expiration date.

7-2-6. DISTRIBUTION

Distribution must be accomplished in accordance with paragraph 7-1-7.

Section 3. Revision, Correction, and Termination of Determination

7-3-1. REVISIONS AND TERMINATIONS BASED ON NEW FACTS

The FAA official responsible for issuing a no hazard determination has the delegated authority (Section 77.35) to revise or terminate the determination provided. The decision is based upon new facts that change the basis on which the original determination was made.

a. Revised determinations based on new aeronautical facts must be issued under a new aeronautical study number that would cancel and supersede the original determination.

b. A decision to terminate a no-hazard determination must be based on new facts that change the basis on which the determination was made. Normally in such a case, a subsequent "Determination of Hazard" would be issued under a new aeronautical study number.

c. If a proposed structure is relocated or there is a height change after a determination of no hazard is issued, a new filing must be submitted. When new filings are received, terminate any previous determinations before moving forward with the aeronautical studies. Multiple filings at the same location result in an administrative hardship and create a cumulative impact issue that could result in erroneous data analysis. Determinations must not be used as a basis for financial arrangements.

7-3-2. CORRECTION

The FAA official issuing a determination may also correct that determination as required. Editorial changes that do not involve a coordinate change (of one second or more in latitude or longitude) or elevation change (of one foot or more) may be issued

as corrections. In this case, no change to dates would be necessary. Adjustments or corrections to a proposal that involve one or both of the above coordinate or elevation changes must be addressed as a new and separate obstruction evaluation study.

7-3-3. STANDARD FORMAT

a. A revised determination based on new aeronautical facts must follow the standard format of the appropriate determination. An explanation should be included addressing the reason for the revision. A statement indicating that the revised determination cancels and supersedes the determination originally issued, should also be included.

b. A determination addressing editorial changes that do not involve structure coordinates or elevations may be issued by duplicating the original determination, making the corrections, adding a statement explaining the correction, and adding "Correction" at the end of the title.

c. A determination addressing corrections to coordinates or elevations must follow the standard format of the appropriate determination. An explanation should be included addressing the correction. This may be done in the description section of the determination. A statement should also be included which indicates that the corrected determination cancels and supersedes the original determination.

7-3-4. DISTRIBUTION

Copies of revised or corrected determinations must be given the same distribution as the original determination and, if appropriate, be distributed to other known interested persons or parties.

Chapter 30. High Intensity Light Operations

Section 1. General

30-1-1. PURPOSE

This chapter prescribes policy and guidelines for determining the potential effect of high intensity light activities on users of the NAS.

30-1-2. POLICY

Consideration must be given to commercial, general aviation requirements as well as to the public right of “freedom of transit” through the airspace. Accordingly, while a sincere effort must be made to negotiate equitable solutions to conflicts over the use of the NAS for non-aviation purposes, aviation must receive primary emphasis.

30-1-3. AUTHORITY

The provisions of 49 U.S.C. Sub Title VII, grants the Administrator the authority for aviation safety. That authority has been delegated to air traffic and Flight Standards with the associated responsibilities to

evaluate activities that can potentially affect aviation safety in the NAS.

30-1-4. DEFINITIONS

The terms used in this chapter are defined below:

a. High Intensity Light (HIL). A lighting system other than laser light designed to penetrate the navigable airspace.

b. HIL Manufacturer. A term that refers to persons who manufactures high intensity light emitting products. This includes those who are engaged in the business of design, assembly, or presentation of a HIL activity.

c. HIL Operator. A knowledgeable person present during HIL operation who is responsible for ensuring compliance with applicable safety standards; monitoring the safe operation of a HIL operation; and can effect termination of the HIL promulgation in the event an unsafe condition becomes apparent.

Section 2. Aeronautical Review/Determinations

30-2-1. EVALUATION OF AFFECTED AIRSPACE AREAS

The following guidelines should be used in evaluating proposals received for HIL activities in the NAS. Refer to airspace zones described in chapter 29 to assist in evaluating those areas in close proximity to an airport. Reduction in the size of a specific zone may be considered when the aeronautical study to assure users of the NAS will not be effected.

30-2-2. AERONAUTICAL STUDY

a. Determination of the potential overall airspace effected by HIL operations must be conducted by the service area office. The aeronautical study, as a minimum, should include the following, as appropriate:

1. Quantities of traffic affected.
2. Location(s) of aviation activity that may be affected, including areas where low-level air traffic operations may occur (e.g. helicopter operations, Flights for Life).
3. Control jurisdiction (e.g., ATC facility).
4. Coordination with Flight Standards, and local officials, as necessary (e.g., FAA air traffic

facilities, appropriate military representatives, and airport managers).

b. Observers, when required, must be able to see the full airspace area surrounding the HIL beam's paths to a distance appropriate to the affected airspace.

c. Require the control measures that ensure aircraft will not be exposed to HIL illumination that has the potential to affect a pilot in the performance of their respective duties.

30-2-3. CONTENT OF DETERMINATION

a. After completing an aeronautical study, the service area office must prepare a Letter of Determination (LOD). Follow the guidelines published in paragraph 29-3-2 to formulate the content of the LOD. Forward a copy of the determination to the proponent of the activity, and when deemed necessary, to all affected ATC facilities, airport managers, and military liaison offices.

b. At the discretion of the service area office, issue a NOTAM to alert pilots of known HIL activity. The service area office may delegate notification responsibility to the respective flight service stations, other air traffic facilities, or require the proponents to activate or cancel the local NOTAM involving the HIL operation through that appropriate facility.

Chapter 32. Environmental Matters

Section 1. General Information

32-1-1. PURPOSE

This section provides guidance and establishes policy and procedures to assist air traffic personnel in applying the requirements of FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, to proposed air traffic actions. The guidance in this chapter will assist air traffic personnel in determining the level of environmental study appropriate for a proposed action and in preparing the required environmental documentation.

The policies and procedures set forth in this chapter are intended to supplement the requirements of FAA Order 1050.1E and other Department of Transportation and FAA directives.

Further, this chapter outlines the approach for considering environmental issues and helps reduce the complexity of the review process, while ensuring that the environmental process associated with proposed air traffic actions is thoroughly and properly documented.

32-1-2. POLICY

It is air traffic policy to use an interdisciplinary approach to assure compliance with all environmental laws and regulations. This policy requires that all projects be reviewed as early as possible to determine if there is the potential for impact to the quality of the human environment. All units of the Air Traffic Terminal, En Route and Oceanic, and Mission Support Service Units must adhere to the requirements in FAA Order 1050.1E.

In addition, all units must comply with the guidelines and directions detailed in this chapter whenever reviewing regulatory and nonregulatory airspace actions.

32-1-3. BACKGROUND

a. FAA Order 1050.1E establishes policies and procedures and assigns responsibility for assuring FAA compliance with the National Environmental Policy Act of 1969, as amended (NEPA), the implementing regulations issued by the Council on Environmental Quality (CEQ) (40 CFR parts 1500–1508), the Department of Transportation (DOT) Order 5610.1, FAA Order 1050.1E, and other related statutes and directives.

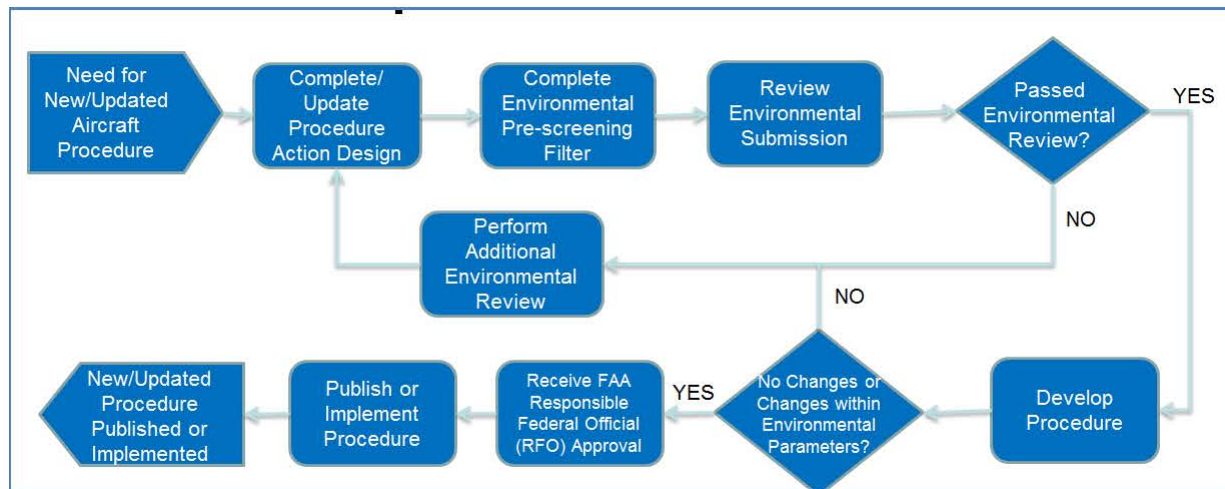
b. The complexity of environmental issues associated with some air traffic activities necessitates a systematic and uniform approach to the environmental review process. This process must assess all impacts, as well as provide the data for preparing the necessary documentation.

c. FAA Order 1050.1E provides the overall procedures and guidance for the FAA's environmental responsibilities. It is the intent of this chapter to complement, and not repeat in its entirety, what is already contained in FAA Order 1050.1E. However, there are issues addressed in FAA Order 1050.1E that require further detail for air traffic or additional emphasis to ensure they are properly addressed.

The Re-engineered Environmental Review Process for Instrument Flight Procedures (IFPs) requires completion of a pre-screening filter and eliminates the need to complete an Initial Environmental Review (IER) form (see Appendix 5), the Checklist in Support of a CATEX Determination, and the CATEX Memo. The Re-engineered Environmental Review Process is depicted in FIG 32-1-1.

This chapter is designed to address these unique actions (i.e., special use airspace proposals) and provide the additional detail necessary for air traffic to conduct an adequate environmental review.

FIG 32-1-1
IFP Re-Engineered Environmental Review Process



32-1-4. DELEGATION OF AUTHORITY

The Approving Official for Environmental Assessments (EAs), Findings of No Significant Impact (FONSIs) and Environmental Impact Statements (EISs) is the FAA official with signature authority for these documents. The FAA official with signature authority to approve a Record of Decision (ROD) is the decision-maker (see Order 1100.154A, Delegation of Authority).

a. The air traffic Facility Manager has signature authority for memoranda related to administrative actions listed in FAA Order 1050.1E, paragraph 200e(4) and advisory actions discussed in FAA Order 1050.1E, paragraphs 200e(1) and 301.

b. The Air Traffic Organization Terminal and En Route and Oceanic Operations Service Area Directors have signature authority for Categorical Exclusions (CATEXs), EAs, FONSIs, EISs, and RODs which are exclusively within the scope of a single service area, and may delegate this authority to a Manager within that service area. For Special Use Airspace (SUA) actions that require approval at the Headquarters level, the associated environmental document also requires approval and signature at the Headquarters level.

The Terminal Service Area is responsible for air traffic NEPA compliance for proposed actions within the jurisdiction of a terminal Air Traffic Control (ATC) facility.

The En Route and Oceanic Service Area is responsible for air traffic NEPA compliance for proposed actions not associated with an ATC terminal facility. Additionally, the En Route and Oceanic Service Area will be designated as the point of contact for the establishment or modification of SUA or Military Training Routes (MTRs) when requested by another Federal agency.

When a proposed action requires involvement by both the Terminal and En Route and Oceanic Service Area, the Terminal Service Area will be the lead entity for NEPA compliance.

c. The Terminal and/or En Route and Oceanic Service Unit Vice Presidents have signature authority to sign EAs, FONSIs, EISs, and RODs that are beyond the scope of authority of a single service area.

d. The Mission Support, Airspace Services, Airspace Management Group is responsible for coordinating environmental processes that cross service area boundaries.

e. CATEXs produced based on the results of the Re-engineered Environmental Review Process for IFPs are under the authority and responsibility of the Service Center Operations Support Group (OSG) Flight Procedures Team (FPT) unless it is routed to an OSG Environmental Specialist, at which time it is subject to the authority and responsibilities described above in this Order.

32-1-5. RESPONSIBILITIES

The order of delegated authority for air traffic environmental processes is as follows:

a. Mission Support, Airspace Services, Airspace Management Group. The Airspace Management Group has been delegated authority to direct and implement environmental policy and procedures for air traffic actions. It must design and initiate training programs to educate air traffic personnel in Headquarters, in the Terminal and En Route and Oceanic Service Areas and in air traffic field facilities on environmental laws, regulations, policies, and processes related to the implementation or revision of air traffic airspace and procedures.

The Airspace Management Group must direct and implement training for air traffic Environmental Specialists in the use of noise modeling tools (see subparagraph 32-1-5.b., Terminal and En Route and Oceanic Service Units and Service Areas). Additionally, the Airspace Management Group must serve as the air traffic focal point for the Headquarters Environmental Network chaired by the Office of Environment and Energy (AEE).

b. The Vice Presidents of Air Traffic Services have the final responsibility for ensuring that all appropriate environmental documentation within their area of jurisdiction is prepared accurately and completely.

The Service Center Directors must be responsible for designating at least one person to serve as the Environmental Specialist within his/her service area to address air traffic environmental issues. Funding for training associated with the duties of the Environmental Specialist must also be the responsibility of the Service Area Director (or the Director's designee).

In addition, the Service Area Director (or their designees) must appoint a representative to serve as the focal point for their service area on the AEE Environmental Network. The representative must coordinate any environmental activity in his/her service area with the Airspace Management Group, as appropriate.

The Service Center Directors must ensure that the Environmental Specialist attends the following training, as soon as practicable after his/her appointment to the position:

1. FAA Academy Course #12000, Introduction to NEPA Requirements and Procedures.
2. FAA Academy Course #50019, Airspace and Procedures.
3. Community Involvement.
4. Electronic Learning Management System (eLMS) Course #60000076, NEPA 101.
5. NEPA 102 for the Re-engineered Environmental Review Process for Instrument Flight Procedures (IFPs).
6. Re-engineered Environmental Review Process for IFPs and the Environmental Pre-Screening Filter.
7. Environmental screening tools and models training (i.e., NST/AEST, INM, AEDT, TARGETS Plug-in, etc.).

Recurrent training to supplement these minimums should be provided, as appropriate.

In addition, when members of the FPT or other specialists have duties that include the use of the Pre-Screening Filter, they must complete training on the Filter, NEPA 101, and NEPA 102.

c. Service Area Environmental Specialist.

1. The Service Area Environmental Specialist is responsible for reviewing environmental studies and forwarding written concurrence to the air traffic facilities originating any environmental documentation.

2. The Service Center Environmental Specialist must provide guidance in and oversee the preparation of the air traffic initial environmental reviews (see Appendix 5) and in the use of the IFP Environmental Pre-Screening Filter. The Service Center Environmental Specialist is responsible for the preparation of CATEXs, EAs, EISs, Letters of Adoption, and Written Reevaluations for air traffic actions, unless it is a CATEX prepared based on the results of the IFP Environmental Pre-Screening Filter.

3. The Service Area Environmental Specialist is responsible for preparation of FONSI and RODs for air traffic actions.

4. The Service Area Environmental Specialist must coordinate requests for training by personnel within his/her service area with the Airspace Management Group.

5. The Service Area Environmental Specialist must review NEPA documentation initiated by the Technical Service Areas. In addition, the Service Area Environmental Specialist must cooperate with Airport District Offices or the Airport Division, within his/her jurisdiction, on the preparation of NEPA documents and Federal Aviation Regulation Part 150 studies undertaken by these offices. Review and comments by the Service Area Environmental Specialist must be directed to those matters affecting the operation of the air traffic program. Comments must be forwarded to the appropriate Airports Program office. The Service Area Environmental Specialist may also be requested to attend public meetings or hearings to provide support to the facility, service area, or other lines of business convening the meeting or hearing.

6. The Service Area Environmental Specialist must act as the FAA environmental point of contact when another Federal agency (e.g., Department of Defense (DOD)) requests FAA participation as a Cooperating Agency on air traffic or airspace actions.

NOTE—

When a request for Cooperating Agency status is received from the DOD related to Special Use Airspace (SUA), a copy of Appendix 2 and Appendix 3, (flow charts for SUA environmental and aeronautical non-rulemaking and rulemaking actions, respectively) along with a copy of Appendix 4 (a summary of FAA procedures for processing DOD SUA actions), will be attached to the response. A copy of the response, which will also identify the Service Area environmental point of contact, will be provided to the appropriate Service Area.

Additionally, the Service Area Environmental Specialist must review other agencies' environmental documentation when applicable (for example, when the FAA is considering adopting the environmental documentation).

7. In the case of SUA actions, the Service Area Environmental Specialist must review environmental studies in accordance with paragraph 32–2–3.

8. The Service Area Environmental Specialists must coordinate with each other and with their counterparts in other agencies, as appropriate.

d. Air Route Traffic Control Center (Center), Terminal Radar Approach Control (TRACON), and Air Traffic Control Tower (ATCT) Facility Managers.

1. Center, TRACON, and ATCT Facility Managers must be responsible for ensuring that all appropriate environmental documentation for proposed air traffic actions within their jurisdiction is prepared accurately and completely. For procedures reviewed through the IFP Environmental Pre-Screening Filter, these managers must ensure that the results of the Filter are reviewed by appropriate FAA personnel. For actions that require additional environmental review, these managers are responsible for recommending to the Service Center Environmental Specialist the appropriate level of environmental review.

For actions other than Advisory or Emergency Actions (as defined in FAA Order 1050.1E), and actions that require additional environmental review beyond the IFP Environmental Pre-Screening Filter, the Facility Manager must ensure that, at a minimum, the Air Traffic Initial Environmental Review (IER) (see Appendix 5) is prepared and submitted to the Service Center Environmental Specialist along with the proposed action (see Paragraph 32–2–1.a., Determination of Appropriate Environmental Documentation). Under some limited circumstances, the Service Center Environmental Specialist may waive the need for completion of the IER by substituting an appropriate level of documentation (i.e., memorandum to the file).

The ATCT Manager should be involved early in the design phase of a proposal to ensure that a full understanding of tower/airport operations is included in the alternatives development. The ATCT Manager is responsible for ensuring that information provided to the Center, and/or TRACON is complete and accurate.

The Facility Managers must also be responsible for designating at least one facility staff specialist within their scope of operations to address environmental issues. The facility specialist may be required to perform his/her environmental duties on a full-time or collateral basis. The decision about the need for a full-time Environmental Specialist at a field facility must be made by the Facility Manager.

The Facility Managers must ensure that the specialist who performs environmental duties on a full-time basis attends the training specified in Paragraph 32–1–5.b., Responsibilities, as soon as practical.

In addition, where other facilities have, or are authorized to have, an operations specialist (i.e.,

Plans and Programs Specialist, Procedure Specialists), to conduct environmental activities as a collateral duty, it is recommended that these specialists attend the above-referenced training.

2. The Facility Managers must ensure that their facility is represented at Airport Program and other line of business NEPA and Airport Program Part 150 process meetings where decisions rendered could affect air traffic operations in their area of responsibility. The Facility Managers must cooperate fully with operating divisions, airport sponsors, and contract support personnel in the environmental review processes. Additionally, air traffic attendance at these meetings does not necessarily constitute air traffic endorsement or sanction of the proposed action.

NEPA documents and FAR Part 150 studies must receive thorough review at the facility level. Review and comments on Airport Program documents must be directed to those matters that affect the operation of the air traffic program. Facility comments must be forwarded to the Service Area Environmental Specialist, not more than 15 days after receipt of the document or study. (Requests for longer periods of review must be coordinated with the Service Area Environmental Specialist on an as-needed basis.) Prior to a facility submitting comments directly to other operating divisions, or airport sponsors, the facility point of contact must

discuss the issues with the Service Area Environmental Specialist.

Facility Managers (or their designees) must not make or recommend a proposed flight track, route or air traffic flow as a preferred action for the sole purpose of noise abatement. They may, however, indicate if the proposed action is operationally feasible or safe (within the context of aircraft separation standards). The airport sponsor (operator) is solely responsible for the recommendation of noise abatement procedures.

3. The field facility is responsible for preparing the IER with supporting noise screening results and recommending a CATEX, an EA or an EIS for new or revised air traffic procedures, or airspace modifications. After completion of the IER, the originating facility must forward the recommendation for a CATEX, EA or EIS along with all the supporting documentation to the Service Center Environmental Specialist for review and approval. The Service Center Environmental Specialist must then prepare the Categorical Exclusion Declaration (if appropriate) for signature by the Service Center Director (or the Director's designee). For IFP actions reviewed through the IFP Environmental Pre-Screening Filter, the OSG FPT or Environmental Specialist will determine the appropriate level of environmental documentation after reviewing the results from the Filter.

Section 2. Environmental Processing

32-2-1. PROCEDURES

The Terminal or En Route & Oceanic Service Area must conduct the NEPA process for any proposed air traffic action in their area of jurisdiction with the potential to impact the human environment. Examples of air traffic actions include, but are not limited to, procedural changes that create new or alter existing flight tracks over noise sensitive areas or altitudes utilized by aircraft, certain SUA requests or changes, and initiatives effecting operational changes (for example, changes in runway use percentage or heading). Environmental documentation for such actions must be completed prior to approval and subsequent implementation (see Appendix 1, Environmental Study Process Flow Chart, for the steps from action concept to implementation).

If the FAA is not the proponent of the proposed air traffic action (e.g., the Department of Defense or an Airport Sponsor [the proponent] requests the FAA to take the action) then the proponent is responsible for funding and preparation of environmental documentation associated with the proposed action. FAA Order 1050.1E, "Environmental Impact: Policies and Procedures," paragraph 203b and 203c discuss responsibility for preparation of EAs or EISs (respectively) where FAA must approve the project. Signature authority for the environmental documents discussed in this section must be in accordance with Paragraph 32-1-4, Delegation of Authority, of this chapter.

The FAA or non-FAA proponent must prepare and submit the associated environmental documentation in conjunction with the proposed air traffic action, as follows:

a. Determination of Appropriate Environmental Documentation. The appropriate level of environmental documentation required must be determined after all portions of a proposed action have undergone the Air Traffic Initial Environmental Review (IER) (see Appendix 5). The IER must be used for all projects that will require headquarters-level funding for completion of the environmental process. For those projects not being funded at the headquarters level, completion of the IER is optional. Facility personnel and the Service Area Environmental Specialist must coordinate the IER process. For IFP

actions reviewed through the IFP Environmental Pre-Screening Filter, the OSG FPT or Environmental Specialist must determine the appropriate level of environmental documentation after reviewing of the results from the Filter.

The completed IER, along with a recommendation as to whether the proposed action warrants no further environmental review, a CATEX, or preparation of an EA or an EIS must be forwarded to the Service Area Environmental Specialist. Field personnel must consult FAA Order 1050.1E before making a recommendation on the appropriate level of environmental review for a proposed action. Following are specific sections of FAA Order 1050.1E that must be reviewed.

1. Advisory Actions, paragraph 301. A memorandum to the file may be the only documentation necessary.
2. Emergencies, paragraph 302.
3. Extraordinary Circumstances, paragraph 304.
4. Categorical Exclusion, paragraphs 303 and 307 through 312, and Extraordinary Circumstances, paragraph 304. Only those categorical exclusions listed may be cited.

A review of paragraph 305 will assist in determining the appropriate level of environmental documentation required for a CATEX (see Appendix 6 of this order for a "Sample Categorical Exclusion Declaration").

5. Chapter 4 of FAA Order 1050.1E addresses EAs and FONSI. A review of this chapter will assist in determining when to prepare these documents. The FAA may adopt, in whole or in part, an EA prepared by another Federal agency. Consult FAA Order 1050.1E paragraph 404d to determine if the EA meets the criteria for FAA adoption.

6. Chapter 5 of FAA Order 1050.1E addresses EISs and RODs. A review of this chapter will assist in determining when and how to prepare these documents.

7. A review of FAA Order 1050.1E, Appendix A, Section 14 will assist in determining whether a noise analysis is warranted and if so, what type of

analysis should be conducted. A noise analysis requires several different types of input data including radar data. This data is available to FAA and other Federal Government personnel. Request for the data should be made through the Service Center Area Environmental Specialist assigned to the proposal.

However, requests for the FAA to release radar data, to other than FAA personnel, for use in noise studies or NEPA documents should be via FAA Order 1200.22C, Use of National Airspace System (NAS) Computer and Radar Data or Equipment by Outside Interests, or the Freedom of Information Act (FOIA) process. It may be simpler and more expedient to utilize the FOIA process, as FOIA does not require use of the Data Release Review Committee or a Memorandum of Agreement between the FAA Field Facility and an Environmental Contractor. Consultation with the Service Area Environmental Specialist should occur if radar data is needed.

b. Preparation of Environmental Documents. Following are the various levels of environmental studies and documentation that may be prepared.

1. Actions Not Subject to NEPA Review. See FAA Order 1050.1E, paragraph 200e(4), for a list of actions that require no environmental study.

2. No Further Environmental Action Required. Some air traffic actions are subject to NEPA review, but require no further environmental action after the initial NEPA review is completed. These actions relate to modifications to airspace and/or procedures and may fit some or all of the following criteria. The proposed change:

(a) is above 7,000 feet (ft) above ground level (AGL) for arrivals, and/or above 10,000 ft AGL for departures and/or overflights;

(b) is over a non-noise sensitive area(s);

(c) does not alter the current noise footprint;

(d) does not cause the following noise level changes over noise sensitive areas, as defined in FAAO 1050.1E, paragraph 11.b(8):

(1) 1.5 dB within the 65 DNL contour,

(2) 3.0 dB within the 60–65 DNL contour,
or

(3) 5.0 dB within the 45–60 DNL contour.

(e) is above 18,000 ft AGL.

Currently there is no reason to analyze aircraft noise above 18,000 ft AGL. Any decision to analyze aircraft noise above 10,000 ft AGL is an exception and should be coordinated with the ATO Airspace Management Group at FAA headquarters at the earliest possible time. Consideration for analyzing the proposed change between 10,000 ft and 18,000 ft AGL will be given when there is a National Park or Wildlife Refuge in the study area and the change is likely to be highly controversial. (See Memorandum, Change in Air Traffic Noise Screen Policy, dated January 7, 2001.) For IFP actions reviewed through the IFP Environmental Pre-Screening Filter, most of these determinations will be made automatically based on the information input into the Filter.

NOTE—

An FAA-approved environmental screening tool or model must be used to confirm the noise data when the project is not processed through the IFP Environmental Pre-Screening Filter. (See FAA Order 1050.1E, Appendix A, Paragraph 14.6 for those projects that do not require a noise analysis.)

Following review and consultation, the field Facility Manager and Service Area Environmental Specialist may agree that no further environmental review is required. When this occurs, the originating facility must prepare a memorandum to the file and attach any supporting documentation, which indicates the basis for the determination (i.e., copy of the proposed action that includes references to the above criteria, results of the noise review, etc.). Additionally, the memorandum must include, if applicable, references to the provisions of FAA Order 1050.1E that support the determination (i.e., the proposed action is administrative or advisory in nature).

3. Categorical Exclusions (CATEXs). After completion of the IER (when applicable), the originating facility must forward the IER and any supporting environmental documentation (CATEX, EA or EIS) to the Service Area Environmental Specialist for concurrence. The Service Area Environmental Specialist must then prepare the Categorical Exclusion Declaration (see Appendix 6). If the IFP Environmental Pre-Screening Filter is used, then the environmental data is gathered electronically instead of through the IER, and it is forwarded to the appropriate next step in the IFP process. A CATEX does not apply to a proposal if

extraordinary circumstances as described in FAA Order 1050.1E, paragraph 304, exist.

4. Environmental Assessments (EA). Although the Facility manager must make a recommendation on the level of environmental review, the Service Area Environmental Specialist must make the final determination as to whether the proposed action warrants preparation of an EA or an EIS. For proposed actions that warrant an EA, the Service Area Environmental Specialist may need to request additional resources, funding, and information to support the proposal. Consultation with the Airspace Management Group regarding projects at this stage is recommended. If an independent contractor is to prepare the EA, the Service Area Environmental Specialist must oversee the preparation to ensure compliance with FAA Order 1050.1E, chapter 4.

FAAO 1050.1E, chapter 4 summarizes and supplements requirements of CEQ for EAs. The CEQ regulations do not specify a required format for an EA, however FAA Order 1050.1E, paragraph 405, contains a sample format that will facilitate preparation of an EA, and integrate compliance with other environmental laws, regulations, and Executive Orders with NEPA review.

5. Findings of No Significant Impact (FONSI). If an EA reveals that a proposed air traffic action would not cause significant adverse impacts, the Service Area Environmental Specialist must prepare a FONSI.

FAA Order 1050.1E, paragraph 406, summarizes and supplements CEQ requirements for FONSI. The CEQ regulations do not specify a format for FONSI, but FONSI must contain the information discussed in 40 CFR 1508.13. The FONSI may be attached to an EA, may be combined with the EA in a single document, or may be a stand-alone document. Paragraph 406 should be reviewed in detail prior to completion of a FONSI to assist in determining the type of document to prepare. If the FONSI is not combined with or attached to an EA, it must include a summary of the EA and note any other environmental documentation related to it. If the FONSI is attached or included with the EA, the FONSI does not need to repeat any of the discussions in the EA but may incorporate them by reference. All documentation relied upon must be made available to the public upon completion of the environmental process.

If mitigation is included as a requirement in the FONSI, appropriate follow-up actions must be taken to ensure that the required mitigation is implemented. The service area preparing the FONSI is responsible for ensuring that the required mitigation is implemented.

6. Environmental Impact Statement (EIS). If a proposed action requires preparation of an EIS, the Service Area Environmental Specialist must advise the Area Director when there is a need to seek funding and/or resources for the EIS. Consultation with the Airspace Management Group regarding projects at this stage is highly recommended. The FAA or a contractor it selects will prepare an EIS for projects that potentially may cause significant environmental impacts (40 CFR Part 1506.5(c)). If an independent contractor is to prepare the EIS, the Service Area Environmental Specialist must oversee the preparation to ensure compliance with FAA Order 1050.1E, paragraphs 503 through 511.

NOTE—

The Service Area Environmental Specialist must ensure that all EAs and any subsequent EISs for proposed air traffic action within their area of jurisdiction meet the requirements of FAA Order 1050.1E. The originating facility is responsible for the accuracy of operational data and assumptions contained therein.

7. Record of Decision (ROD). For all proposed air traffic actions that have been the subject of an EIS, the Service Area Environmental Specialist must prepare a ROD in accordance with FAA Order 1050.1E, paragraph 512. (For proposed air traffic actions for which a FONSI is prepared, the Service Area Environmental Specialist should consider preparing a ROD in accordance with FAA Order 1050.1E, paragraph 408.)

If an independent contractor prepares the EIS, that contractor may also support preparation of the ROD. However, the ROD documents the agency's decision on the Federal action and remains the responsibility of the FAA.

32-2-2. 14 CFR PART 150 STUDIES

Airport Sponsors (Operators) may choose to conduct a 14 CFR part 150, Airport Noise Planning, Land Use Compatibility Guidelines, study to analyze the operation of an airport, identify compatible and non-compatible land uses, and assess the costs and benefits of noise mitigation techniques. Noise Compatibility Programs that result from Part 150

studies often recommend modifications to air traffic routes and/or procedures to accomplish noise abatement. The FAA does not normally make changes in air traffic routes and/or procedures solely for the purpose of noise abatement. However, under Part 150, the FAA can approve flight procedures to reduce noise that are recommended in a Noise Compatibility Plan. If modifications to air traffic routes and/or procedures are recommended, air traffic will evaluate those recommendations as to feasibility and provide input to the appropriate Airports Program office.

While preparation of a 14 CFR Part 150 study does not necessarily invoke NEPA, the potential implementation of recommended noise abatement measures, such as alternative air traffic procedures, is subject to the NEPA process by the air traffic program. During the Part 150 process, Facility Managers should keep the Airports Division or Airports District Office representative and the Service Area Environmental Specialist advised of any alternative air traffic control procedures that have the potential to invoke the NEPA process. The Facility Managers are responsible for ensuring that current operational data and assumptions (furnished to the entity completing the Part 150 process) are accurate and that future operational data and assumptions reflect reasonable conditions. (Operational data in this context relates to flight track and profile data and/or documentation.)

The facility environmental representative and the Service Area Environmental Specialist must coordinate with the Airports Division or Airports District Office representative throughout the Part 150 process. This coordination should ensure that assumptions and data used are reviewed at each phase and results can be verified early in the process. Early coordination will allow for needed adjustments in any operational assumptions prior to completion of the study.

The Service Area Environmental Specialist must coordinate with the Airports Division or Airports District Office personnel to furnish any data necessary for use in the 14 CFR Part 150 study. Additionally, air traffic participation in the process does not constitute air traffic approval for a 14 CFR Part 150 action.

During other noise studies conducted by the Airport Sponsor, Facility Managers and Service Area Environmental Specialists must work with the Airport Sponsor and Airports Program personnel on the exchange of information as described above.

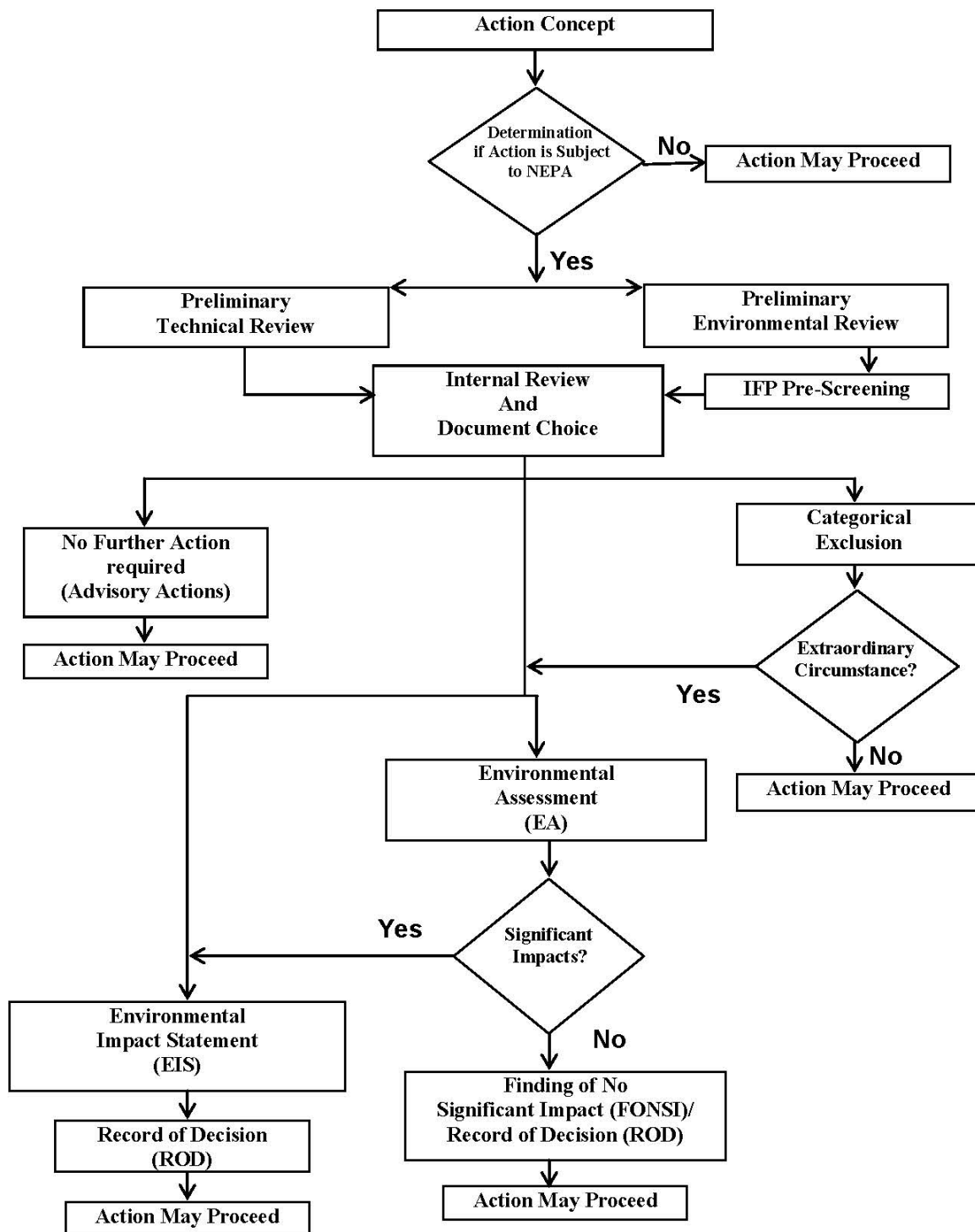
32-2-3. SPECIAL USE AIRSPACE (SUA)

The purpose of this section is to ensure that air traffic personnel and SUA proponents are aware of the need to comply with NEPA and CEQ requirements for evaluating the environmental impacts of proposed SUA actions. (See, for example, FAA Order 1050.1E, paragraph 401p.) This section supplements the airspace processing requirements contained in Part 5. of this Order.

Normally, SUA is designated to support DOD requirements. The FAA/DOD Memorandum of Understanding (MOU) provided in Appendix 7, sets forth procedures and responsibilities for the evaluation of the environmental impacts of DOD SUA proposals. It designates when DOD is the lead agency and when FAA is the cooperating agency for NEPA compliance on SUA proposals.

Appendix 8, FAA Special Use Airspace Environmental Processing Procedures, establishes air traffic environmental processing procedures for proposed SUA actions. In the case of SUA proposals submitted by non-DOD Federal agencies, the responsibility for preparation of an EA or EIS, if required, rests with the proponent (i.e., the requesting Federal agency). However, the FAA retains responsibility under NEPA to ensure that its SUA actions are supported by adequate environmental documentation.

Appendix 1. Environmental Study Process Flow Chart



Appendix 5. Air Traffic Initial Environmental Review

Facility/Office: _____

Date: _____

Prepared by: _____ Phone: _____ Fax: _____

(Also see Section X for the complete listing of preparers.)

=====

This initial environmental review should provide some basic information about the proposed project to better assist in preparing for the environmental analysis phase. Although it requests information in several categories, not all the data may be available initially. However, it does represent information, in accordance with FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, which ultimately will be needed for preparation of the environmental document. If the IFP Environmental Pre-Screening Filter is used for initiating the environmental review process, then the data must be entered into the filter, making this form unnecessary.

Project Description

- A. Attach copy of the most recent Project Status Report.
- B. Has airspace modeling been conducted using SDAT, TAAM, TARGETS, or other airspace/air traffic design tool? ☐ Yes Model: _____ ☐ No
If yes, provide a summary of the output from the modeling.
- C. Describe the present (no action alternative) procedure in full detail. Provide the necessary chart(s) depicting the current procedure. Describe the typical fleet mix, quantifying (if possible) the number of aircraft on the route and depict their altitude(s) along the route.
- D. Describe the proposed project, providing the necessary chart(s) depicting changes. Describe changes to the fleet mix, numbers of aircraft on the new route, and their altitude(s), if any.
1. Will there be actions affecting changes in aircraft flights between the hours of 10 p.m. – 7 a.m. local? Yes ☐ No
 2. Is a preferential runway use program presently in effect for the affected airport(s), formal or informal? ☐ Yes ☐ No
 3. Will airport preferential runway configuration use change as a result of the proposed project?
☐ Yes ☐ No
 4. Is the proposed project primarily designed for Visual Flight Rules (VFR), Instrument Flight Rules (IFR) operations, or both? ☐ VFR ☐ IFR ☐ Both

If this specifically involves a charted visual approach (CVA) procedure, provide a detailed local map indicating the route of the CVA, along with a discussion of the rationale for how the route was chosen.

5. Will there be a change in takeoff power requirements? ☐ Yes ☐ No

If so, what types of aircraft are involved, i.e., general aviation propeller-driven versus large air carrier jets?

6. Will all changes occur above 3,000 feet above ground level (AGL)? ☐ Yes ☐ No

What is the lowest altitude change on newly proposed routes or on existing routes that will receive an increase in operations?

7. Will there be actions involving civil jet aircraft (heavier than 75,000 pounds gross weight) arrival procedures between 3,000–7,000 feet AGL or departures between 3,000–10,000 feet AGL? Attach a copy of the results of the noise screening analysis using the NIRS Screening Tool (NST), TARGETS Noise Plug-in, or other FAA-approved noise screening methodology.

8. If noise analysis was already performed using the FAA's Integrated Noise Model (INM) or Noise Integrated Routing System (NIRS), provide a summary of the results.

Purpose and Need

A. Describe the purpose and need for the proposed project. If detailed background information is available, summarize here and provide a copy as an attachment to this review.

B. What operational/economic/environmental benefits will result if this project is implemented?

1. If a delay reduction is anticipated, can the reduction be quantified? ☐ Yes ☐ No ☐ N/A

2. Can reduced fuel costs/natural energy consumption be quantified? ☐ Yes ☐ No ☐ N/A

If not quantifiable, describe the approximate anticipated benefits in lay terms.

C. Is the proposed project the result of a user or community request or regulatory mandate?

☐ Community Request ☐ Regulatory Mandate

If not, what necessitates this action?

Describe the Affected Environment

A. Provide a description of the existing land use in the vicinity of the proposed project.

B. Will the proposed project introduce air traffic over noise sensitive areas not now affected?

☐ Yes ☐ No

Will they be affected to a ☐ greater or ☐ lesser extent?

Note: An area is noise sensitive if aircraft noise may interfere with the normal activities associated with the use of the land. See FAA Order 1050.1E for full definition of noise sensitive areas.

C. Are wildlife refuge/management areas within the affected area of the proposed project?

☐ Yes ☐ No

If so, has there been any communication with the appropriate wildlife management regulatory (federal or state) agencies to determine if endangered or protected species inhabit the area? ☐ Yes ☐ No

1. At what altitude would aircraft overfly these habitats?

2. During what times of the day would operations be more/less frequent?

D. Are there cultural or scenic resources, of national, state, or local significance, such as national parks, outdoor amphitheaters, or stadiums in the affected area? ☐ Yes ☐ No

If so, during what time(s) of the day would operations occur that may impact these areas?

E. Has there been communication with air quality regulatory agencies to determine if the affected area is a non-attainment area (an area which exceeds the National Ambient Air Quality Standards for ozone, carbon monoxide, lead, particulate matter, sulfur dioxide, or nitrogen dioxide) or maintenance area (an area which was in non-attainment but subsequently upgraded to an attainment area) concerning air quality?

☐ Yes ☐ No

If yes, please explain:

F. Are there reservoirs or other public water supply systems in the affected area?

☐ Yes ☐ No

Community Involvement

Formal community involvement or public meetings/hearings may be required for the proposed project. Make a determination if the proposed project has the potential to become highly controversial. The effects of an action are considered highly controversial when reasonable disagreement exists over the project's risks of causing environmental harm. Opposition on environmental grounds by a Federal, State or local government agency or by a Tribe, or by a substantial number of the person affected by the action should be considered in determining whether reasonable disagreement regarding the effects of a proposed action exists (see FAA Order 1050.1E, paragraph 304i).

A. Have persons/officials who might have some need to know about the proposed project due to their location or by their function in the community been notified, consulted, or otherwise informed of this project?

☐ Yes ☐ No

1. Are local citizens and community leaders aware of the proposed project?

☐ Yes ☐ No

2. Are any ☐ opposed to or ☐ supporting it? If so, identify the parties and indicate the level of opposition and/or support.

a. If they are opposed, what is the basis of their opposition?

b. Has the FAA received one or more comments objecting to the proposed project on environmental grounds from local citizens or elected officials? ☐ Yes ☐ No

Has the FAA received one or more comments objecting to the proposed project on environmental grounds from local citizens or elected officials? ☐ Yes ☐ No

If so, state the nature of the comment and how the FAA was notified (e.g. resolution, Congressional, Public meeting/workshop, etc.).

1. Are the airport proprietor and users providing general support for the proposed project?

☐ Yes ☐ No

2. Is the proposed project consistent with local plans and development efforts?

☐ Yes ☐ No

3. Has there been any previous aircraft–related environmental or noise analysis, including
 - a. FAR Part 150 Studies, conducted at this location? ☐ Yes ☐ No
 - b. If so, was the study reviewed as a part of this initial review? ☐ Yes ☐ No ☐ N/A

Extraordinary Circumstances

The determination of whether a proposed action may have a significant environmental effect is made by considering any requirements applicable to the specific resource (see FAAO 1050.1E, Appendix A).

A. Will implementation of the proposed project result in any of the following? As stated in 1050.1E, paragraph 304, extraordinary circumstances exist when a proposed action involves any of the following circumstances AND may have a significant effect (40 CFR 1508.4).

1. An adverse effect on cultural resources protected under the National Historic Preservation Act of 1966, as amended (see FAA Order 1050.1E, paragraph 304a). ☐ Yes ☐ No ☐ Possibly

Comment:

2. An impact on properties protected under section 4(f) of the Department of Transportation Act (see paragraph 304b). ☐ Yes ☐ No ☐ Possibly

Comment:

3. An impact on natural, ecological (e.g. invasive species) or scenic resources of Federal, Tribal, State, or local significance (for example, Federally listed or proposed endangered, threatened, or candidate species or proposed or designated critical habitat under the Endangered Species Act); resources protected by the Fish and Wildlife Coordination Act; wetlands; floodplains; prime, unique, State, or locally important farmlands; energy supply and natural resources; wild and scenic rivers, including study or eligible river segments; and solid waste management. (See paragraph 304c.) ☐ Yes ☐ No ☐ Possibly

Comment:

4. A division or disruption of an established community; a disruption of orderly, planned development; or an inconsistency with plans or goals that have been adopted by the community in which the project is located (see paragraph 304d). ☐ Yes ☐ No ☐ Possibly

Comment:

5. An increase in congestion from surface transportation, by causing a decrease in the Level of Service below the acceptable level determined by the appropriate transportation agency (i.e., a highway agency). (See paragraph 304e.) ☐ Yes ☐ No ☐ Possibly

Comment:

6. An impact on noise levels of noise–sensitive areas (see paragraph 304f). ☐ Yes ☐ No ☐ Possibly

Comment:

7. An impact on air quality or a violation of local, State, Tribal, or Federal air quality standards under the Clean Air Act amendments of 1990 (see paragraph 304g). ☐ Yes ☐ No ☐ Possibly

Comment:

8. An impact on water quality, sole source aquifers, a public water supply system, or State or Tribal water quality standards established under the Clean Water Act and the Safe Drinking Water Act (see paragraph 304h). ☐ Yes ☐ No ☐ Possibly

Comment:

9. Effects on the quality of the human environment that are likely to be highly controversial on environmental grounds (see paragraph 304i). ☐ Yes ☐ No ☐ Possibly

Comment:

10. Likelihood of an inconsistency with any Federal, State, Tribal, or local law relating to the environmental aspects of the proposed action (see paragraph 304j). ☐ Yes ☐ No ☐ Possibly

Comment:

11. Likelihood of directly, indirectly, or cumulatively, creating a significant impact on the human environment (see paragraph 304k). ☐ Yes ☐ No ☐ Possibly

Comment:

Alternatives

A. Are there alternatives to the proposed project? ☐ Yes ☐ No

If yes, describe any alternatives to the proposed action.

B. Please provide a summary description of alternatives eliminated and why.

Mitigation

Are there measures, which can be implemented that might mitigate any of the potential impacts, i.e., GPS/FMS plans, NAVAIDS, etc.? ☐ Yes ☐ No ☐ N/A

Cumulative Impacts

What other projects (FAA, non-FAA, or non-aviation) are known to be planned, have been previously implemented, or are ongoing in the affected area that would contribute to the proposed project's environmental impact?

References/Correspondence

Attach written correspondence, summarized phone contacts using Memorandums for the File, etc.

Additional Preparers

The person(s) listed below, in addition to the preparer indicated on page 1, are responsible for all or part of the information and representations contained herein:

- A. Name
- B. Title
- C. Facility/Agency/Company
- D. Telephone Number
- E. Specific area of Responsibility

Facility/Service Area Conclusions

This initial review and analysis indicates that extraordinary circumstances or other reasons exist that would cause the responsible federal official to believe that the proposed project might have the potential for causing significant environmental impacts.

The undersigned have determined that the proposed project may not qualify as a categorically excluded action in accordance with FAA Order 1050.1E, and on this basis, recommend that further environmental review be conducted before the proposed project is implemented.

The undersigned recommend that the proposed project be submitted for environmental funding for preparation of an ☐ EA ☐ EIS ☐ Not sure – more analysis is needed.

Facility Manager Review/Concurrence

Signature: _____ Date: _____

Title: _____

Address: _____

Phone: _____ Fax: _____

Service Area Environmental Specialist Review/Concurrence

Signature: _____ Date: _____

Title: _____

Address: _____

Phone: _____ Fax: _____

Service Area Director Review/Concurrence, if necessary


Signature: _____ Date: _____

Title: _____

Address: _____

Phone: _____ Fax: _____

Appendix 6. Sample DOT FAA Categorical Exclusion Declaration

SAMPLE	
	<h3 style="margin: 0;">Federal Aviation Administration</h3> <h3 style="margin: 0;">Categorical Exclusion Declaration</h3>
Procedure Proponent: _____ Title: _____ Organization: _____	Date: ____/____/____
<u>Procedure Request Description:</u>	
<p><u>Declaration of Exclusion:</u> The FAA has reviewed the above referenced proposed action and it has been determined, by the undersigned, to be categorically excluded from further environmental documentation according to FAA Order 1050.1, "Environmental Impacts: Policies and Procedures." The implementation of this action will not result in any extraordinary circumstances in accordance with FAA Order 1050.1.</p> <p><u>Basis for this Determination:</u> This review was conducted in accordance with policies and procedures in Department of Transportation Order 5610.1, "Procedures for Considering Environmental Impacts" and FAA Order 1050.1.</p> <p>The applicable categorical exclusion(s) is/are:</p> <p>Recommended by: _____</p> <p>_____ Name – Title of Facility Manager</p> <p>Concurrence/Reviewed By: _____ Date: ____/____/____</p> <p>Title: _____</p>	
<p>The above flight procedure has been developed within the accepted parameters.</p> <p>Title: _____ Date: ____/____/____</p> <p>Approved by: _____ Date: ____/____/____</p> <p>Title: _____</p>	

