

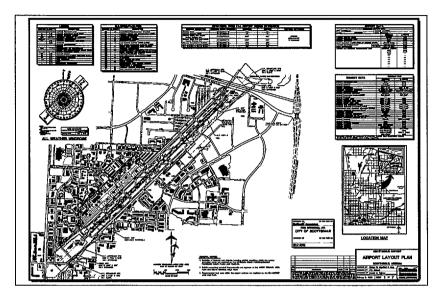
Chapter 6

AIRPORT PLANS

AIRPORT PLANS

Chapter 6





In Chapter Five, a recommendation was made for the future development of Scottsdale Airport. As determined in the previous chapters, new airside and landside facilities will be necessary to meet the ultimate forecast demand. The purpose of this chapter is to describe, in narrative and graphic form, the recommended development through the 20-year planning period.

Since the completion of the Alternatives Chapter and the associated Planning Advisory Committee (PAC) meeting, the City and the PAC have provided comments and direction as to the future development at Scottsdale Airport. Based on these additional comments some changes to the development of the airport are reflected in this chapter. In addition, some development items have been completed to date, therefore, these

items are reflected as existing facilities on the following plan set.

A set of plans, referred to as **Airport Layout Plans**, has been prepared to graphically depict the recommended airfield layout, disposition of obstructions and uses of land within the proposed airport property. This set includes the following.

- Airport Layout Plan
- Terminal Area Plans
- Part 77 Airspace Plan
- Approach Zones Plans
- Runway Protection Zones Plans
- On-Airport Land Use Plan
- Airport Property Map

The airport layout plan set has been prepared on a computer-aided drafting system for future ease of use. The computerized plan set provides a detailed layout of existing and future facilities on multiple layers that permit the user to focus in on any section of the airport at any desirable scale. The plan set can be used as base information for design and can be easily updated in the future to reflect new development. The plan set is also provided in 24-inch x 36-inch reproducible hard copy in accordance with current FAA standards.

DESIGN STANDARDS

The design standards applied to the development of Scottsdale Airport are prescribed in **FAA Advisory Circular 150/5300-13**, **Airport Design**. These standards are based upon several factors which include the approach speed, operating weights and wingspan of the design aircraft.

Based on forecast aviation demand, Scottsdale Airport would ultimately be expected to serve aircraft in Approach Category D (approach speeds between 141 and 166 knots). In addition, a number of aircraft anticipated to operate at the airport would be in Airplane Design Group II (aircraft with wingspans less than 79 feet). The airfield facilities were, therefore, designed to accommodate D-II aircraft. The load bearing strength of the runway should be maintained at 75,000 pounds single-wheel loading (SWL), which would accommodate the anticipated types of aircraft during the planning period.

The FAA design standards used in planning the airside facilities are listed in Table 6A. Those existing facilities that do not meet the current standards are identified within the "Modifications to FAA Standards" block on the Airport Data Sheet. Modifications to FAA Standards are methods of requesting an FAA review of the specific standard(s) to determine if there are any actual hazards to navigable airspace or effects on overall airport safety. Examples of existing facilities at Scottsdale Airport that do not meet design standards include the runway safety area length beyond the end of Runway 3 and the separation between the runway and parallel taxiway, among others. These items are all identified in Table 6A.

TABLE 6A	
Airport Design Standa	rds
Scottsdale Airport	

·	D-II	Existing	Ultimate
Descriptor	Standards	3-21	3-21
Runway Length (ft)	N/A	8,251	8,251
Runway Width (ft)	100	75	100
Runway Strength (thousand lbs)	N/A	75,000 SWL	75,000 SWL
Runway Safety Area Length (beyond the end of the runway (ft))	1,000	600¹/1,000	1,000/1,000
Runway Safety Area Width (ft)	500	300¹	300¹
Runway Object Free Area Length (beyond the end of the runway (ft))	1,000	600¹/1,000	1,000/1,000
Runway Object Free Area Width (ft)	800	325¹	325 ¹
Runway Protection Zones	N/A	V/V	NP/NP
Parallel Taxiway Width (ft)	35	40	40
Parallel Taxiway Strength (lbs)	N/A	75,000 SWL	75,000 SWL
Runway Centerline to:			
Parallel Taxiway (ft)	300	250¹	250¹
Aircraft Parking (ft)	400	325¹	325^{1}
Building Restriction Line (ft)	500 ²	500 ²	500 ²
Taxiway Centerline to:			
Parallel Taxilane (ft)	105	N/A	N/A
Fixed or Movable Object (ft)	65.5	65.5	65.5
Taxilane Centerline to:			
Parallel Taxilane (ft)	97	N/A	N/A
Fixed or Movable Object (ft)	57.5	Varies	Varies

Notes: SWL - Single Wheel Loading, NP - Nonprecision, V - Visual, N/A - Not Applicable

Source: FAA AC 150/5300-13, Chg. 4, Airport Design

AIRPORT LAYOUT PLAN

The Airport Layout Plan (ALP) graphically presents the existing and planned airport layout and depicts the recommended improvements needed to meet forecast aviation demand. Detailed airport and runway data are provided on

the ALP (Sheet No. 1) to describe the airport development planning recommendations.

The *ALP* is an overview of the proposed development of the airport through the year 2015. It does not depict the various stages of development leading to

¹ - Separations less that D-II standards will be requested as Modification to Standards.

² - The Building Restriction Line (BRL) provides adequate nonprecision approach imaginary surface clearance for a 15 foot tall building. The BRL may be adjusted for buildings/objects of lesser height in relationship to the runway elevation at that location.

the completion of the 20-year plan. Additional exhibits and plans in this report show these development stages in detail (see Chapter Seven). The following discusses the airfield related development recommendations.

RUNWAY 3-21

Runway 3-21 is planned to be utilized by a variety of general aviation aircraft and commuter type aircraft. Airside development includes the existing 750foot displaced threshold on Runway 3, as well as an ultimate 400-foot displaced threshold to Runway 21. In addition, the construction of additional high-speed taxiway exits, and the completion of Bravo Taxiway to the north.

The Medium Intensity Taxiway Lighting (MITL) will be extended on Bravo Taxiway and new Runway End Identifier Lights (REILs) installed on both runway ends. Non-precision approach capability will be provided to both runway ends; therefore, non-precision runway markings will be required.

PROPERTY ACQUISITION

The ALP also depicts property acquisition proposed at Scottsdale Airport. This property includes approximately 37 acres not currently under the airport's jurisdiction (the Thomas Parcel, the Rey West Parcel, the Keycor Parcel, the Butherus Parcel, and the Airport

Drive Parcel). The acquisition of this property should provide fee simple ownership in order for the airport to maintain control of the property.

AIRFIELD DEVELOPMENT STAGING

The 20-year planning period has been divided into three stages: Stage I, Stage II and Stage III. Each stage and associated airside development item are described in the following paragraphs.

Stage I, the first five year period of the development program, has been further divided into individual fiscal years, FY1996/97 through FY2000/01. Stage I includes the following major airside development items; the widening of the runway to 100 feet, the extension of Bravo Taxiway, and the installation of MITLs. Also included in Stage I is the replacement of the REILs.

Projects identified in the Stage II development program encompass the five year period from FY2001/02 through FY2005/06. No major airside projects are associated with Stage II development.

Stage III contains projects for the longer range needs of the airport that will be accomplished during the period FY2006/07 to FY2015/16. The airside project associated with this stage relates to relocating the threshold lighting and REILs on Runway 21.

TERMINAL AREA PLANS

The Terminal Area Plans, North and South Terminal Area Plans, Sheets No. 2 and 3, represents a refinement of the selected development configuration and provides a more detailed drawing of the terminal area facilities on the north and south ends of the airport. The following is the suggested staging.

Stage I landside development consists of the land acquisition of the Thomas Parcel, the Rey West Parcel, the Keycor Parcel, the Butherus Parcel, and the Airport Drive Parcel, as well as the beginning phase of T-hangar development on the Cholla Parcel and improvements to the existing terminal area circulation and parking.

Projects identified in the Stage II development program include the initial phase of T-hangar development on the Thomas and Keycor Parcels. In addition, supporting auto parking on the Thomas Parcel is included during this Stage.

Stage III terminal area development includes the construction of the new commercial service terminal building and related facilities on the Rey West Parcel and the continued T-hangar development on the Thomas and Keycor Parcels.

PART 77 AIRSPACE PLAN

The Part 77 Airspace Plan for Scottsdale Airport, Sheet No. 4, is based on F.A.R. Part 77, Objects Affecting Navigable Airspace. The intent of these regulations is to protect the airspace and approaches to each runway from hazards that could affect the safe and efficient operation of the airport.

The Part 77 Airspace Plan is a graphic depiction of the imaginary surfaces described for various airport geometric planes, such as the runway (primary and transition surfaces), approach (approach surface) and the airport (horizontal and conical surfaces). Design criteria for surface heights, angles, and radii on this plan are determined by the airport category and runway approach classification.

The Part 77 Airspace Plan for Scotts-dale Airport is based on large aircraft (aircraft over 12,500 pounds) non-precision approaches to both runway ends. This drawing will permit the City to readily determine if construction of a proposed structure in the vicinity of the airport would penetrate any of the protected airspace surfaces.

The obstructions recorded at Scottsdale Airport are indicated on **Sheet No. 4**. These obstruction are also identified on the existing *NOAA Airport Obstruction Chart (OC 5651)*. Those obstructions that pertain to the runway protection zones and approach zones are explained in greater detail on the appropriate drawings that follow. Obstructions to the other airspace surfaces are describe briefly below.

PRIMARY SURFACES

The primary surface for Runway 3-21 at Scottsdale Airport is 500 feet in width,

extends 200 feet beyond each runway end and is centered on the runway. In addition, the elevation of the primary surface is the same as the elevation along the associated part of the runway.

Situated adjacent to the runway and taxiway system, the primary surface should remain clear of most objects in order to allow unobstructed passage of aircraft. Within the primary surface, objects are only permitted if they are no taller than two feet above the ground, and if they are constructed on frangible (breakaway) fixtures. The only exception to the two-foot height requirement is for objects whose location is fixed by function. VASIs and PAPIs are examples of such objects within the category of "fixed by function".

Analysis indicates that there are lights and signage within the primary surface. It is recommended that those objects that are determined to impact the approach minimums to the runway system be removed.

TRANSITION SURFACES

The transition imaginary surface is a surface used to join two other surfaces together. The transition surface joins the primary surface to the approach and horizontal surfaces. The transition surface rises at a slope of one foot vertically for each seven feet horizontal distance (7:1), up to a height which is 150 feet above the highest runway elevation.

HORIZONTAL SURFACE

The horizontal surface is established at 150 feet above the highest runway elevation or 1,658 feet MSL. Having no slope, the horizontal surface connects the transitional and conical surfaces. The horizontal surface has a radius of 10,000 feet from the ends of each runway, with a tangent line connecting the arcs.

CONICAL SURFACE

The conical surface for Scottsdale Airport is 4,000 feet in length and slopes away from the horizontal surface at one foot vertical for each twenty feet horizontal (20:1). The conical surface rises to a height of 350 feet above the established airport elevation or to 1,858 feet MSL.

APPROACH ZONE PLANS

The Approach Zones Profiles, Sheet No. 5, represents the approach surface profiles off each end of the runway. The plan depicts the physical features near each runway's extended centerline, including significant topographic changes, roadways, etc. The dimensions and angles of the approach surfaces are prescribed in F.A.R. Part 77 and depend upon the runway instrumentation and the type of aircraft served.

The approach slopes for the non-precision approach to Runway 3-21 extend 10,000 feet from the primary surface, and rises at a slope of one foot vertically for each 34 feet of horizontal distance (34:1). The inner width of the approach surface is 1,000 feet, whereas the width of the approach surface at 10,000 feet from the primary surface is 4,000 feet.

RUNWAY PROTECTION ZONES PLANS

The Runway Protection Zones Plans, Sheet No. 5, consists of a large scale plan and profile view of the inner portions of the approach surfaces. This plan is designed to facilitate identification of roadways, levees, utility lines, structures, and other possible obstructions that may lie within these safety areas at the ends of each runway.

The runway protection zone (RPZ) dimensions are a function of the size of the aircraft and the runway instrumentation. The RPZs for Runway 3-21 are sized for large aircraft providing nonprecision instrument approach capabilities (500 feet by 1,700 feet by 1,010 feet). The existing RPZs are slope at one foot vertically for each 20 feet horizontally and are sized for large aircraft utilizing visual approach (500 feet by 1,000 feet by 700 feet). Although RPZs would generally be kept graded and level, Runway 21's RPZ contains Frank Lloyd Boulevard, the Central Arizona Project Canal, and a levee, and Runway 3's RPZ contains a portion of Thunderbird Road and 73rd. None of these items within the RPZ's are considered

an obstruction, therefore, no additional notification or marking is necessary.

ON-AIRPORT LAND USE PLAN

The objective of the *On-Airport Land Use Plan*, **Sheet No. 6**, is to locate land uses within the airport environs so that they are compatible and able to function without major constraints or annoyance.

Three major categories of land uses are depicted on the On-Airport Land Use Plan: Airfield, Aviation Related Revenue Support and Non-Aviation Related Revenue Support. The Airfield land use category refers to the runway and taxiway systems, as well as portions of the RPZs. The Aviation Related Revenue Support land use category reserves space for aprons, terminal facilities, FBO facilities, hangars, etc. The Non-Aviation Related Revenue Support land use category refers to those areas which support commercial/industrial tenants that do not require access to the runway/taxiway system. Due to terrain features and existing or proposed land uses, portions of the RPZs are indicated in the Non-Aviation Related Revenue Support category.

As indicated on the *On-Airport Land Use Plan*, the approximate size of the Airfield, Aviation Related Revenue Support and Non-Aviation Related Revenue Support categories are approximately 185 acres, 117 acres and 20 acres, respectively.

The *On-Airport Land Use Plan* is designed to provide basic guidance for the City in making decisions related to onairport development at Scottsdale Airport.

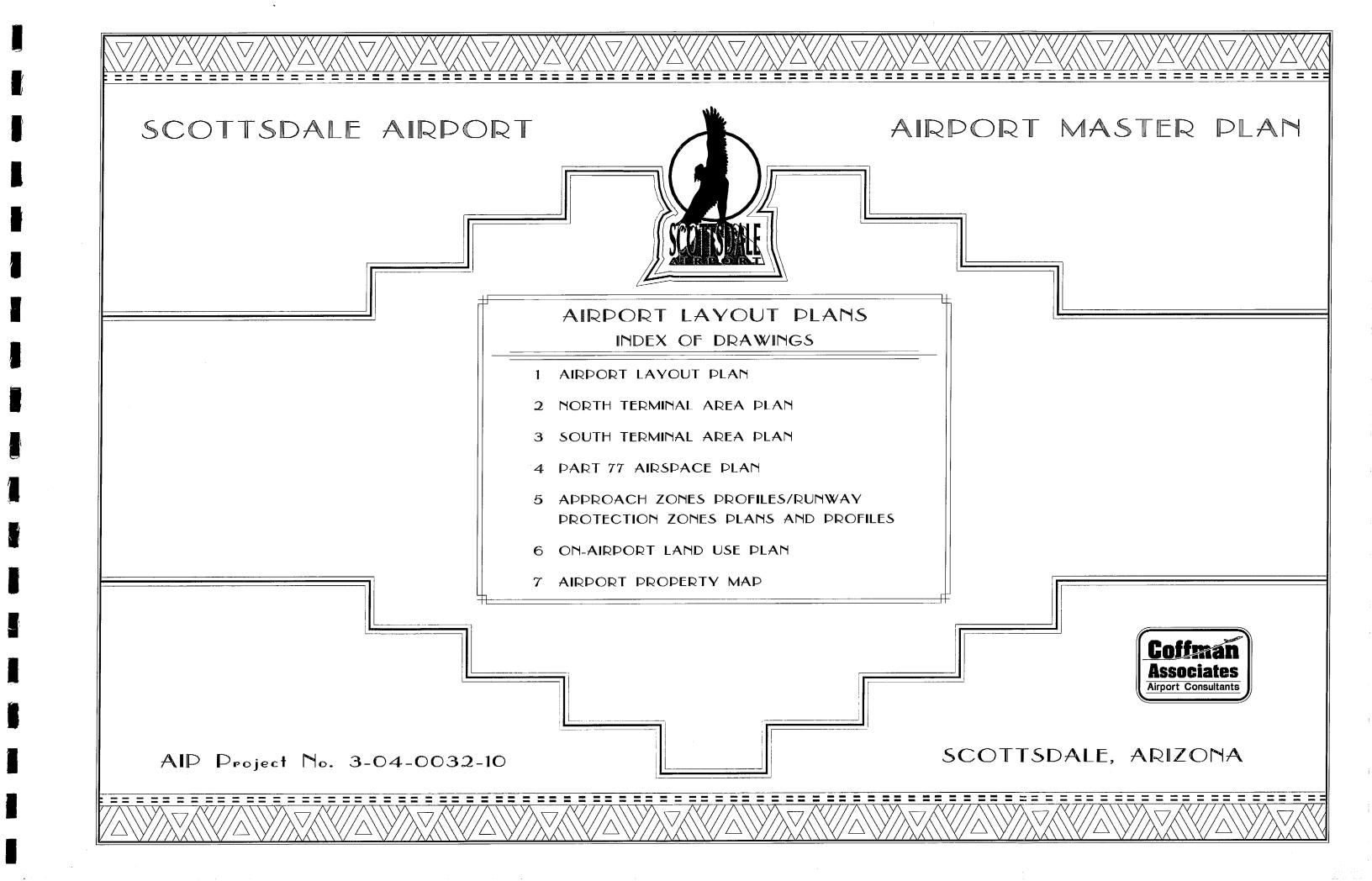
AIRPORT PROPERTY MAP

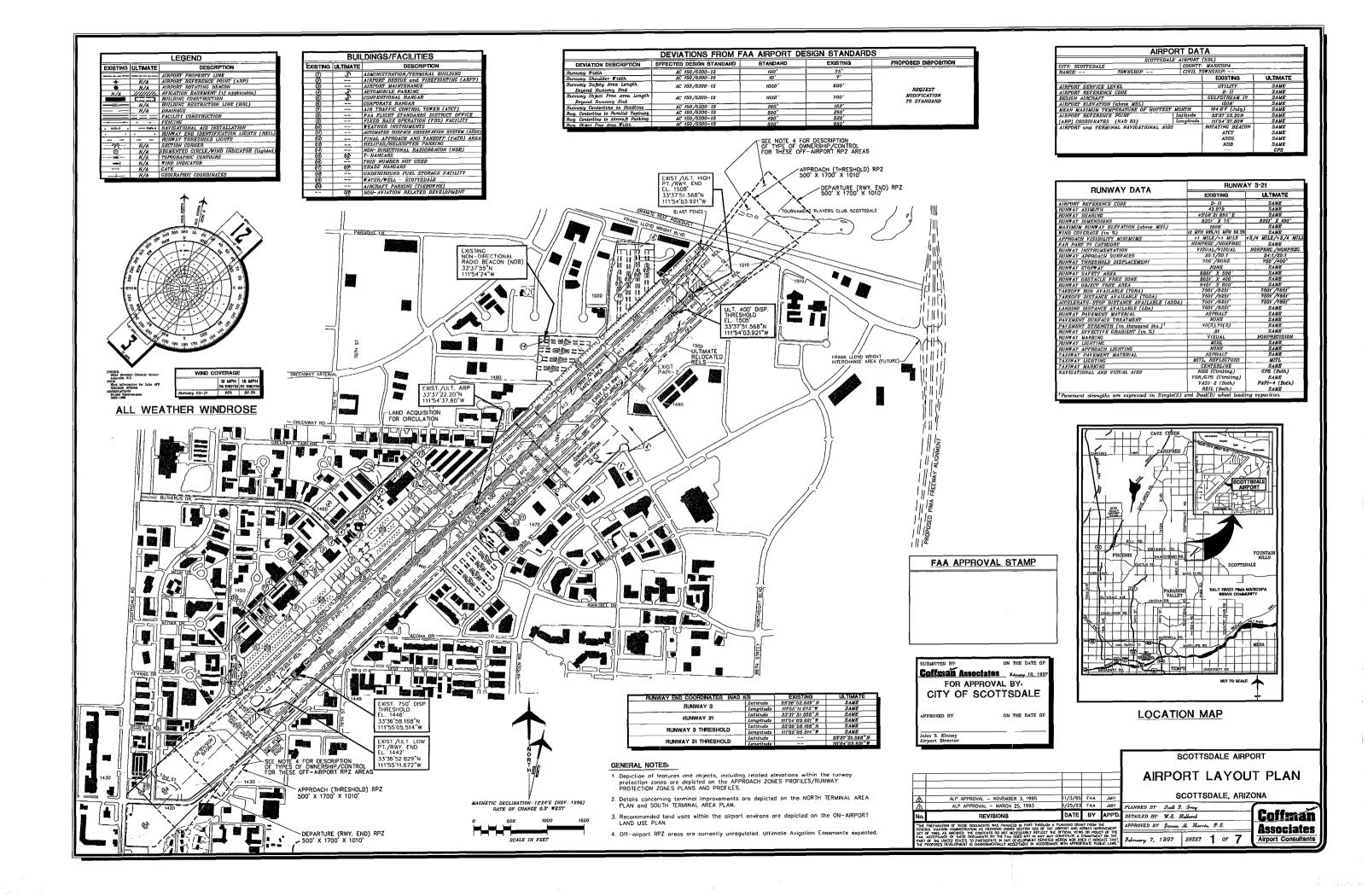
The Airport Property Map, Sheet No. 7, depicts the property that was acquired in order to construct Scottsdale Airport, along with the proposed/potential land acquisition during the 20-year planning period. The documents recording the land acquisitions are also indicated. It is recommended that a survey and title search be conducted to accurately determine the property line at Scottsdale Airport.

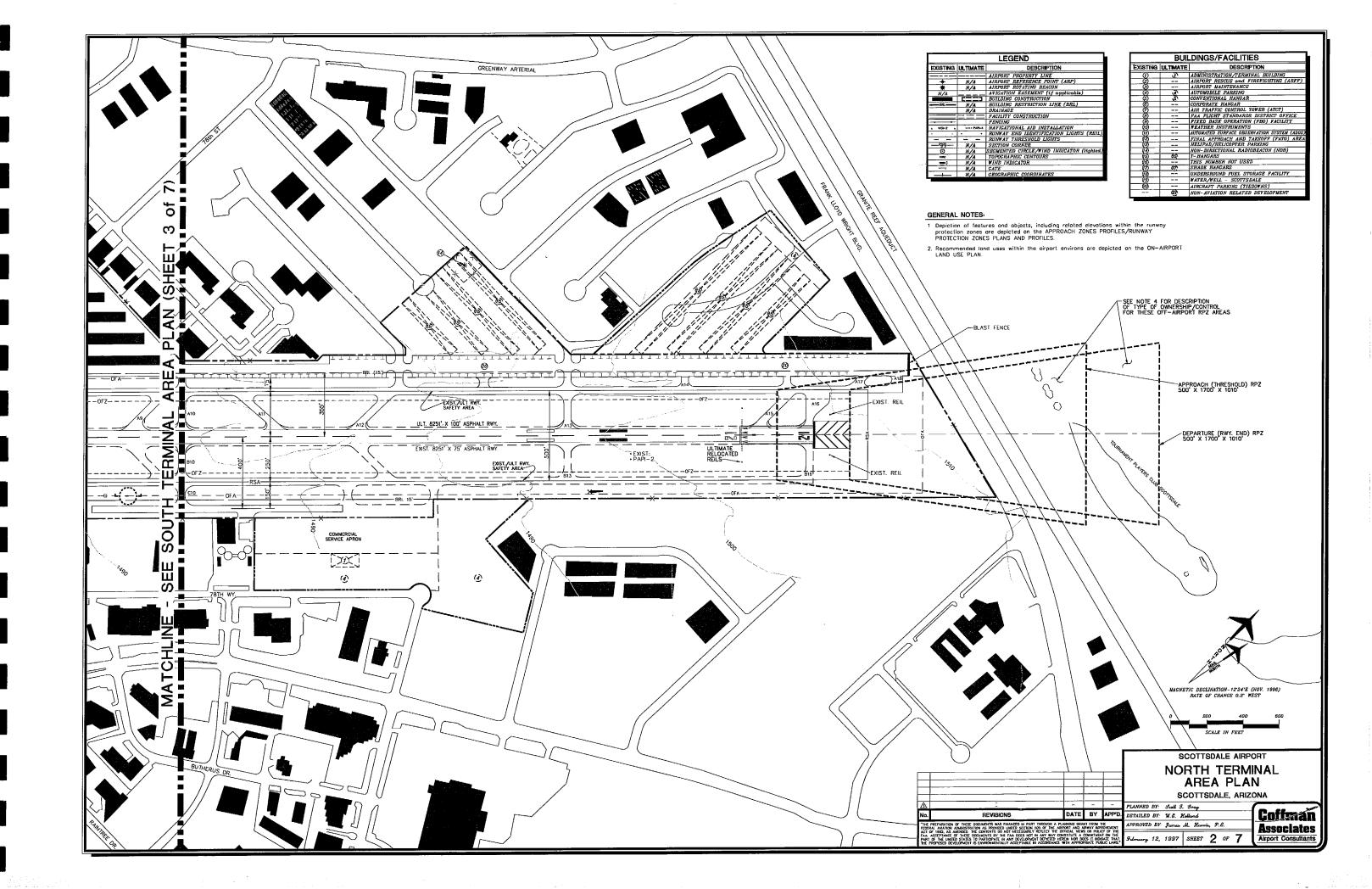
SUMMARY

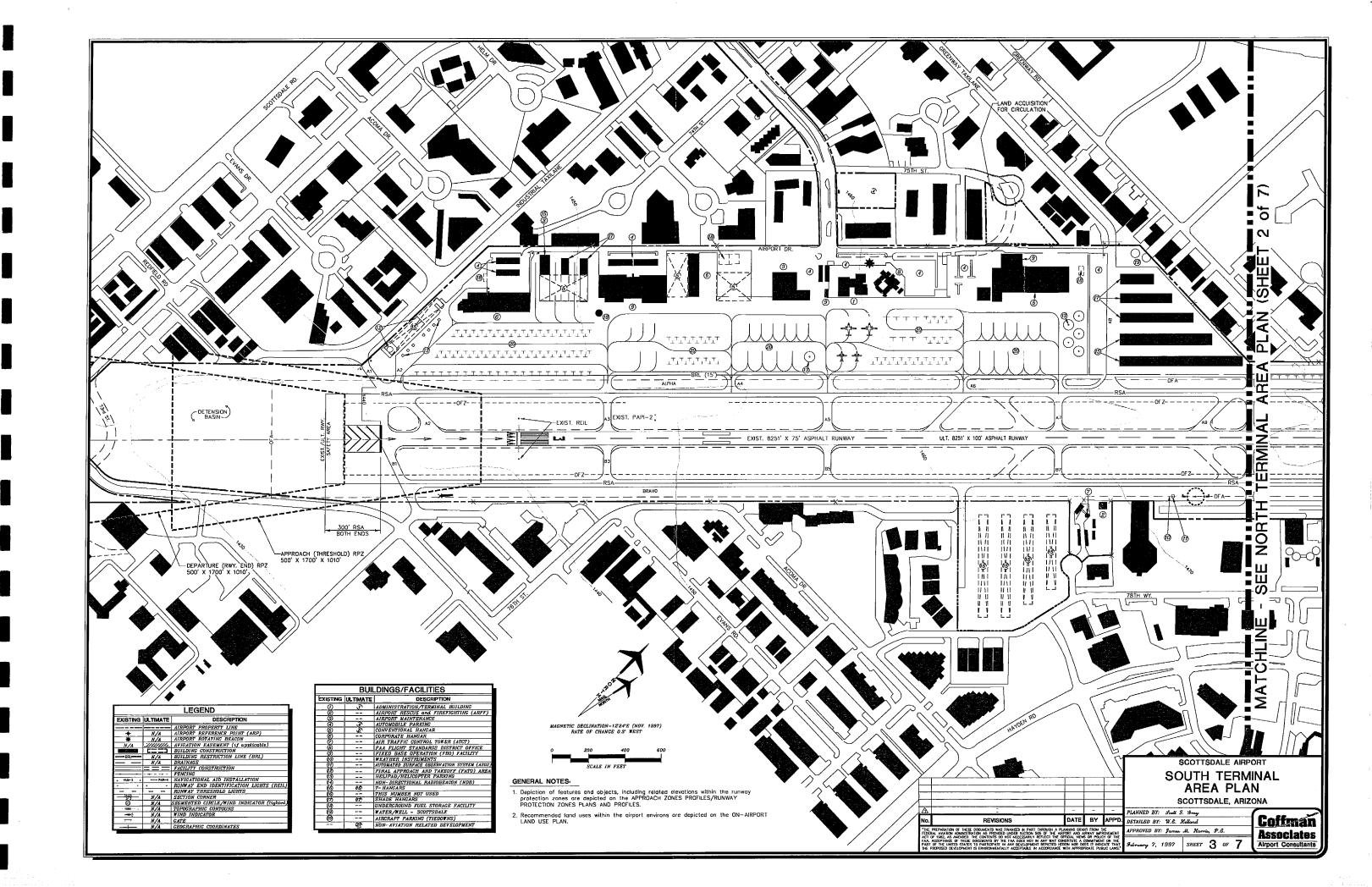
The Airport Plans Set is designed to provide basic guidance for the City in making decisions relative to future development at Scottsdale Airport. The Airport Plan Set provides for development to satisfy both short-term and long-range needs. Flexibility will be a key to the future development, since demands may not occur exactly as forecast.

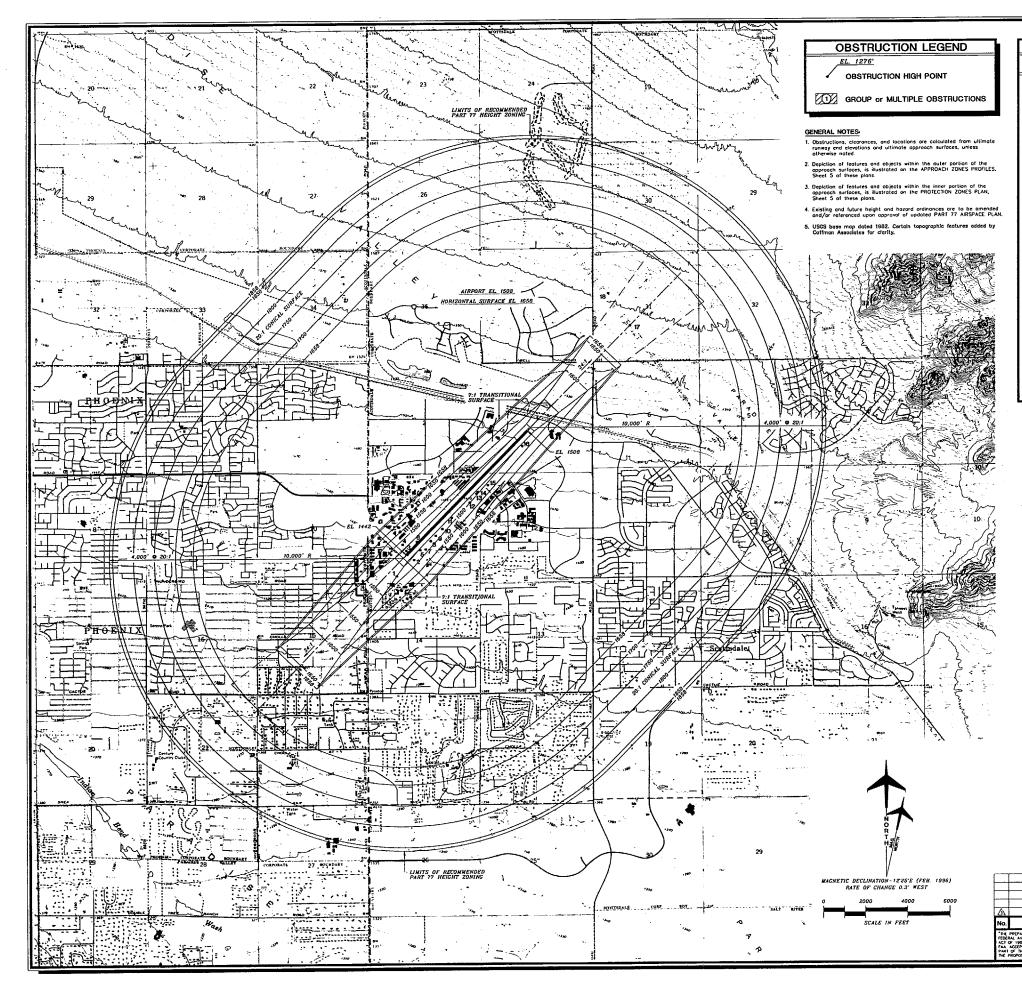
It is prudent for the City to ensure that these plans remain current and that the appropriate authorities be advised whenever significant changes in airport development occur that could affect area land use planning.



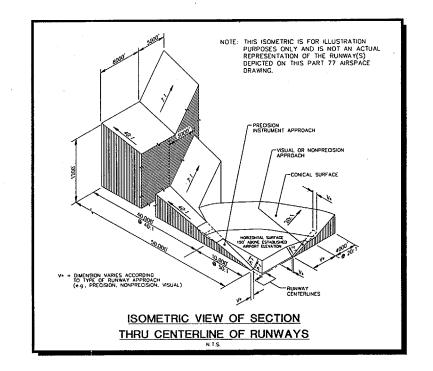








OBSTRUCTION TABLE					
Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1 TREE	1470 MSL	Transitional	1467 MSL	3*	
2 LIGHT STANDARD	1470 MSL	Transitional	1468 MSL	2'	
③ SIGN	1445 MSL	Primary	1442 MSL	3'	
FLOODLIGHT	1478 MSL	Transitional	1477 MSL	1,	
6 WINDSOCK	1459 MSL	Transitional	1454 MSL	5'	Fixed By Function
FLOODLIGHT	1446 MSL	Primary	1445 MSL	11	
7 HANGAR	1480 MSL	Transitional	1479 MSL	1*	
(B) TREE	1485 MSL	Transitional	1463 MSL	22'	
(a) LIGHT STANDARD	1475 MSL	Transitional	1462 MSL	13'	
(1) TREE	1488 MSL	Transitional	1462 MSL	26'	:
(1) OL on POLE	1480 MSL	Transitional	1455 MSL	25'	To Remain Lighted
② OL ATCT	1574 MSL	Transitional	1500 MSL	74°	To Remain Lighted
(3) OL ANEMOMETER	1497 MSL	Transitional	1494 MSL	3'	To Remain Lighted
(4) OL WINDSOCK	1500 MSL	Transitional	1491 MSL	9,	To Remain Lighted
(6) HANGAR	1518 MSL	Transitional	1514 MSL	4'	
(6) WINDSOCK	1518 MSL	Transitional	1513 MSL	5'	Fixed By Function
(7) TRANSMISSION LINES and TOWERS (8) TRANSMISSION LINES and TOWERS	Varies 1705–1723 MSL Varies 1705–1732 MSL	34:1 Approach Harizontal	Varies Varies	Up to 18'	Request Aeronautical Study Request Aeronautical Study
			1	ı	



REVISIONS

SCOTTSDALE AIRPORT

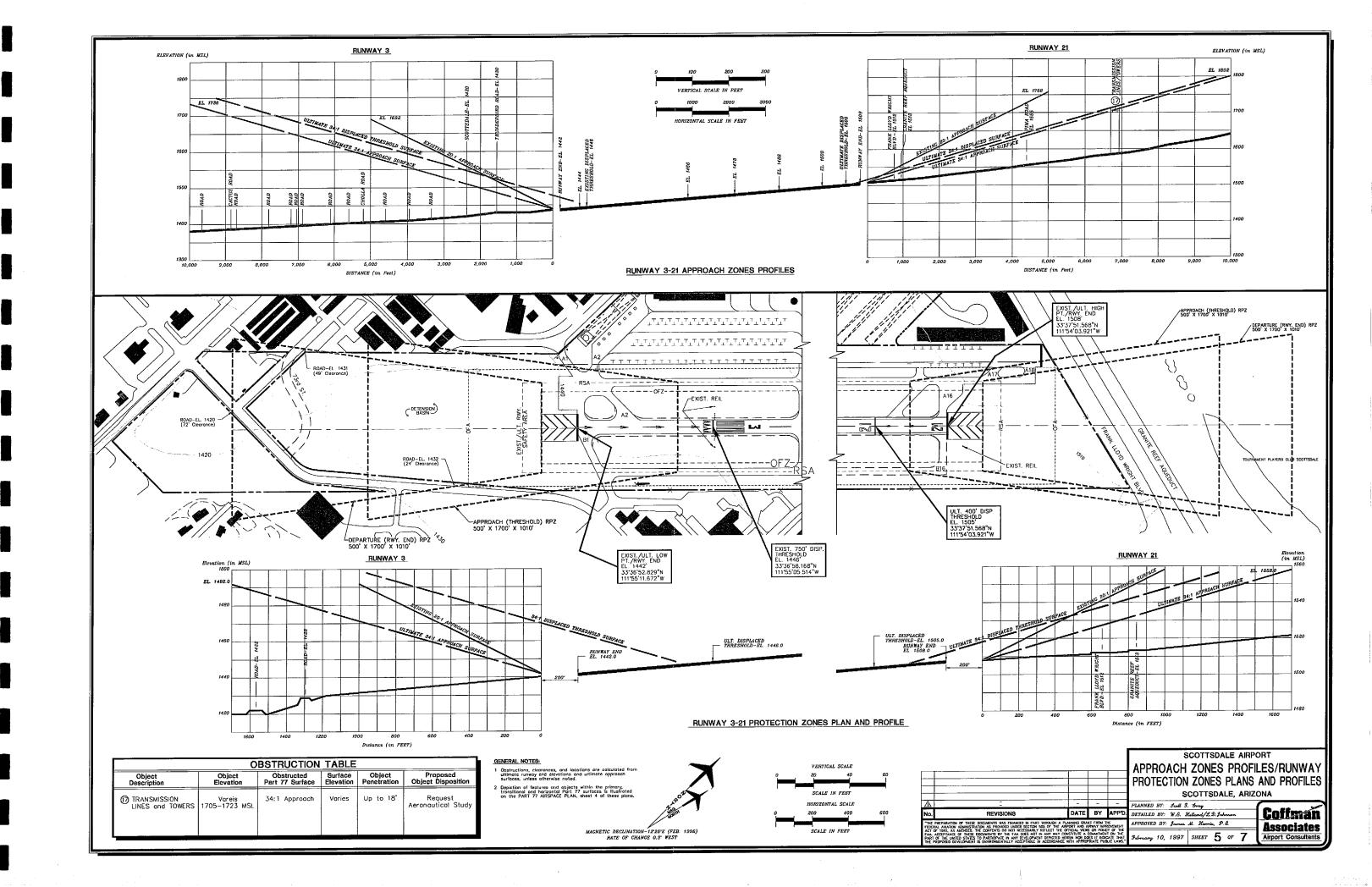
PART 77 AIRSPACE PLAN

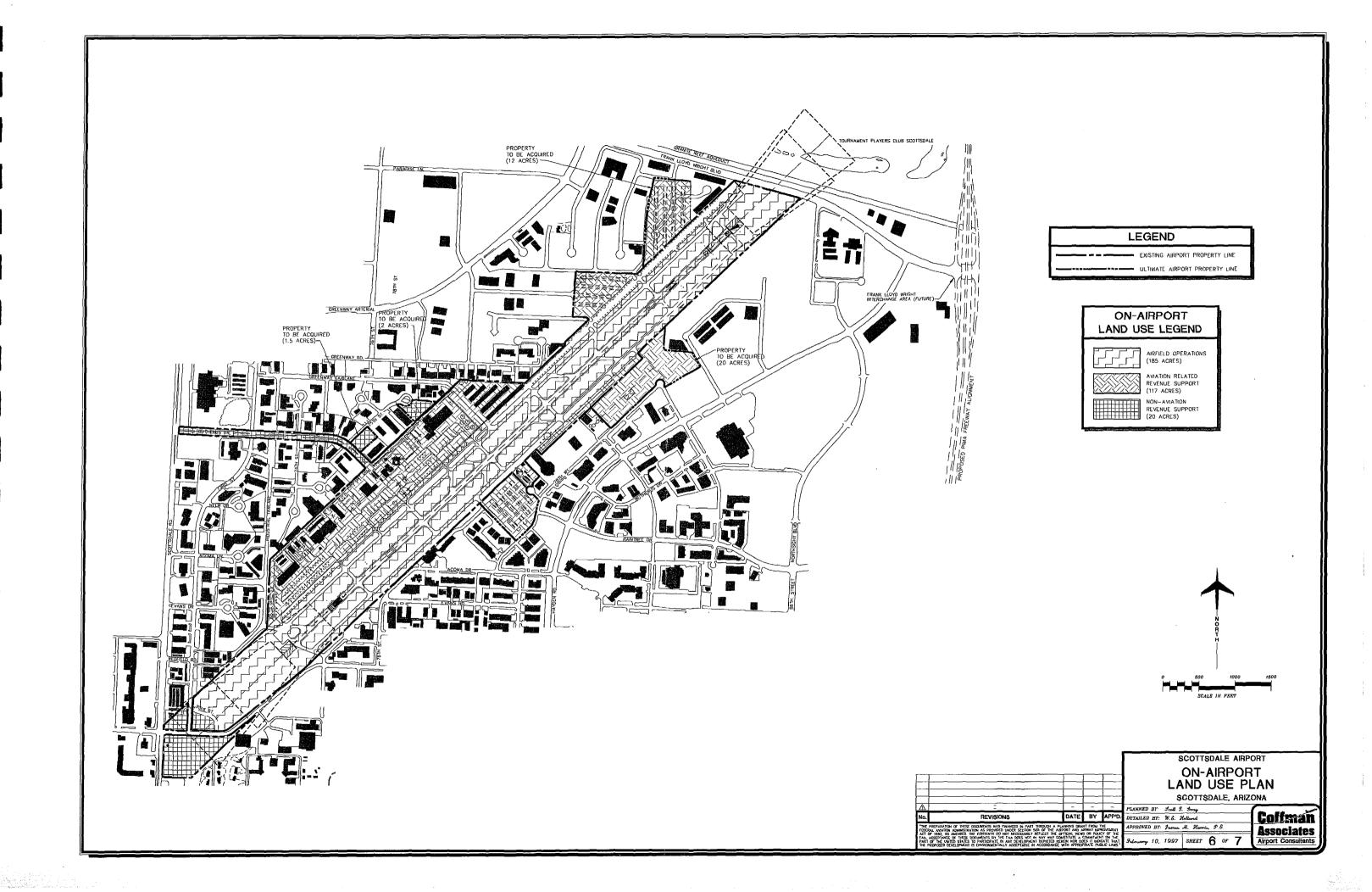
SCOTTSDALE, ARIZONA

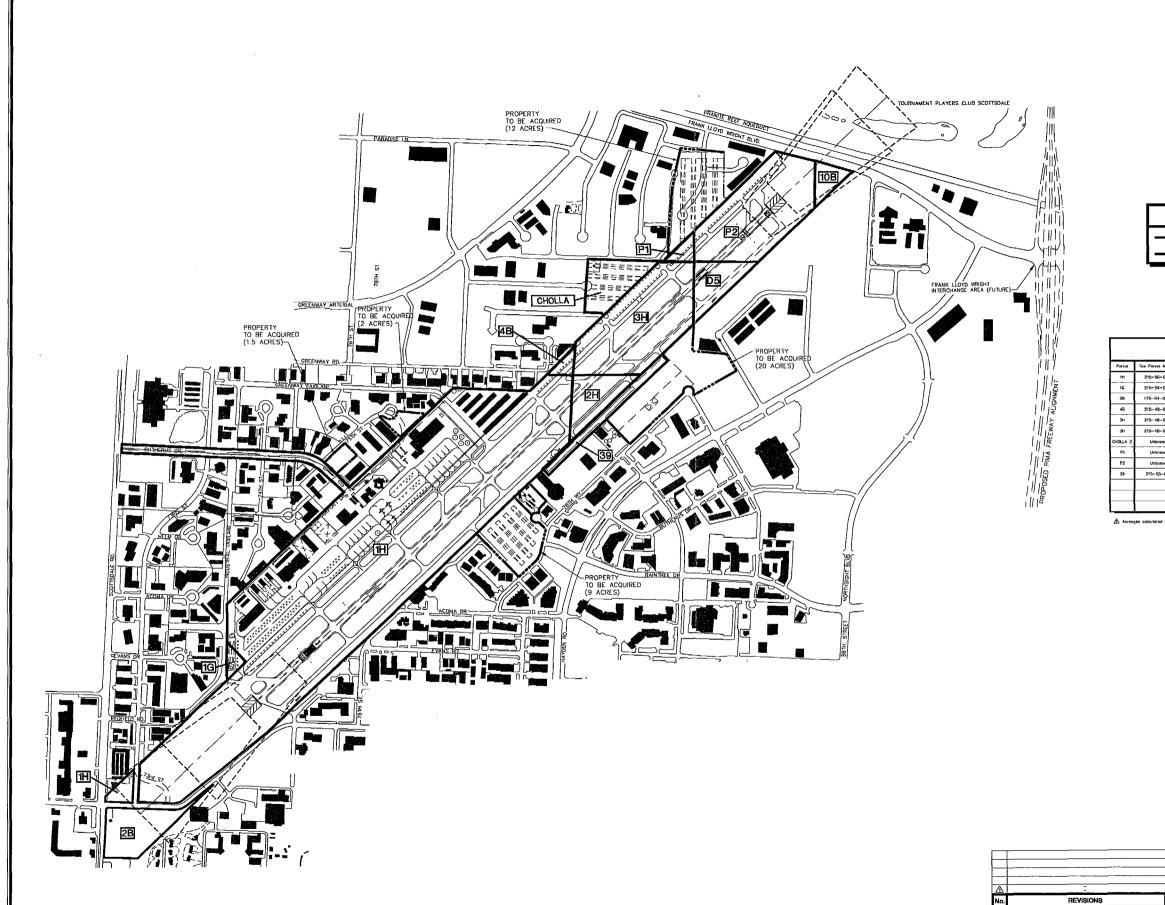
PLANNED BY: Kathrym W. May/Scott F. Sway DETAILED BY: Larry Johnson/W.S. Kelland

IPPROVED BY: Jeanette V. Beffman

Coffman Associates September 25, 1996 SHEET 4 OF 7 Airport Consultant







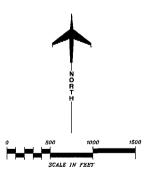
LEGEND

EXISTING AIRPORT PROPERTY LINE

ULTIMATE AIRPORT PROPERTY LINE

	DEED REFERENCE SCOTTSDALE AIRPORT					
Parcel	Tox Parcel Number	Recorder's Number of Deed Reference No	Date Recorded	Acreage (See Note∆)	Description	
18	215-56-001H	Dkt 8126 Page 203	07-12-1966	220.77 Acres	Warranty Beed: Seventh-Day Adventists to City of Scattsdale	
10	215-55-0016	Dkt 15698 Page 504	12-01-1981	1.25 Acres	Warranty Deed: Greenway Park, Ltd. to City of Scottsdale	
29	175-04-002B	Dk1 B126 Page 203	07-12-1988	13.94 Acres	Grant Deed: Seventh-Day Adventists to City of Scottsdate	
48	215-48-004B	86 202841	04-25-1986	1.96 Acras	Warranty Deed Thomas Bratner's Trust to City of Scottsdole	
211	215—48-002н	Dkt 15325 Page 742	06-19-19B1	5.873 Acres	Warranty Deed: The Roman Costnoon Couran of The Diocese of Phoenix to City of Scottsdale	
31	215-48-0034	Cat 7572 Page 651	04-21-1969	34.491 Atres	Order of Condemnation	
CHOLLA 2	Unknown	Book 14847 Page 743	01-09-1981	7.849 Acres	Quit-Claim Deets City of Scottsdale to City of Scottsdale	
Pi	Unknown	88 202841	04-25-1988	1.50 Acres	Womanly Deed: Thomas Brother's Trust to City of Scottadale	
P2	Unknown	86 202641	04-25-1986	26.33 Acres	Worranty Deed: Thomas Brather's Trust to City of Scottsdale	
39	215-55-039	88 14253	03-25-1988	4.4 Acres	Unavailable	

A Acreages calculated based on legal descriptions provided by The City of Scottadale, and are subject to field and records willication.



SCOTTSDALE AIRPORT

AIRPORT PROPERTY MAP

SCOTTSDALE, ARIZONA

REVISIONS DATE BY APP'D. DETAILED BY: W.S. Killond

ARABON OF THIS, DOGMENTS WAS FRANCED IN PART THROUGH A PLANNING SWAT FROM THE APPROVED BY: Gomes M. Horrio,

DETAILED BY: W.E. Hallond

APPROVED BY: James M. Horris, F.E.

Subrusary, 20, 1997 SHEET 7 OF 7

Consultants