

# Modifying FAA Construction Specifications

Presented to: GoToWebinar Attendees

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Date: March 24, 2016



Federal Aviation  
Administration



# Presentation Objectives

- Describe the FAA's role in reviewing Airport Sponsor's construction specifications
- Discuss the different ways to construct airports with federal funding
- Describe the FAA's expectations for modifying FAA standards
- Modifying General Provisions



# Plans & Specifications Review



Federal Aviation  
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## Memorandum DEC 08 2014

Date:

To: All Regional Airports Division Managers

From: Michael J. O'Donnell, Director of Airport Safety and Standards, AAS-1

Prepared by: National Plans and Specifications Workgroup

Subject: Implementation Plan for FAA Review of Construction Plans and Specifications for AIP Funded Projects

### PURPOSE:

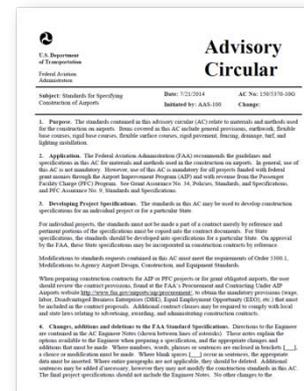
This Memorandum provides information to Regional and Airports District Office (ADO) Program Managers (PMs) and Engineers about the implementation plan for reviewing construction plans and specifications (P&S) for Airport Improvement Program (AIP) funded projects. The guidance in this memo will also be useful for reviewing projects financed with any other funding source such as Passenger Facility Charge (PFC) or local funding. The FAA review of P&S should be done at the 90% design stage (at a minimum) in order to capture the near-final design state before the project goes to bid. Additionally, it may also be advantageous to review the P&S during earlier submittals as well.

### BACKGROUND:

In order to standardize the review of construction P&S for AIP funded projects and to provide consistency among Regions and ADOs, the Office of Airports (ARP) 2011 Business Plan tasked the Office of Airport Safety and Standards (AAS) to "Complete a national template with risk-based criteria for the Federal Aviation Administration (FAA) review of plans and specifications and to establish the time frame for implementation."

In January 2011, the National Plans and Specifications Workgroup was established to develop a national template for reviewing AIP funded construction P&S. This template has been coordinated throughout the Regions for review and comment. In July 2012, AAS-100 released a DRAFT Engineering Brief (EB) #88, "Guidance for Reviewing Airport Construction Plans and Specifications" to obtain employee comments. All comments were

❑ "AC 150/5370-10 latest revision used and any modifications identified"



❑ "Modification to Design Standards documented and approved"



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# AC 150/5370-10G

## Standards for materials and methods used for construction on airports.

- Earthwork
- Flexible base courses
- Rigid base courses
- Flexible surface courses
- Rigid pavement
- Fencing
- Drainage
- Turf
- Lighting Installation



U.S. Department  
of Transportation

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## Advisory Circular

Subject: Standards for Specifying  
Construction of Airports

Date: 7/21/2014

AC No: 150/5370-10G

Initiated by: AAS-100

Change:

**1. Purpose.** The standards contained in this advisory circular (AC) relate to materials and methods used for the construction on airports. Items covered in this AC include general provisions, earthwork, flexible base courses, rigid base courses, flexible surface courses, rigid pavement, fencing, drainage, turf, and lighting installation.

**2. Application.** The Federal Aviation Administration (FAA) recommends the guidelines and specifications in this AC for materials and methods used in the construction on airports. In general, use of this AC is not mandatory. However, use of this AC is mandatory for all projects funded with federal grant monies through the Airport Improvement Program (AIP) and with revenue from the Passenger Facility Charge (PFC) Program. See Grant Assurance No. 34, Policies, Standards, and Specifications, and PFC Assurance No. 9, Standards and Specifications.

**3. Developing Project Specifications.** The standards in this AC may be used to develop construction specifications for an individual project or for a particular State.

For individual projects, the standards must not be made a part of a contract merely by reference and pertinent portions of the specifications must be copied into the contract documents. For State specifications, the standards should be developed into specifications for a particular State. On approval by the FAA, these State specifications may be incorporated in construction contracts by reference.

Modifications to standards requests contained in this AC must meet the requirements of Order 5300.1, Modifications to Agency Airport Design, Construction, and Equipment Standards.

When preparing construction contracts for AIP or PFC projects or for grant obligated airports, the user should review the contract provisions, found at the FAA's Procurement and Contracting Under AIP Airports website <http://www.faa.gov/airports/aip/procurement/>, to obtain the mandatory provisions (wage, labor, Disadvantaged Business Enterprises (DBE), Equal Employment Opportunity (EEO), etc.) that must be included in the contract proposals. Additional contract clauses may be required to comply with local and state laws relating to advertising, awarding, and administering construction contracts.

**4. Changes, additions and deletions to the FAA Standard Specifications.** Directions to the Engineer are contained in the AC Engineer Notes (shown between lines of asterisks). These notes explain the options available to the Engineer when preparing a specification, and the appropriate changes and additions that must be made. Where numbers, words, phrases or sentences are enclosed in brackets [ ], a choice or modification must be made. Where blank spaces [ ] occur in sentences, the appropriate data must be inserted. Where entire paragraphs are not applicable, they should be deleted. Additional sentences may be added if necessary, however they may not modify the construction standards in this AC. The final project specifications should not include the Engineer Notes. No other changes to the



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# 4 Methods to Construct with Federal Funds



**FAA Specification**  
**I.A.W. AC 150/5370-10**



**FAA Approved Modified Specification**  
**I.A.W. FAA Order 5300.1F**



**FAA Approved State Highway Spec.**  
**I.A.W. 49 U.S. Code § 47114**



**FAA Approved State Standard**  
**I.A.W. 49 U.S. Code § 47105**



# 4 Ways to Construct with Federal Funds



FAA Specification  
I.A.W. AC 150/5370-10



FAA Approved Modified Specification  
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FAA Approved State Highway Spec.  
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FAA Approved State Standard  
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# FAA Approved Modified Specification I.A.W. FAA Order 5300.1F

**ORDER**

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

5300.1F

6/30/00

**SUBJ: MODIFICATIONS TO AGENCY AIRPORT DESIGN, CONSTRUCTION, AND EQUIPMENT STANDARDS**

**1. PURPOSE.** This Order establishes approval level for modifications to standards applicable to airport design, construction and equipment procurement projects.

**2. DISTRIBUTION.** This Order is distributed to division level in the Offices of Airport Planning and Programming, Airport Safety and Standards, Air Traffic, Airway Facilities, and Flight Standards Services, to the division level in the regional Airports, Air Traffic, Airway Facilities, and Flight Standards Divisions, and to all Airport District and Field Offices.

**3. CANCELLATION.** Order 5300.1E, *Approval Level for Modification of Agency Airport Design and Construction Standards*, dated 10/22/91, is canceled.

**4. DEFINITIONS.**

a. "Modification to standards" means any change to FAA standards, other than dimensional standards for runway safety areas, applicable to an airport design, construction, or equipment procurement project that results in lower costs, greater efficiency, or is necessary to accommodate an unusual local condition on a specific project, when adopted on a case-by-case basis.

b. Regional or State standards are alternative standards that may be used within the subject Region or State for airport development projects without further documentation.

c. "Materials standards" are those standards that apply to the procurement or approval of materials.

d. "Construction standards as they relate to materials" are those standards that apply to installation methods and tolerances.

**5. EXEMPTIONS.** Exemptions from 14 CFR Part 139, *Certification and Operations: Land Airports Serving Certain Air Carriers* (Part 139) are not covered by this Order.

**6. BACKGROUND.** Various laws and regulations require conformance with current FAA standards, as detailed below. Modifications to national standards may be considered for a specific project where unusual conditions preclude compliance with national airport design, construction, materials, or equipment standards.

a. **Airport and Airway Improvement Act.** The Airport and Airway Improvement Act (The Act), recodified at 49 USC 47105(b)(3) states in part, "An application for a project grant under this subchapter may propose airport development only if the development complies with standards the Secretary prescribes or approves, including standards for site location, airport layout, site preparation, paving, lighting, and safety of approaches."

b. **Airport Improvement Program.** To carry out the intent of the Act, one of the standard grant assurances requires airport sponsors to "...carry out the project in accordance with policies, standards, and specifications approved by the Secretary, including but not limited to, the advisory circulars listed in the Current FAA Advisory Circulars for AIP Projects, ... and in accordance with applicable state policies, standards, and specifications approved by the Secretary." In addition, Order 5100.38, *AIP Handbook*, paragraph 35, provides that "... a sponsor is required to comply with all appropriate technical guidelines incorporated into identified AC's; and these standards become mandatory for the project being funded. Standards in effect on the date of allocation of AIP funds to a project apply to that project. Standards which become effective after the date of allocation may be applied to the project by mutual agreement between the FAA and the sponsor."

c. **Passenger Facility Charges.** 14 CFR Part 158, *Passenger Facility Charges*, Appendix A requires, "The public agency hereby assures and certifies, with respect to this project that: ...It will carry out the project in accordance with FAA airport design, construction, and equipment standards and specifications contained in advisory circulars current on the date of project approval."

Distribution: A-W(PP/AS/AT/AF/FS)-2; A-X(AS/AT/AF/FS)-2; A-FAS-1(STD)

Initiated by: AAS-100

Modifications to materials standards shall be made only when locally available materials cannot meet the requirements of that standard..."

Modifications to construction methods standards shall be made only when they will result in cost savings and/or greater efficiency,...

Modifications to the general provisions of AC 150/5370-10, Standards for Specifying Construction of Airports, permitted to ensure conformance with local laws and regulations.



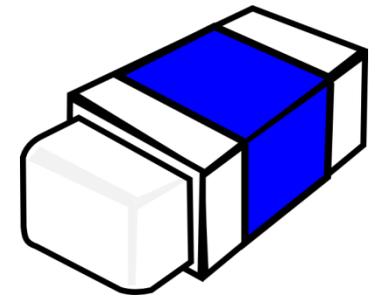
# Requests to Modify Quality Control

- (1) Quality control criteria include all the tests performed to determine if adjustments to operations are necessary to stay within specification limits.
- (2) Acceptance testing includes all criteria and the tests performed to determine acceptability of the material or finished product.



# Changes, Additions and Deletions to the FAA Standard Specifications.

- Directions to the Engineer are contained in the AC Engineer Notes
- Engineer Notes explain the options available to the Engineer
- Final project specifications are not to include the Engineer Notes
- Where entire paragraphs are not applicable, they should be deleted.
- Additional sentences may be added if necessary, **however they may not modify the construction standards in this AC.**
- No other changes permitted, unless the Engineer has received the approval of the FAA.



# Minimum Requirements Prior to FAA Review

- Completed MOS form along with modified specification
- Airfield map clearly depicting locations.
- Reason for the MOS request
- Assurance that the MOS will provide a product that will meet FAA standards for acceptance and that the finished product will perform for its intended design life (historical data)
- FAARFIELD analysis when modifying materials.
- All referenced material must be provided in the MOS package



# Utilize Track Changes



## MATERIALS

**610-2.1 General.** Only approved materials, conforming to the requirements of these specifications, shall be used in the work. Materials may be subject to inspection and tests at any time during their preparation or use. The source of all materials shall be approved by the Engineer before delivery or use in the work. Representative preliminary samples of the materials shall be submitted by the Contractor, when required, for examination and test. Materials shall be stored and handled to ensure preservation of their quality and fitness for use and shall be located to facilitate prompt inspection. All equipment for handling and transporting materials and concrete must be clean before any material or concrete is placed in them.

The use of pit-run aggregates shall not be permitted unless the pit-run aggregate has been screened and washed, and all fine and coarse aggregates stored separately and kept clean. The mixing of different aggregates from different sources in one storage stockpile or alternating batches of different aggregates shall not be permitted.

**n. Reactivity.** Fine and Coarse aggregates to be used in all concrete shall be evaluated and tested by the Contractor for alkali-aggregate reactivity in accordance with both ASTM C1260 and C1567. Aggregate and mix proportion reactivity tests shall be performed for each project.

(1) Coarse and fine aggregate shall be tested separately in accordance with ASTM C1260. The aggregate shall be considered innocuous if the expansion of test specimens, tested in accordance with ASTM C1260, does not exceed 0.10% at 28 days (30 days from casting).

(2) Combined coarse and fine aggregate shall be tested in accordance with ASTM C1567, modified for combined aggregates, using the proposed mixture design proportions of aggregates, cementitious materials, and/or specific reactivity reducing chemicals. If lithium nitrate is proposed for use with or without supplementary cementitious materials, the aggregates shall be tested in accordance with Corps of Engineers (COE) CRD C662. If lithium nitrate admixture is used, it shall be nominal 30% ±0.5% weight lithium nitrate in water.

(3) If the expansion of the proposed combined materials test specimens, tested in accordance with ASTM C1567, modified for combined aggregates, or COE CRD C662, does not exceed 0.10% at 28 days, the proposed combined materials will be accepted. If the expansion of the proposed combined materials test specimens is greater than 0.10% at 28 days, the aggregates will not be accepted unless adjustments to

## Track changes while you edit

1. Open the document that you want to revise.
2. On the Review tab, in the Tracking group, click the Track Changes button.
3. Make the changes that you want.



# Submitting MOS Requests

## TODAY

**FAA GREAT LAKES REGION  
MODIFICATION OF AIRPORT DESIGN STANDARDS  
COMPLETE FORM IN CONJUNCTION WITH THE USER GUIDE.**

BACKGROUND		
1. AIRPORT:	2. LOCATION (CITY/STATE):	3. LOC ID:
4. EFFECTED RUNWAY/TAXIWAY: --- PIR --- NPI --- VISUAL	5. APPROACH (EACH RUNWAY):	6. AIRPORT REF. CODE (ARC):
7. DESIGN AIRCRAFT (EACH RUNWAY/TAXIWAY):		
MODIFICATION OF STANDARDS		
8. TITLE OF STANDARD(S) BEING MODIFIED (CITE REFERENCE DOCUMENT)		
9. STANDARD REQUIREMENT:		
10. DESCRIPTION OF PROPOSED MODIFICATION:		
11. EXPLAIN WHY STANDARD(S) CANNOT BE MET:		
12. DISCUSS ALL VIABLE ALTERNATIVES:		
13. ASSURANCE THAT MEY WILL PROVIDE AS OUTLINED IN THE "USER GUIDE":		

**ATTACH ADDITIONAL SHEETS AS NECESSARY - INCLUDE SKETCH/PLAN**

AGL\_MODIFICATION TO STANDARDS REQUEST FORM Page 1 of 3  
Revised 2/19/2016

## NEAR-FUTURE

The screenshot shows the FAA Airports GIS Program website. The page title is "FAA Airports GIS Program". It features a navigation menu on the left with options like "Login", "News/Events/Publications", "Airports GIS Online Help", "Airports GIS", "Training/Workshops", "FAQs", "Airports", "Steps to Follow", "Airport Request", "Airport Layout", "Airport Visual Aids", "Airport Design Tools", "Workshop/FAA Coordinator", and "What's New". The main content area includes a "Welcome" message, a "Guided by Advisory Circulars" section, and a "Please send digital imagery" section. A blue callout bubble with white text says: "For access to Airports GIS enter your regular email address here. It does not need to be a Federal Email Address". The page also has a "Sign In" section with a "Use Your Federal Email Address" field and a "Use Your PIV Card" section. The footer contains contact information for the Airports GIS Help Desk.

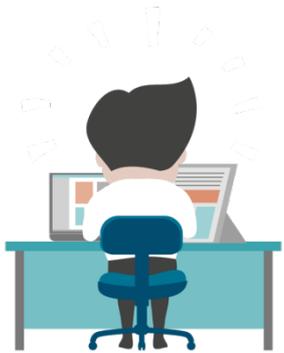
[http://www.faa.gov/airports/great\\_lakes/engineering/](http://www.faa.gov/airports/great_lakes/engineering/)

<https://airports-gis.faa.gov>

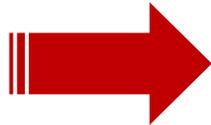


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# Approval Authority



**ADO**



**REGION**

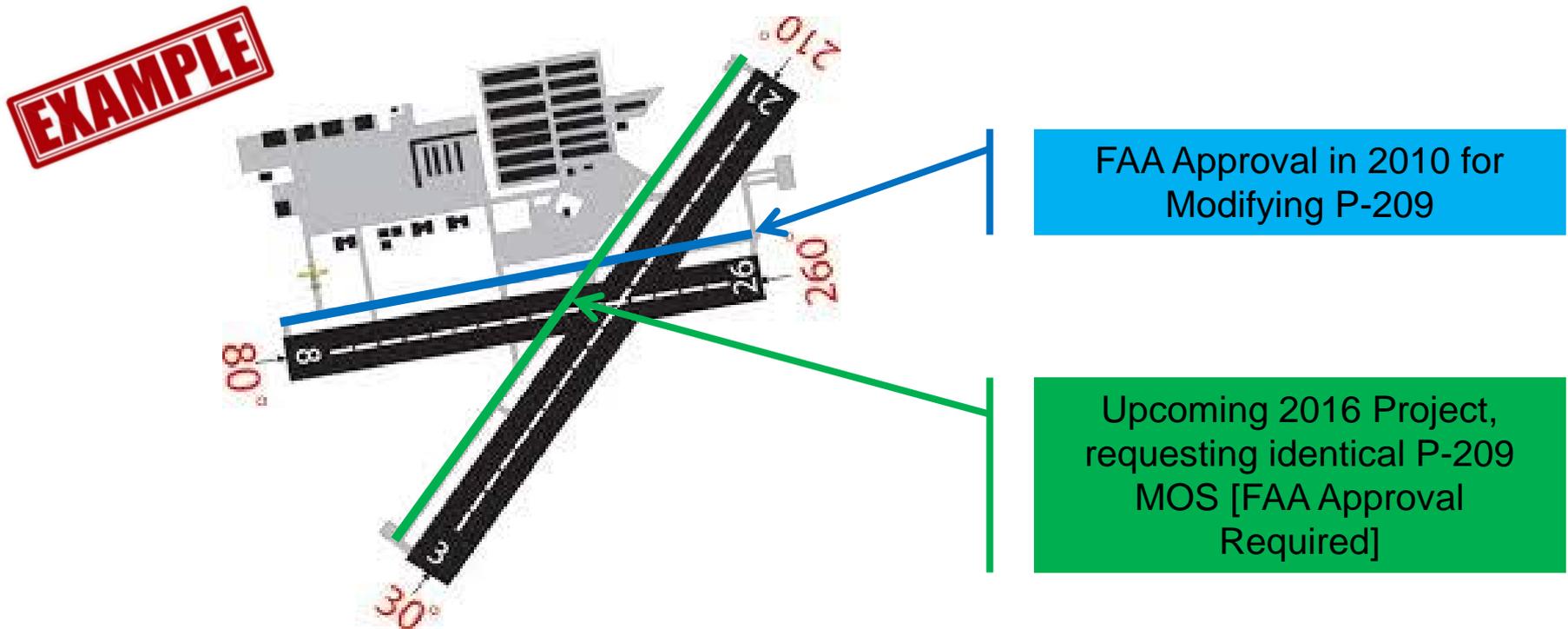


**HQ's**



# Clarification: Prior Approval

MOS requests is AIP project specific. Receiving prior approval, does not relieve the Airport Sponsor in submitting future MOS.



# ***Clarification:*** **Signature Page**

As the grant recipient, the Airport Sponsor is required to sign the modification to standard request, not their consulting firm.

Signature:



# *Clarification:*

## **Airport Access/Perimeter Roads**

**Roads that are not exposed to aircraft loads can be constructed using state highway specifications when funded with federal monies without submitting a modification to standards.**



# 4 Ways to Construct with Federal Funds



FAA Specification  
I.A.W. AC 150/5370-10



FAA Approved Modified Specification  
I.A.W. FAA Order 5300.1F



FAA Approved State Highway Spec.  
I.A.W. 49 U.S. Code § 47114



FAA Approved State Standard  
I.A.W. 49 U.S. Code § 47105



# 49 U.S. Code § 47114 – Apportionments

(5) Use of state highway specifications.—

(A) In general.— The Secretary may permit the use of State highway specifications for airfield pavement construction using funds made available under this subsection at nonprimary airports with runways of 5,000 feet or shorter serving aircraft that do not exceed 60,000 pounds gross weight if the Secretary determines that—

- (i) safety will not be negatively affected; and
- (ii) the life of the pavement will not be shorter than it would be if constructed using Administration standards.



# 4 Ways to Construct with Federal Funds



FAA Specification  
I.A.W. AC 150/5370-10



FAA Approved Modified Specification  
I.A.W. FAA Order 5300.1F



FAA Approved State Highway Spec.  
I.A.W. 49 U.S. Code § 47114



**FAA Approved State Standard**  
**I.A.W. 49 U.S. Code § 47105**



# 49 U.S. Code § 47105 – Project Grant Applications

(c) State Standards for Airport Development.— The Secretary may approve standards that a State prescribes for airport development at **nonprimary public-use airports** in the State. On approval under this subsection, a State's standards apply to the nonprimary public-use airports in the State instead of the comparable standards prescribed by the Secretary under subsection (b)(3) of this section. The Secretary, or the State with the approval of the Secretary, may revise standards approved under this subsection.



# General Provisions

7/21/2014

AC 150/5370-10G

## Part 1 – General Provisions

### Section 10 Definition of Terms

Whenever the following terms are used in these specifications, in the contract, or in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be interpreted as follows:

**10-01 AASHTO.** The American Association of State Highway and Transportation Officials, the successor association to AASHO.

**10-02 Access road.** The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public highway.

**10-03 Advertisement.** A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.

**10-04 Airport Improvement Program (AIP).** A grant-in-aid program, administered by the Federal Aviation Administration (FAA).

**10-05 Air operations area (AOA).** For the purpose of these specifications, the term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.

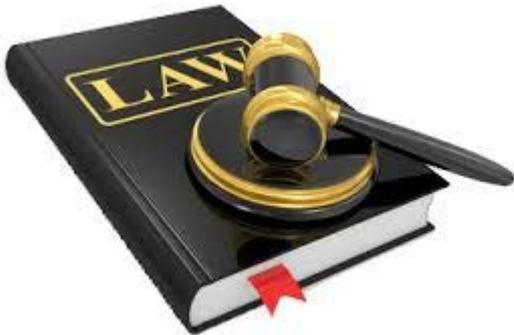
**10-06 Airport.** Airport means an area of land or water which is used or intended to be used for the



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*“Modifications to the general provisions of AC 150/5370-10, Standards for Specifying Construction of Airports, should be made **only** to make them consistent with local laws and regulations.”*

- FAA Order 5300.1F



# Request to Modify General Provisions

- 1) Request form for a modification to standard. Form is available for download at [http://www.faa.gov/airports/great\\_lakes/engineering/](http://www.faa.gov/airports/great_lakes/engineering/)
- 2) Modified Microsoft Word version of the revised general provisions. Document is available for download at [http://www.faa.gov/airports/resources/advisory\\_circulars/index.cfm/go/document.current/documentNumber/150\\_5370-10](http://www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.current/documentNumber/150_5370-10)
  - a. Document is to provide track changes which clearly identify text that has been added and/or deleted.
  - b. Document is to provide a comment for each change indicating one of the following:
    - i. **Category A** → Change due to local law and regulation
    - ii. **Category B** → Change does not modify the FAA's intent
    - iii. **Category C** → Change modifies the FAA's intent (additional justification is required)



# Presentation Objectives

- ✓ Describe the FAA's role in reviewing Airport Sponsor's construction specifications
- ✓ Discuss the different ways to construct airports with federal funding
- ✓ Describe the FAA's expectations for modifying FAA standards
- ✓ Modifying General Provisions





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