

Cancelled - See 150/5300.4
150/5100-3 00-21

Federal Aviation Agency



AC NO: AC 150/5100-1 CH 1
EFFECTIVE : 6/30/65

CHANGE

SUBJECT : CH 1 TO ADVISORY CIRCULAR NO. AC 150/5100-1;
SUBJ: INFORMATION ON FEDERAL-AID AIRPORT PROGRAM (FAAP).

1. PURPOSE. This change provides for application of utility airport approach slope ratios and revises clear zone widths to conform with FAR Part 77.
2. CHANGES.
 - a. Subparagraph 3c. (Page 5) Modified to include the determination that 20:1 approach slope applies to all runways designed according to utility airport curves.
 - b. Figure 8. (Page 10, Appendix) Revised as follows:
 - (1) Item 10. The inner width of the clear zone shown in Column A has been changed from 200 to 250.
 - (2) Item 11. The outer width of the clear zone shown in Column A has been changed from 400 to 450.
 - (3) Item 9. A footnote has been added reading as follows, "4 = Maximum length based on level or ascending terrain within the clear zone."
3. PAGE CONTROL CHART.

PAGE CONTROL CHART			
Remove Pages	Dated	Insert Pages	Dated
5	4/15/65	5	6/30/65
6	4/15/65	6	4/15/65
APPENDIX 1		APPENDIX	
9	4/15/65	9	4/15/65
10	4/15/65	10	6/30/65

Federal Aviation Agency



AC NO: AC 150/5100-1

EFFECTIVE :
April 15, 1965

SUBJECT : INFORMATION ON FEDERAL-AID AIRPORT PROGRAM (FAAP)

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1. **PURPOSE.** This Advisory Circular provides:
 - a. Advice on the type of airport projects considered for Federal financial assistance.
 - b. Information on how to request Federal financial assistance, what should be submitted and the addresses of the Federal Aviation Agency District Airport Engineers to whom requests should be made.
 - c. Information on dimensional standards for airports, the criteria used in determining what runway lengths and widths are considered for programming and charts for general aviation airport runways.
 2. **HOW TO GET THIS CIRCULAR.** Additional copies of this Advisory Circular may be obtained without charge from the Federal Aviation Agency, Distribution Section, HQ-438, Washington, D. C. 20553.
 3. **FAAP ELIGIBILITY REQUIREMENTS.** Additional information on the FAAP is contained in Part 151 of the Federal Aviation Regulations (14 CFR 151).
 4. **FEDERAL AIRPORT ACT.** The Federal Airport Act places statutory responsibility in the Administrator of the Federal Aviation Agency for assisting, within the limit of funds available, in bringing about a system of public airports adequate to anticipate and meet the needs of civil aeronautics. The primary purpose of the Federal-aid Airport Program is to assist each community, irrespective of population, which has a substantial aeronautical requirement, in developing a new or bringing its existing civil airport to a standard compatible with the present and future needs of civil aeronautics so that such airport will be part of "a system of public airports adequate to anticipate and meet the needs of civil aeronautics."
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This Program is not limited to any class or category of public airports. However, financial assistance under the Program is available only to public agencies, such as states, counties, municipalities and other political subdivisions and agencies. Federal grants under the Act are on a matching basis with the Federal Government generally providing 50 percent of the cost of the airport development and the local public agency the remaining 50 percent.

5. PROJECTS CONSIDERED FOR PROGRAMMING.

a. Airports Used by All Segments of Civil Aviation. Development on airports used by both air carrier and general aviation is considered for programming, within the limitations of the National Airport Plan, on the basis of the requirements under the Federal Aviation Agency airport design criteria. (See Appendix 1 for reference to design criteria.)

(1) New or Replacement Airports. Federal participation in the construction of new airports is considered in communities where (a) the volume of air traffic now or projected for the future exceeds the potential capacity of the existing airport; (b) the existing airport cannot economically be improved to handle its air traffic safely and adequately; (c) the area lacks an airport but facts show the need for one; or (d) one new airport can serve one or more communities more efficiently than existing facilities. The majority of communities can be adequately served by one properly planned, well-developed civil airport. It is desirable that new or replacement airports are located to best serve area or regional needs. Joint ownership or support by two or more communities is preferable in these cases. The following are used as guides in determining the need for new airports:

(a) An airport serving the community can no longer efficiently and safely accommodate all types of operations due to total volume. Annual air carrier operations in excess of 30,000 are used as a guide to determine when a study should be made as to whether a separate airport is needed for general aviation.

(b) There is no existing airport with the capacity or potential for development to serve the anticipated aeronautical requirements of the area.

- (2) Area or Regional Airports. Communities are urged to give careful consideration to the designation of one airport to serve two or more communities located in fairly close proximity to each other. This is for the purpose of obtaining improved service and economy in airport development, operation and maintenance. These are important factors to be considered by sponsors in preparation of Requests for Aid under the Federal-aid Airport Program.
 - (3) Airports to Relieve Congestion. The Federal Airport Act authorizes a special Discretionary Fund for the development of airports, the primary purpose of which is for use by general aviation and thereby relieve congestion at airports with a high density of traffic by other segments of aviation. As used herein, the term "general aviation airport" means an airport, the primary purpose of which is for use by general aviation. The term is not restricted to mean an airport used by general aviation alone.
 - (4) Airports for Recreational Areas. Airports to serve national forests, national or state parks, recreational and resort areas which would generate sufficient aeronautical activity during the resort season to warrant an airport as indicated in the National Airport Plan and/or for the protection of these areas will be considered for programming.
 - (5) Long Range Planning. Federal-aid Airport Program funds generally are available only to provide long-range solutions to community airport problems. The development or improvement of a facility which may be replaced in a very few years, or other short-range solution, will be considered only when the facts, balanced against the amount of funds required, justify such a solution.
- b. Airports Used by General Aviation Exclusively. The minimum criteria for evaluating airport development at airports used by aircraft of 12,500 pounds or less in VFR conditions is AC 150/5300-1, VFR Airports, November 1963. However, the Agency recommends that the standards of the Basic Utility (Stage I) airport, as described in (2) below, be used except in those instances where the airport was planned for development under VFR standards prior to April 1, 1965, or justification exists for initial development in accordance with VFR standards. The facility requirements for airports used by general aviation are determined on the basis of the following:
- (1) Established Conditions. When the substantial use of a particular model of a critical aircraft can be clearly demonstrated, the publications referenced in Appendix 1 are used to determine the dimensional standards of facilities required to accommodate that aircraft.

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- (2) Undetermined Conditions. Where substantial requirements for specific critical aircraft at an airport used by general aviation cannot be readily demonstrated, the following functional groups are the bases for determining required facilities:
- (a) Basic Utility (Stage I). This stage of the Basic Utility type accommodates most single engine and some light twin-engine aircraft in the general aviation fleet which comprise about 75 percent of the fleet. This stage meets the need of recreational flying, instructional flying, and that portion of business flying which utilizes these light aircraft. The justification for this stage of the development includes a statement of aeronautical need and a showing of site potential (physical) for Stage II development with an analysis of community and economic growth indicating a future air transportation requirement for at least a Basic Utility (Stage II) airport. Airport boundaries for airports in the Basic Utility group are established on the basis of dimensions required for a Stage II development.
 - (b) Basic Utility (Stage II). This stage of the Basic Utility type accommodates about 95 percent of the general aviation fleet and meets all general aviation needs except turbine-powered types, transport types, and a few types of critical twin-engine aircraft over 8,000 pounds gross weight. The justification for the Basic Utility (Stage II) airport includes an analysis of community and economic growth indicating a future air transportation requirement for this type airport.
 - (c) General Utility. This group accommodates all general aviation needs except transport type and most turbine-powered aircraft. Justification for this group of airports is similar to that of the Basic Utility group (Stage II). In addition, however, it includes evidence that there is a substantial requirement for the use of the airport by aircraft over 8,000 pounds gross weight.
 - (d) Dimensional Standards. Dimensional standards for these types of airports are set forth on Figures 1 through 8 of Appendix 1.

- 1 Runway lengths are determined from the curve for each type of airport as follows:

Basic Utility (Stage I) - Figure 5

Basic Utility (Stage II) - Figure 6

General Utility - Figure 7

These figures include an allowance for effective gradient and no further correction is needed.

- 2 Runway widths for the appropriate functional group are in accordance with the limits of that group as shown in Figure 8.

- 3 Other design components are shown as follows:

- a Figure 1 is a typical airport layout showing the relationship between landing and takeoff facilities, taxiway, property line and approach surfaces.

- b Figure 2 is a typical cross section of the runway and airport surfaces.

- * c Figure 3 is a plan and profile of airport surfaces. The indicated approach surface slope of 20:1 applies to all runways designed according to the utility airport curves. This is consistent with FAR Part 77 in that the "corrected runway length" (that is, at mean sea level and standard temperature of 59° F and zero gradient) would not exceed 3200 feet. *

- d Figure 4 is a longitudinal profile of grade limitations.

- e Figure 8 specifies widths, clearances and other dimensional criteria.

- (e) Expansion Between Groups. For an airport in the Basic Utility group, the runway length is established in accordance with the limits of that group as determined from the appropriate curve. If it is anticipated that the particular airport will be expanded to the General Utility group, the lateral clearance dimensional standards for that group, as listed in Figure 8, Appendix 1, are applied.

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6. TAXI TURNAROUNDS. Taxi turnarounds for runways not served by a taxiway system are desirable and recommended. Federal Aviation Agency Advisory Circular, AC 150/5335-1, describes the recommended standards.


Cole Morrow, Director
Airports Service

DIMENSIONAL STANDARDS FOR AIRPORTS

Utility Airports. The dimensional standards with guidance material for the utility airport are set forth in this Appendix - Figures 1 - 8.

All Airports Except Utility Airports. The dimensional standards and guidance for designing all airports other than utility airports are established through the use of aircraft performance curves and the FAA design criteria. The basic guidance used in establishing airport requirements is "FAA Airports Design Manual." This Manual, which is out of print, is now being revised to bring it within the Agency's Advisory Circular System without extensive change in substance. Publications on airport location, airport configuration, runway length requirements for airport design, aircraft data and aircraft obstruction standards will be issued as Advisory Circulars in the near future.

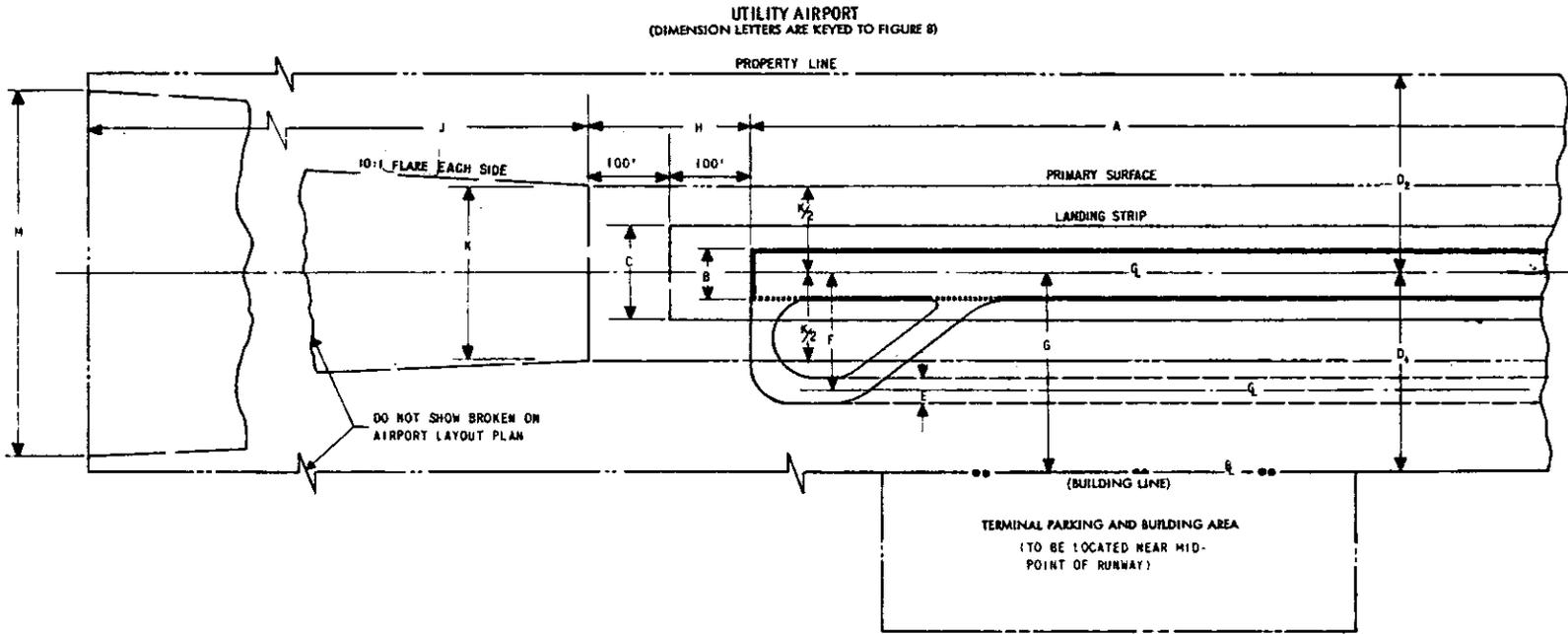
The following advisory circulars are available and may be obtained from the FAA, Distribution Section, HQ-438, Washington, D. C. 20553; however, they are subject to frequent change. A list of current advisory circulars is published periodically and should be checked to assure the latest applicable circular is available.

1. AC 150/5300-1, VFR Airports.
2. AC 150/5320-6, Airport Paving.
3. AC 150/5335-1, Airport Taxiways.
4. AC 150/5335-2, Airport Aprons.
5. AC 150/5340-1, Marking of Serviceable Runways and Taxiways.
6. AC 150/5340-5, Segmented Circle Airport Marking System.
7. AC 150/5340-2, Airport Lighting Control.
8. AC 150/5345-1, Approved Airport Lighting Equipment.
9. AC 150/5345-2, Specifications for L-810 Obstruction Lights.
10. AC 150/5345-8, Specifications for L-840 Low Intensity Runway, Landing Strip and Taxiway Light.
11. AC 150/5345-12, Specifications for L-801 Beacon for Small Airports.
12. AC 150/5345-14, Specifications for L-827 "A", Frame Hinged Support for 12' Wind Cone.

In addition to these advisory circulars the following publications are applicable and may be obtained at the price listed from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 24002. Check or money order must accompany order:

1. Federal Aviation Regulations, Part 151, as amended, 35 cents per copy.
2. AC 150/5370-1 Standard Specifications for the Construction of Airports, \$2.75.
3. AC 150/5370-1 CH 1 - Supplement No. 2 to Standard Specifications for the Construction of Airports, 35¢.

The advice of the cognizant District Airport Engineer should also be sought on current standards and guidance applicable to any specific airport development contemplated by an airport owner.

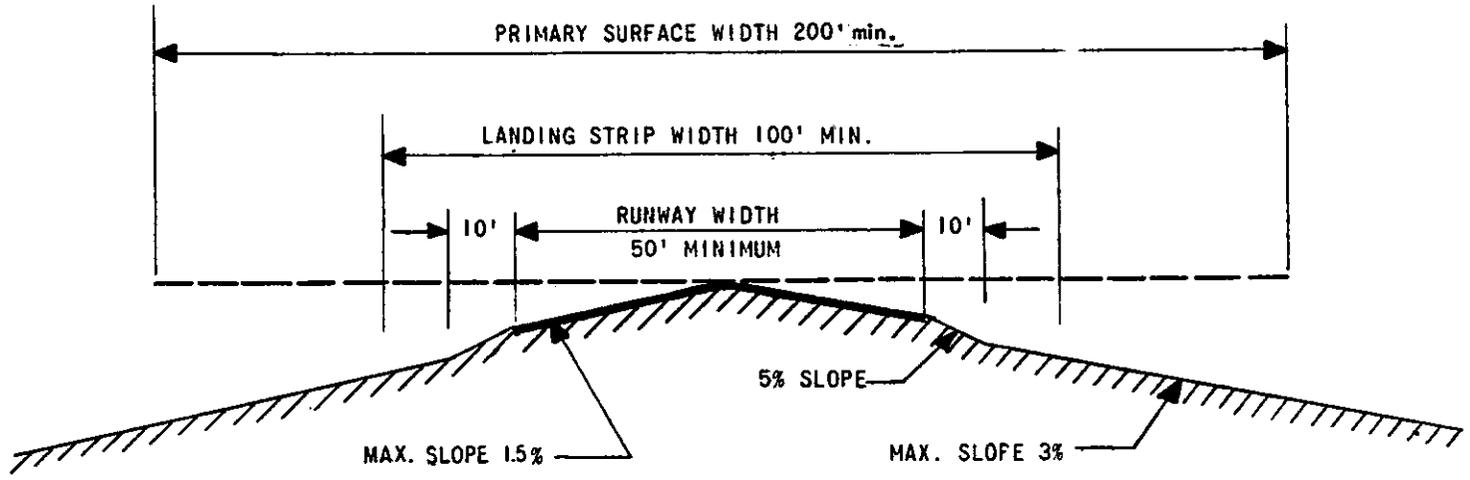


TYPICAL AIRPORT LAYOUT

NOT TO SCALE

FIGURE 1. TYPICAL AIRPORT LAYOUT

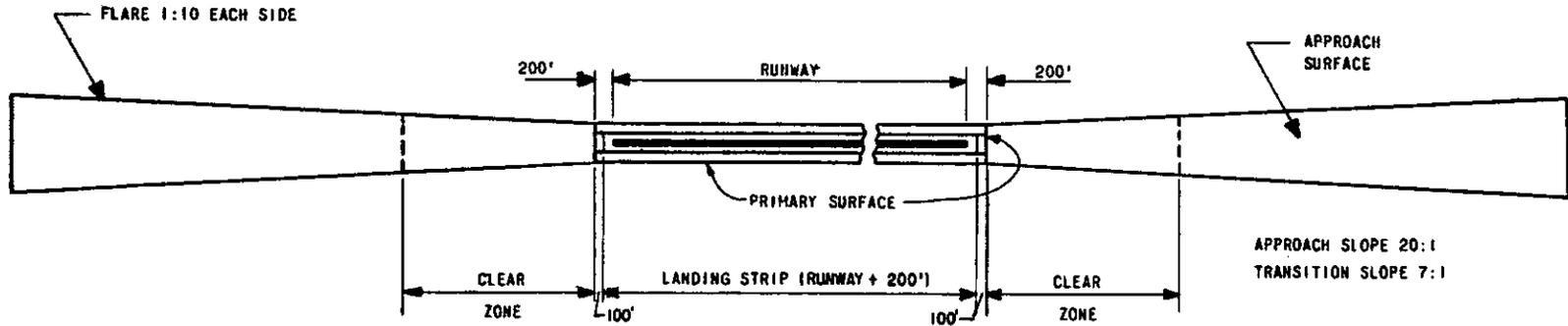
UTILITY AIRPORT



TYPICAL CROSS SECTION

FIGURE 2. TYPICAL CROSS SECTION

UTILITY AIRPORT



P L A N

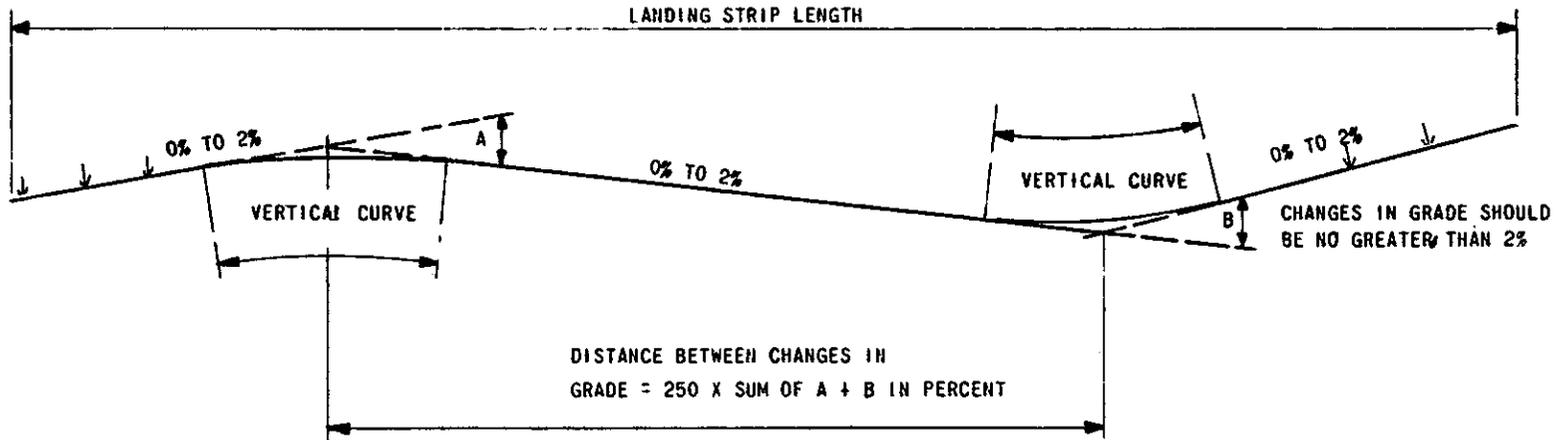


P R O F I L E

A I R P O R T S U R F A C E S

FIGURE 3. PROFILE AIRPORT SURFACES

UTILITY AIRPORT



GRADE LIMITATIONS IN LENGTH OF LANDING STRIP

Length of vertical curves will not be less than 300' for each 1% grade change, except that no vertical curve will be required when grade change is less than 0.4%.

Minimum sight distance, which is the unobstructed line of sight from any point five feet above the landing strip to any other point also five feet above the landing strip shall be one-half the landing strip length or 2000', whichever is less.

FIGURE 4. GRADE LIMITATIONS IN LENGTH OF LANDING STRIP

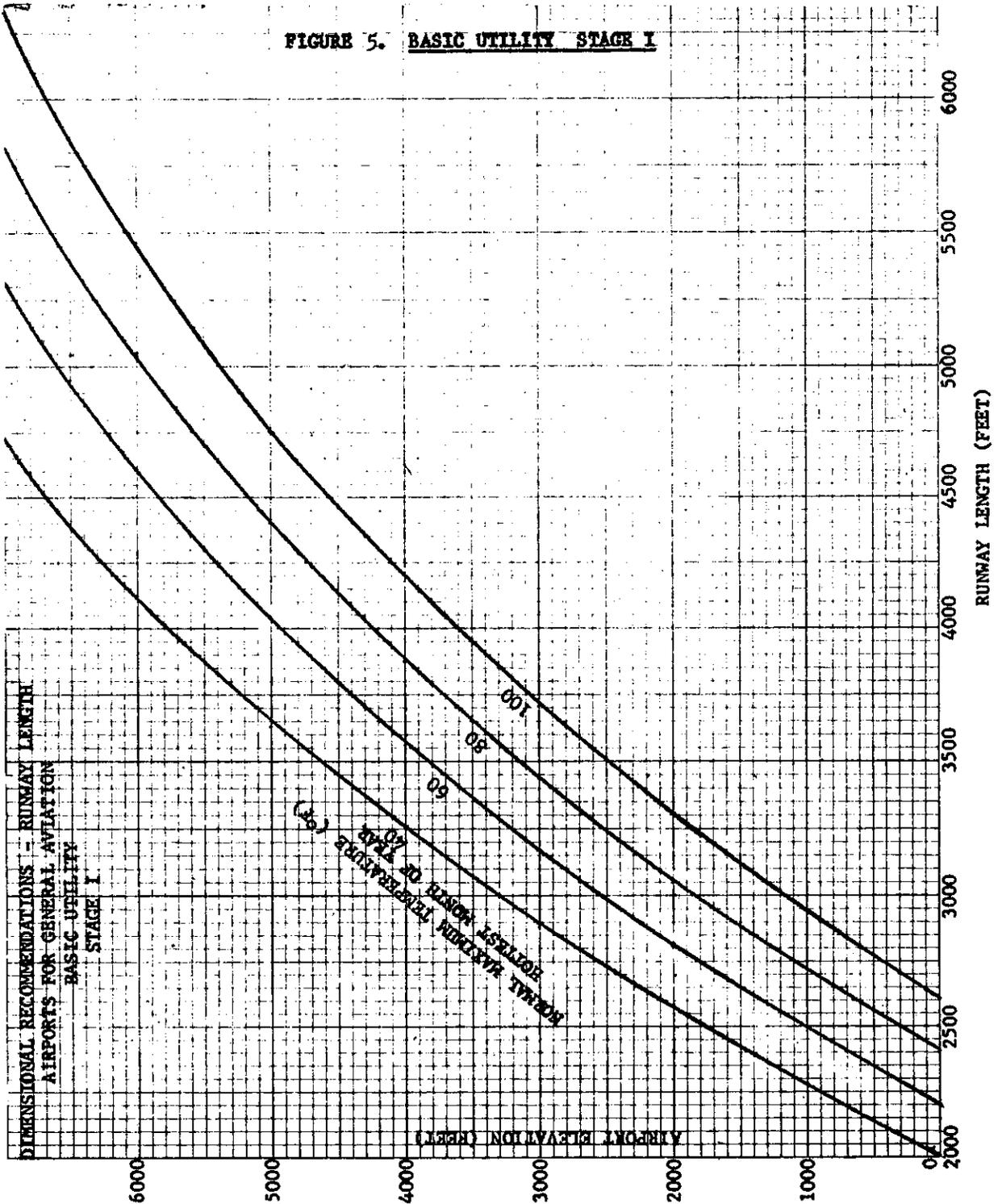


FIGURE 5. BASIC UTILITY STAGE I

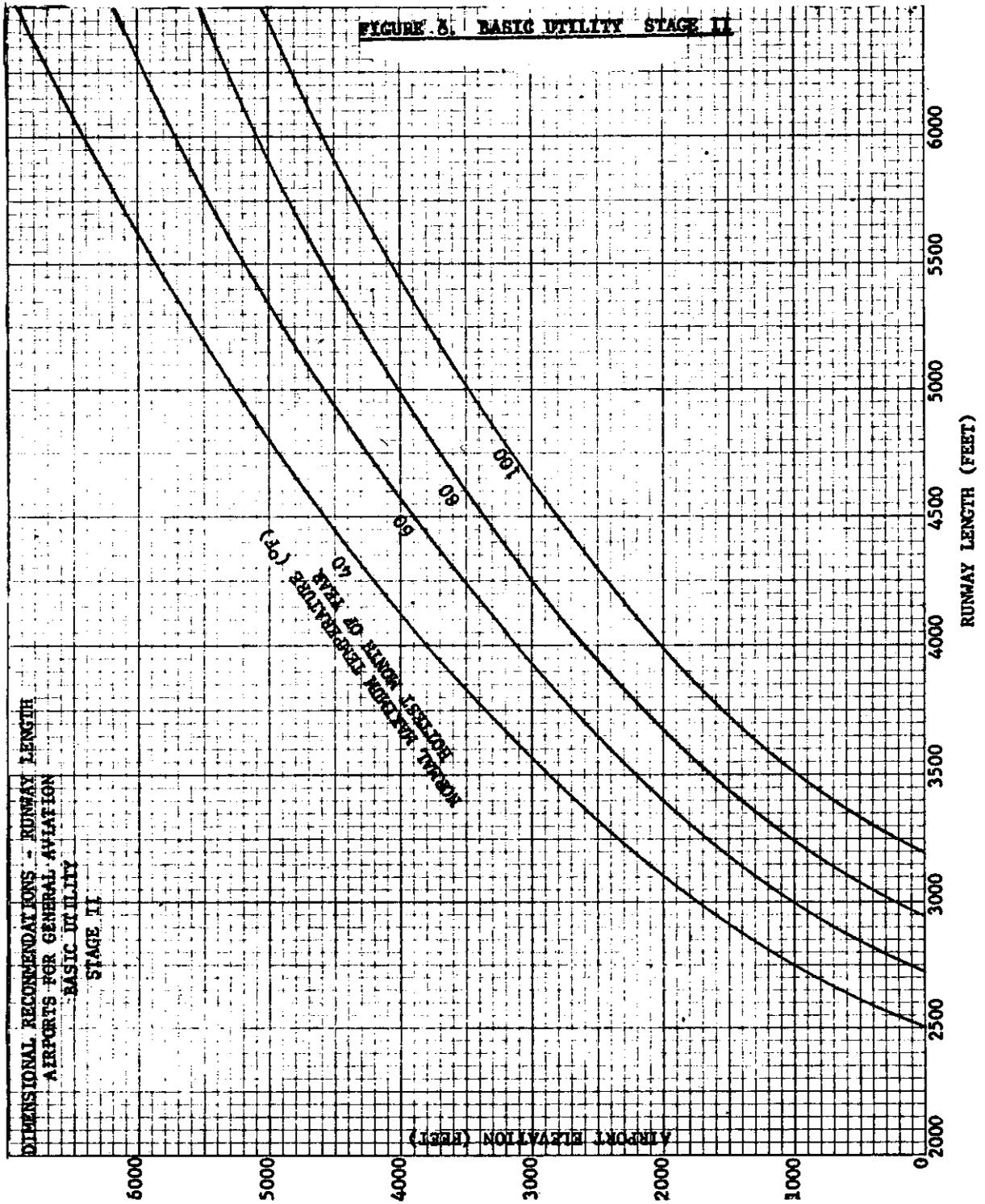


FIGURE 6. BASIC UTILITY STAGE II

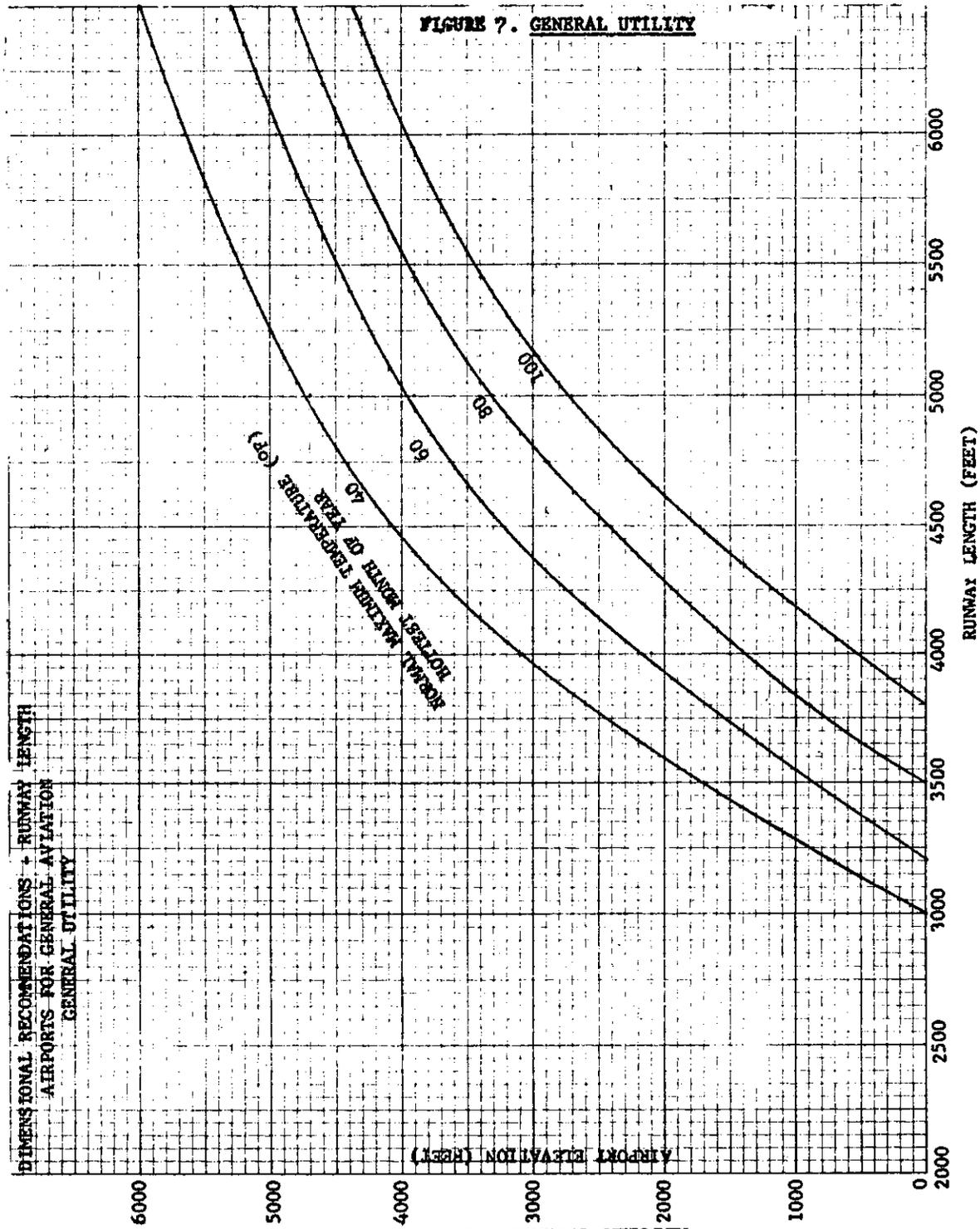


FIGURE 7. GENERAL UTILITY

ITEM	DIM.*	DIMENSIONAL STANDARDS (FEET)					
		BASIC UTILITY				GEN. UTILITY	
		STAGE I		STAGE II		A	B
		A	B	A	B		
1. Runway Length (See Figure No.)	A	Figure 5		Figure 6		Figure 7	
2. Runway Width	B	50	60	60	75	75	100
3. Landing Strip Width	C	100	120	120	150	150	200
4. Rwy CL to Property Line ¹ (See Figure 1)	D ₁	250	275	250	275	300	325
	D ₂	200	225	200	225	250	275
	E	20	20	30	30	40	40
5. Taxiway Width	F	150	175	150	175	200	225
6. Rwy CL to Twy CL	G	250	275	250	275	300	325
7. Rwy CL to Bldg. Line or A/C Parking	H	200	200	200	200	200	200
8. Clear Zones-Rwy End to Start	J	1000	1000	1000	1000	1000	1000
9. Clear Zones-Length ⁴	K	250	250	250	250	250	250
10. Clear Zones-Width Min. @ Start ²	M	450	450	450	450	450	450
11. Clear Zones-Width @ End	-	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
12. Effective Gradient-Rwy(Max) ³							

NOTES: A = Less than 5,000' Elevation, and less than 15 mph (13 knots) crosswind 95% of time.
 B = Greater than 5,000' Elevation, or greater than 15 mph (13 knots) crosswind 5% of time.

- 1 = Exclusive of terminal parking and building area.
- 2 = Clear zone width at start equals primary surface width.
- 3 = Effective runway gradient is the maximum difference in runway centerline elevations divided by the runway length.
- 4 = Maximum length based on level or ascending terrain within the clear zone.

* Letters are keyed to those shown for dimensions on figures.

FIGURE 8. UTILITY AIRPORT CATEGORIES

FILING A REQUEST FOR FEDERAL AID

If a community is interested in Federal assistance in developing an airport, it should contact the appropriate FAA District Airport Engineer. In those states with an active aeronautical agency, such state agency should also be contacted. A list of all Regional and District Airport Offices of the Federal Aviation Agency appears in Appendix 3 of this publication.

The FAA District Airport Engineer can furnish detailed information on all phases of the Federal-aid Airport Program, including the preparation and submission of a Request for Aid - Federal-aid Airport Program, Form FAA-1623 (Rev. 1-62). Instructions for executing the form, together with a sample request, appear as Figures 2 and 3 of this Appendix. Form FAA-1623 may be obtained from the appropriate District Airport Engineer.

The following material should be submitted in support of the Request for Aid:

A sketch of the airport layout showing, by appropriate legend, the location of each item of airport development included in the Request for Aid. The items of proposed development should be clearly identified, numbered, and color coded on the sketch. Figure 4 on Page 5 of this Appendix is a sample sketch of such an airport layout. The sketch should be drawn to scale and preferably be of letter size (8" x 10½").

A breakdown of cost estimates for each item of proposed airport development, Figures 5, 6 and 7 on Pages 6, 7 and 8 of this Appendix, are samples which may be followed for cost estimate presentation. Some preliminary engineering will have to be accomplished in order to obtain a reasonable degree of accuracy. If preliminary engineering cannot be done by the sponsor's own engineering forces, then an engineering consultant, or other qualified personnel, should be employed.

STEPS IN PROCESSING FEDERAL-AID AIRPORT PROGRAM PROJECTS

Sponsor

Federal Aviation Agency

1. Submits Form FAA-1623, Request for Aid - Federal-aid Airport Program.
2. Notifies sponsor of tentative allocation of Federal funds.
3. Completes arrangements of necessary financing and land acquisition; prepares and submits final plans and specifications and Project Application, Form FAA-1624.
4. Authorizes sponsor to advertise construction work.
5. Takes bids and recommends award of contracts.
6. Approves Project Application; tenders Grant Offer of Federal funds; and authorizes sponsor to award contracts.
7. Accepts Grant Offer and executes Grant Agreement; awards and executes contracts.
8. Approves acceptance and execution of Grant Offer and authorizes sponsor to issue notice to proceed to contractors.
9. Issues notices to contractors to proceed with construction and supervises construction work.
10. Inspects construction work periodically.
11. Makes application for partial grant payment by submitting Form FAA-1625.1, Application for Grant Payment.
12. Makes partial grant payment.
13. Completes construction work.
14. Makes final inspection of construction work.
15. Makes application for final grant payment and submits as constructed plans.
16. Audits project costs; makes final payment.

Please read instructions on reverse before completing form,
PRINT or TYPE data requested.

Form Approved Budget Bureau No. 04-R005.1

FEDERAL AVIATION AGENCY				1. Date of this request (Date)			
REQUEST FOR AID - FEDERAL AID AIRPORT PROGRAM							
2. Name of public agency sponsoring request Airville, U.S.A.			3. Name of airport Airville Municipal				
4. Name, title, and address of sponsor's contact representative John Hancock, Mayor City Hall Airville, U.S.A.			5. Aeronautical activity a. Number of revenue passengers explained last 12 months.....(new airport) b. Number of based airworthy civil aircraft _____ 0 _____				
6. Description of work to be accomplished (List by principal work items) (Use nearest dollar)							
Item of work (a)		Total estimated cost (b)	Sponsor's funds (c)	Federal funds requested (d)	Estimated date work would commence (e)		
No.	Description						
1.	Land Acquisition	\$ 20,000	\$10,000	\$10,000	(date)		
2.	Construct Runway 3300' x 60', stub taxiway & apron 150' x 300'	112,800	56,400	56,400			
3.	Lighting (low intensity system)	9,000	4,500	4,500			
4.	Install wind cone & segmented circle	2,400	1,200	1,200			
5.	Relocate Utilities	4,400	2,200	2,200			
6.	Entrance Road	2,400	1,200	1,200			
7.	Obstruction Removal	9,000	4,500	4,500			
8.	Fencing (12,000')	6,000	3,000	3,000			
Totals		\$166,000	\$83,000	\$83,000			
7. Summary of costs included in work item described in Item 6 above (Use nearest dollar)							
List by item of work number (a)	Land (b)	Site preparation (c)	Paving (d)	Lighting (e)	Buildings (f)	Miscellaneous (g)	Total (h)
1.	\$20,000						\$ 20,000
2.		\$56,800	\$56,000				112,800
3.				\$9,000			9,000
4.						\$2,400	2,400
5.						4,400	4,400
6.						2,400	2,400
7.						9,000	9,000
8.						6,000	6,000
Totals	\$20,000	\$56,800	\$56,000	\$9,000		\$24,200	\$166,000
8. Status of sponsor's funds							
Availability date (a)		Source of funds (b)		Amount of funds (c)		Date funds expire (d)	
Funds on hand							
As of month and year	7/1/65	Approved General Obligation Bonds		\$83,000		Indefinite	
Total (Should be equal to or greater than) (the total given for Item 6(c) above.)							
9. Signature of sponsoring agency's representative				10. Title of representative Mayor			

INSTRUCTIONS

The original and two (2) copies of the request, with supporting papers (continuation sheets, sketches, etc.) attached to each copy, are to be submitted to the FAA District Airport Engineer having jurisdiction over the area in which the airport is located.

If more space is required for any item(s) on this form, continue the item(s) on a separate sheet of paper. Continuation items should be identified with the same item numbers used on the form.

Prepare a sketch or sketches of the airport layout and indicate thereon by appropriate legend, the location of each item of work proposed, using the same item numbers as in Item 6 and Item 7. Each sketch is to be the same size as this form and submitted in triplicate (3).

EXPLANATION OF DATA REQUESTED ON THE FORM:

Item 1 - Enter the date the request is prepared.

Item 2 - Enter the name of the public agency sponsoring the request.

Item 3 - Enter the name of the airport.

Item 4 - Enter the name, title, and address of the official representative of the sponsor with whom further contacts should be made and from whom additional information may be obtained.

Item 5a - Enter the number of revenue passengers who boarded scheduled airline aircraft at the airport during the past 12 months. These data can be secured from local airline representatives.

Item 5b - Enter the number of airworthy civil aircraft permanently based at the airport as of the date of this request.

Item 6 - Column (a)—List all airport development eligible under the Federal-aid Airport Program which you consider necessary and anticipate accomplishing in the next three years if Federal funds are made available. The proposed development should be listed and described in terms of logical items which will provide for separate and useful units of work. Assign a number to each item of work: (Examples: 1 - Pave N/S runway

4,000 ft. x 150 ft.; 2 - Construct Fire and rescue equipment building; 3 - Install lights on E/W runway; 4 - Acquire clear zones, N/S runway; etc.).

Item 6 - Column (b)—Enter the total estimated cost for each item of work.

Item 6 - Columns (c) and (d)—Distribute the total estimated cost for each item of development as follows: 50% sponsor, 50% Federal. Except for (a) certain installations of landing aids (land for ALS; in-runway lighting; high intensity lights and runway distance markers), in these cases, the Federal participation can be up to 75% (b) projects in the Virgin Islands, Federal funds 75%; and (c) projects in public land states where the Federal percentage varies, consult the District Airport Engineer for exact percentage for any doubtful items.

Item 6 - Column (e) - Enter the date on which it is estimated that you will be prepared to finance and undertake each item of work to be performed if Federal funds are made available.

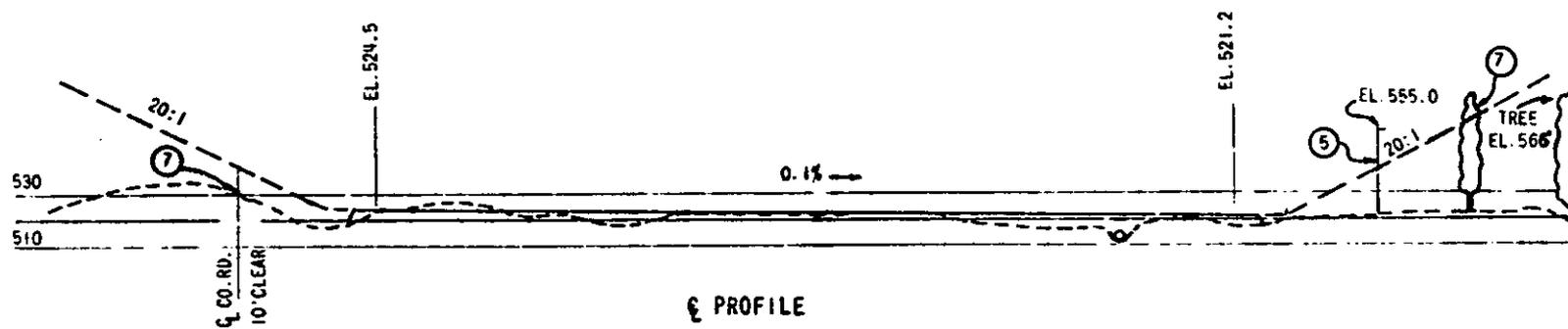
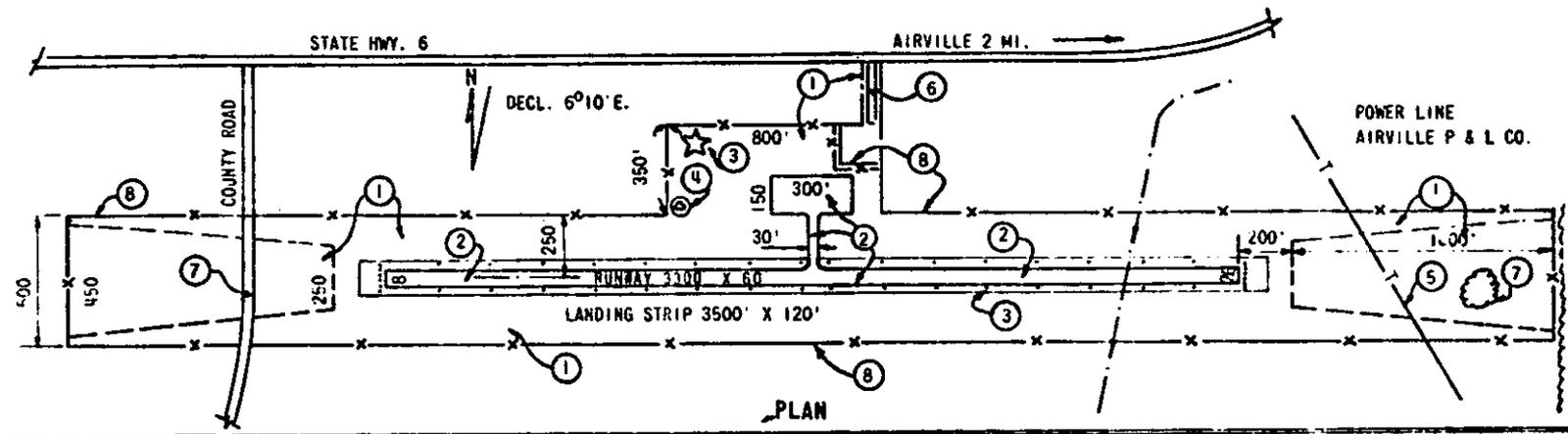
Item 7 - Summarize the total costs involved for each item of work described in Item 6 according to the following categorical items of: Land; Site preparation (includes but not limited to such work as clearing, grubbing, grading, drainage, etc.); Paving; Lighting; Buildings; and Miscellaneous.

To identify the item of work being summarized list in Column (a) the item of work number assigned the same item of work in Item 6, Col. (a).

Item 8 - Enter first the amount of funds the sponsor now has on hand and available for airport development. Next, enter by year and approximate month of the year, the amount of funds the sponsor will have or anticipates having for airport development during that year. The source of obtaining all funds should be shown. Enter expiration date (if any) for each Fund item.

Item 9 - All copies of the request submitted to the District Airport Engineer must be signed by an authorized representative of the sponsoring public agency.

Item 10 - Enter the title of the sponsor's authorized representative signing the request.



WORK ITEMS IN PROJECT REQUEST:

- | | |
|--|--------------------------------------|
| RED | 1. LAND ACQUISITION |
| B.T.F | 2. CONSTRUCT RUNWAY, TAXIWAY & APRON |
| BLACK | 3. LOW INTENSITY LIGHTING |
| ORANGE | 4. WIND CONE & SEGMENTED CIRCLE |
| BROWN | 5. RELOCATE UTILITIES |
| BLUE | 6. ACCESS ROAD |
| GREEN | 7. OBSTRUCTION REMOVAL |
| BLACK | 8. FENCING |

LEGEND

- | | |
|---|-----------------------|
| | PROPERTY LINE |
| | PAVING & MARKING |
| x | FENCING |
| * | L.I. LIGHTS |
| ☆ | BEACON |
| T | POWER LINE |
| ⊙ | WIND CONE & SEG. CIR. |
| | EXISTING ROAD |
| | STREAM |

SCALE: HOR. 1" = 600' 0 500
VERT. 1" = 60'

1966 PROGRAM
AIRVILLE AIRPORT
AIRVILLE, NORTH CAROLINA
FEBRUARY 6, 1965

FIGURE 4. AIRPORT LAYOUT SKETCH

AIRPORT: Airville Municipal

C O N S T R U C T I O N Q U A N T I T I E S A N D C O S T

CITY : Airville, U.S.A.

	UNIT	UNIT COST	DESCRIPTION OF DEVELOPMENT ITEM					
			Construct Runway (3300' x 60'), Taxiway and Apron		Construct Entrance Road			
			QUANTITY	AMOUNT	QUANTITY	AMOUNT	QUANTITY	AMOUNT
I. SITE PREPARATION:								
Clearing	AC	200.00	3	600.00				
Clear Isolated Trees	EA	25.00	8	200.00				
Clearing & Grubbing	AC	300.00	10	3,000.00	0.5	150.00		
Unclas. Excavation	C.Y.	0.37	34,000	12,580.00	2,000	740.00		
Borrow Excavation	C.Y.	1.30	9,400	12,220.00				
Drainage:								
(1) 24" RCC Pipe, Std	L.F.	6.00	96	575.00	40	240.00		
(2) Struct. Conc.	C.Y.	65.00	150	9,750.00				
(3) Reinf. Steel	Lbs.	0.15	22,500	3,375.00				
Turfing (Seeding)	AC	200.00	18	3,600.00	0.5	100.00		
II. PAVING:								
Type I	S.Y.	1.68	28,000	47,040.00	500	840.00		
III. LIGHTING:								
LIRL	L.S.	7,500.00	1	7,500.00				
IV. MISCELLANEOUS:								
Fencing (Type B)	L.F.	0.41	12,000	4,920.00				
Marking	S.F.	.20	4,200	840.00				
Utility Relocation	L.S.	3,650.00		3,650.00				
Wind Cone & Seg. Cir.	L.S.	2,000.00		2,000.00				
V. MISCELLANEOUS:								
Obstruction Removal	L.S.			7,400.00				
CONSTRUCTION TOTAL				\$119,250.00	\$2,070.00			
ENGINEERING 10%				11,900.00	200.00			
CONTINGENCIES				11,900.00	130.00			
ADMINISTRATIVE				550.00				
				<u>\$143,600.00</u>	<u>\$2,400.00</u>			

FIGURE 5. C O N S T R U C T I O N Q U A N T I T I E S A N D C O S T

AIRPORT: Airville Municipal

CITY : Airville, U.S.A.

PAVEMENT SECTIONS
AND
COST ESTIMATES

To Accompany Construction Cost Estimate

1½" Bit. Plant Mix Surf.
Mat Course
6" Sand Clay Gravel
12" Select Borrow
E-1 Material

SECTION
TYPE I

ITEM	SPEC.	UNIT	QUANTITY PER SQ. YD.	UNIT COST	COST PER SQ. YD.
Surface	P-401	Ton	0.054	12.10	0.65
Tack Coat	P-603	Gal.	0.10	0.20	0.02
Mat Crse	P-405	s.y.	1.0	0.27	0.27
Prime	P-602	Gal.	0.35	0.19	0.07
Base	P-213	c.y.	0.167	4.00	0.67
TOTAL COST PER SQUARE YARD					1.68

SUBGRADE CLASS: E-10, Poor drainage, F-7
 DESIGN LOADING: 20,000# Single Gross
 LOCATION : Runway, Taxiway & Apron
 REMARKS : Shrinkage and swell characteristics of existing soil requires select material blanket course. Subgrade class top 12": E-1, poor drainage, Fa. Cost of select material included in site preparation.

SECTION
TYPE

TOTAL COST PER SQUARE YARD					

SUBGRADE CLASS:
 DESIGN LOADING:
 LOCATION :
 REMARKS :

FIGURE 6. PAVEMENT SECTIONS AND COST ESTIMATES

AIRPORT: Airville Municipal

LAND ACQUISITION ESTIMATE

CITY : Airville, U.S.A.

DEVELOPMENT DESCRIPTION	ITEM DESCRIPTION								
	Construct Runway, Taxiway and Apron			Entrance Road					
	ACRES	UNIT COST	ITEM COST	ACRES	UNIT COST	ITEM COST	ACRES	UNIT COST	ITEM COST
AIRPORT DEVELOPMENT	50	260.00	13,000.00						
CLEAR ZONES: FEE EASEMENT	23	260.00	5,980.00						
APPROACH									
OBSTRUCTION REMOVAL									
ENTRANCE ROAD				0.5	260.00	130.00			
ALS									
SURVEYS, LEGAL, ETC.			890.00						
									GRAND TOTAL
TOTAL			19,870.00			130.00			20,000.00

REMARKS :

FIGURE 7. LAND ACQUISITION ESTIMATE

Federal Aviation Agency Regional and Airport
District Offices

EASTERN REGION

Chief, Airports Division
Federal Aviation Agency
Building 178, Lobby Floor
(Seaboard World Airlines Bldg.)
Jamaica, New York 11430
MAIL: Federal Building, John F.
Kennedy Int'l. Airport
Jamaica, New York 11430

MASS., CONN., RHODE ISLAND,
MAINE, VERMONT, NEW HAMPSHIRE
District Airport Engineer
Federal Aviation Agency
General Aviation Admin. Bldg.
Logan International Airport
East Boston, Massachusetts 02128

NEW YORK, NEW JERSEY
District Airport Engineer
Federal Aviation Agency
Room 207, Hangar 17
John F. Kennedy Int'l. Airport
Jamaica, New York 11430

PENNSYLVANIA
District Airport Engineer
Federal Aviation Agency
Room 204, Terminal Building
Harrisburg-York State Airport
New Cumberland, Pennsylvania 17070

OHIO, KENTUCKY
District Airport Engineer
Federal Aviation Agency
Room 215, New Terminal Building
4600 East 17th Avenue
Columbus Municipal Airport
Columbus, Ohio 43219

DELAWARE, MARYLAND, VIRGINIA,
WEST VIRGINIA
District Airport Engineer, DCA-600
Federal Aviation Agency
Room 737C
800 Independence Avenue, S. W.
Washington, D. C. 20553

SOUTHWEST REGION

Chief, Airports Division
Federal Aviation Agency
P. O. Box 1689
Fort Worth, Texas 76101

TEXAS
District Airport Engineer
Federal Aviation Agency
University Plaza Bldg., Room 214
100 N. University Drive
Fort Worth, Texas 76107
MAIL: P. O. Box 9540

OKLAHOMA, NEW MEXICO
District Airport Engineer
Federal Aviation Agency
FAA Building
Wiley Post Airport
Bethany, Oklahoma 73008
MAIL: P. O. Drawer F
Bethany, Oklahoma 73008

LOUISIANA, ARKANSAS
District Airport Engineer
Federal Aviation Agency
Room 221
Administration Building
Greater Shreveport Municipal Airport
Shreveport, Louisiana 71109
Mail: P. O. Box 9000

Federal Aviation Agency Regional and Airport
District Offices

SOUTHERN REGION

Chief, Airports Division
Federal Aviation Agency
3400 Whipple Avenue
East Point, Georgia
MAIL: P. O. Box 20636
Atlanta, Ga., 30320

ALABAMA, MISSISSIPPI
District Airport Engineer
Federal Aviation Agency
FAA Building
Jackson Municipal Airport
Jackson, Mississippi 39205
MAIL: P. O. Box 1727

GEORGIA, TENNESSEE
District Airport Engineer
Federal Aviation Agency
3400 Whipple Avenue, Rm. 232
East Point, Georgia
MAIL: P. O. Box 20636
Atlanta, Ga., 30320

FLORIDA, PUERTO RICO, VIRGIN ISLANDS
District Airport Engineer
Federal Aviation Agency
FAA Weather Bureau Building, Rm. 208
Miami International Airport
Miami, Florida 33159
MAIL: P. O. Box 59-2014, AMF Branch

NORTH CAROLINA, SOUTH CAROLINA
District Airport Engineer
Federal Aviation Agency
Municipal Airport
Branch Post Office
Charlotte, North Carolina 28204

CENTRAL REGION

Chief, Airports Division
Federal Aviation Agency
4825 Troost Avenue
Kansas City, Missouri 64110

ILLINOIS
District Airport Engineer
Federal Aviation Agency
1104 Customs House Building
610 South Canal Street
Chicago, Illinois 60607

MINNESOTA, NORTH DAKOTA, WISCONSIN
District Airport Engineer
Federal Aviation Agency
622 Commerce Building
4th & Wabasha Streets
St. Paul, Minnesota 55101

INDIANA, MICHIGAN
District Airport Engineer
Federal Aviation Agency
Room 526
Mutual Building
208 North Capitol Avenue
Lansing, Michigan 48933

IOWA, NEBRASKA, SOUTH DAKOTA
District Airport Engineer
Federal Aviation Agency
General Aviation Bldg.
Lincoln Municipal Airport
Lincoln, Nebraska 68524

MONTANA
District Airport Engineer
Federal Aviation Agency
FAA Building
Helena Airport
Helena, Montana 59601

KANSAS, MISSOURI
District Airport Engineer
Federal Aviation Agency
1208 Federal Office Bldg.
911 Walnut Street
Kansas City, Missouri 64106

Federal Aviation Agency Regional and Airport
District Offices

WESTERN REGION

Chief, Airports Division
Federal Aviation Agency
5651 West Manchester Avenue
Los Angeles, California 90009
MAIL: P. O. Box 90007,
Airport Station

NORTHERN CALIFORNIA
District Airport Engineer
Federal Aviation Agency
831 Mitten Road
Burlingame, California 94010
MAIL: P.O. Box 8307
Airport Station
San Francisco,
California 94128

UTAH, NEVADA
District Airport Engineer
Federal Aviation Agency
Room 220, 2nd Floor
Terminal Building
Reno Municipal Airport
Reno, Nevada 89502

SOUTHERN CALIFORNIA
District Airport Engineer
Federal Aviation Agency
5885 West Imperial Highway
Los Angeles, California 90045

WASHINGTON, OREGON, IDAHO
District Airport Engineer
Federal Aviation Agency
Room 114
FAA Building
Boeing Field
Seattle, Washington 98108

ARIZONA
District Airport Engineer
Federal Aviation Agency
2873 Sky Harbor Boulevard
Commerce Building No. 2
Sky Harbor Municipal Airport
Phoenix, Arizona 85034
MAIL: 2800 Sky Harbor Blvd.

COLORADO, WYOMING
District Airport Engineer
Federal Aviation Agency
Stapleton Airfield
8055 East 32nd Avenue
Denver, Colorado 80207

ALASKAN REGION

Chief, Airports Division
Federal Aviation Agency
Headquarters Building
632 Sixth Avenue
Anchorage, Alaska 99501

No District Offices

PACIFIC REGION

Chief, Airports Division
Federal Aviation Agency
Room 823
1833 Kalakaua Avenue
Honolulu, Hawaii 96812
MAIL: P. O. Box 4009

No District Offices