Layout Plan Drawings

Grand Canyon National Park Airport
Master Plan Update

Chapter 7- Layout Plan Drawings

The Airport Layout Plan (ALP) set of drawings for the Grand Canyon National Park Airport (GCN) graphically depicts the current and proposed facility expansion at the airport necessary for the continues safe and efficient utilization of the facility while accommodating projected aviation demand. The ALP update for GCN was initiated as part of an update to the airport's master plan. Additionally, the ALP set provides detailed information for the airport sponsor regarding applicable Federal Aviation Regulations (FAR), airport design criteria, as well as airport and runway data including airspace structure topics, terminal area characteristics, land use and airport zoning and airport property interests.

Airport Layout Drawing

The Airport Layout Drawing (ALD) is a single-page drawing depicting existing and ultimate airfield and terminal area development based upon proposed capital improvement recommendations for the short and long-term operation and development of the airport. The ALD illustrates those capital improvements that are intended to maintain a safe and cost-effective facility while at the same time capable of accommodating the current and projected aviation demand of the airport throughout the 20 year planning period. The *Airport Layout Drawing* and associated discussion included below describes the major elements of the ultimate airport development concept. The *Title Sheet* is also included for reference as to the number and name of each sheet within the ALP set.

Runway System

The current runway system consists of a single runway designated 3-21. Runway 3-21 is an 8,999' x 150' asphalt, precision instrument (PI) approach runway equipped with an Instrument Landing System (ILS) to the Runway 3 threshold. Ultimately, in order to accommodate large commercial aircraft operating on 1,800 nautical mile haul lengths, the Runway 3 threshold is programmed to be extended by 1,001 feet to the southwest. The future Runway 3-21 dimensions are expected to be 10,000' x 150'.

Long- range airfield improvements at GCN include the development of a parallel runway to the northwest of Runway 3-21. Designated Runway 4-22, this runway will measure 5,600' x 75' and serve primarily local and transient general aviation aircraft weighing less than 12,500 pounds in an effort to reduce delay and increase capacity beyond forecasted demand levels. Runway 4-22 will be marked as a Basic Visual runway and will have a centerline separation distance from the primary runway of 700 feet.

Navigation Aids (NAVAIDS) and Airfield Lighting

The existing ½ -mile PI and ILS approach capabilities to Runway 3 are to be maintained with the existing medium intensity approach lighting system with runway alignment indicator lighting (MALSR) and ground based NAVAID systems (localizer- LOC, glideslope- GS, and middle marker- MM). Ultimately, the MALSR, GS and MM are expected to be relocated to the southwest with the extension of the Runway 3 end. Runway 21, although

marked as a non-precision instrument (NPI) runway, will continue to provide Basic Visual (BV) approach capabilities to the airport. The proposed parallel Runway 4-22 is expected to provide BV approach capabilities as well. Additionally, the GCN VOR-DME facility located to the northwest of the airfield is expected to remain in place and continue to provide navigational services to and from the airport throughout the initial and intermediate phases of airport development.

The pilot controlled 150 wide Medium Intensity Runway Lighting (MIRL) serving Runway 3-21, as well as the MALSR located at the Runway 3 threshold is expected to be maintained while the runway end indicator lighting (REIL) and threshold lighting serving the Runway 21 will also remain in place. Proposed Runway 4-22 is programmed to be equipped with MIRL, REIL and threshold lighting as well.

The vertical approach slope indicators (VASI) serving Runway 21 are expected to remain operational throughout the planning period while a precision approach path indicator (PAPI) system is programmed to serve runway 4-22.

Taxiway System

The taxiway system at GCN consists of one parallel taxiway, Taxiway P, and multiple runway and airfield access taxiways designated A, B, C, D, E, F and G. Taxiway P is situated 400 feet from the Runway 3-21 centerline, measures 8,999' x 75' and provides direct access between each runway end and the airport apron. Taxiways A and B provide direct access to the Runway 21 threshold; Taxiways C, E and F are connector taxiways providing access between Runway 3-21 and Taxiway P; Taxiway D is a high speed exit taxiway for aircraft arriving to the Runway 21 end; and Taxiway G provides direct access to the Runway 3 threshold. The taxiway system at GCN is currently equipped with Medium Intensity Taxiway Lighting (MITL) and is recommended to remain so throughout the planning period.

Ultimately, with the potential development of a long-range parallel runway, a partial parallel would be developed to serve the new runway, as well as Runway 3-21. The ultimate parallel taxiway would measure 5,600' x 50' to accommodate both Design Group II and III aircraft and would be situated 300 feet from the centerline of the ultimate parallel runway and 400 feet from the centerline of Runway 3-21. The ultimate partial parallel taxiway would be equipped with MITL.

Landside/ Terminal Area Development

A new passenger terminal building, measuring 60,000 square feet, has been programmed for development throughout the planning period to better accommodate existing and forecasted peak hour passenger demand levels. The terminal building, in addition to auto parking area, is expected to be developed along the southern most portion of the terminal area complex located adjacent to the aircraft parking apron. Also, the airport's, AARF, SRE, maintenance and operations services area expected to be relocated from their current locations and ultimately located southwest of the airport apron adjacent to Taxiway D and P in a newly constructed facility to be completed during the initial phase of airport capital development.

The Papillion Grand Canyon Helicopter facility, located to the northeast of the terminal area complex is located within the Runway 21 RPZ and will require ultimate removal and relocation to another location within the landside area most likely during the long-term airport development phase. Although not depicted on the current ALD, the future location will be determined as part of a future terminal area plan project. Just like the Papillion facility, the airport access road to the north of the terminal area will require realignment and relocation due to its location within the OFA for Runway 21.

The residential area located to the east-southeast of the terminal area is ultimately expected to be relocated to the south of the current location to land current owned by the National Forest Service (NFS). The relocation of this residential area will allow for additional residences to be constructed to accommodate State employees at the airport, as well as Federal workers. In addition to residential development, the land south of the on-airport residential area will also be reserved for potential long-range development of a railroad staging area, passenger depot and auto parking facilities by Grand Canyon Railroad as part of an initial to reduce vehicular traffic into and out of the National Park.

Land Acquisition

The ultimate extension of the runway 3 end to the southwest will require a parcel of approximately 2.5 acres of NFS land, within the Kaibab National Forest, to be acquired to accommodate to the ALS and MM facility. The acreage required to relocate to the airport's residential area and accommodate a long-range railroad depot, staging area and parking facilities will total approximately 60 acres of NFS property, also a part of the Kaibab National Forest.

Airport Airspace Drawing

The Airport Airspace Drawing is based upon Federal Aviation Regulation (FAR) Part 77, *Objects Affecting Navigable Airspace*. The provisions of FAR Part 77 have been enacted to protect the airport's airspace infrastructure from objects and structures that represent an obstruction to air navigation by establishing imaginary airspace surfaces to provide guidance in an attempt to control the heights of objects in the vicinity of the airport. When penetrated, these imaginary surfaces identify an object as an obstruction or hazard to air navigation. The ***Airport Airspace Drawing*** and ***Airport Airspace/ Approach Profiles Drawing(s)***, depict GCN's Part 77 surfaces and provide plan and profiles views as they relate to GCN. The airspace drawing is based specifically upon the planned runway lengths, as well as planned instrument approach procedures for each runway end.

Runway 3-21 is depicted as having an ultimate 50:1 PI ½-mile visibility approach capability for the Runway 3 end while the Runway 21 end will continue to accommodate 20:1 BV approaches. The proposed parallel Runway 4-22 is depicted ultimately as having 20:1 BV approach capabilities with minimum visibilities not less than 1-mile.
During the course of drafting the airspace drawing, it was discovered that, according to the National Oceanographic and Atmospheric Administration's (NOAA) obstruction chart, the

Part 77 surfaces for GCN are penetrated by numerous natural terrain features including ground and wooded areas.

Inner Portion of the Approach Surface Drawing(s)

These drawings are intended to provide a detailed view of the inner portion of the Part 77 approach surfaces. The Inner Portion of the Approach Surface Drawings provide a large scale profile and plan view of the inner approach surfaces for all runway ends and facilitate identification of roadways, utilities, railroads, structures, as well as existing and potential property interests. Also, the inner approach drawings detail the size and location of the Runway Safety Areas (RSA), Object Free Area (OFA), Runway Protection Zones (RPZ), Obstacle Free Zones (ROFZ), Threshold Siting Surface (TSS), as well as illustrate the current and future location of the runway ends. The *Inner Portion of the Approach Surface Drawing(s)* detail the inner approach surfaces for the runway system at GCN and are based upon the planned runway length and the type of approach established to each runway end.

Terminal Area Drawing

The *Terminal Area Drawing* present the landside/ terminal area's existing configuration, as well as future development areas at the airport.

Passenger Terminal Building
The 8,468 square foot passenger terminal building is located south of the airport's parking apron adjacent to the Runway 21 threshold. Ultimately, the passenger terminal building is expected to be relocated to the southern portion of the terminal area adjacent to the apron and reconstructed to accommodate approximately 60,000 square feet of space. Auto parking facilities associates with the new terminal building are expected to number in excess of 400 spaces and total nearly 138, 300 square feet of area.

Airport Aircraft Apron
The approximate 30,000 square yard (270,000 square feet) concrete and asphalt parking apron is expected to remain heavily utilized and may undergo minor operational modifications throughout the planning period. Additional apron construction is expected to take place at the southern most portion of the apron and is expected to add nearly 8,400 square yards of paved area.

Aircraft Hangar Facilities
Given the high number of air tour aircraft coupled with expansive apron area and the low concentration of general aviation activity at the airport, no notable aircraft hangar construction is expected throughout the planning period.

Air Traffic Control Facilities (ATCT)
Construction on the new GCN ATCT was completed in 2002 and commissioned in March of 2003. It replaced the former control tower located across the airfield situated northwest of Ruwnay 3-21 near the GCN VOR-DME station. The GCN ATCT stands at an elevation of approximately 121 feet above ground level (6,750' above mean sea level) and is located south of the airport apron and Taxiway D. The GCN ATCT provides unrestricted line-of-sight of the Airport Operations Area (AOA) and Airport Movement Area (AMA) and is expected to accommodate demand throughout the 20 year planning period.

Airport Support Facilities
GCN support facilities consist of Aircraft Rescue and Firefighting (ARFF), Snow Removal and Maintenance Equipment (SRE) and fuel storage facilities. GCN's Index A(1) and Index B(2) capable ARFF facility is located immediately north of the terminal building and occupies approximately 2,150 square feet of structure space. GCN's ARFF facilities and services are expected to relocate to the joint-use ARFF, SRE, maintenance and operations facility to be located southwest of the airport apron adjacent to Taxiway D and P to be completed during the initial phase of airport capital development.

GCN's SRE, maintenance and operations services are located within 5,000 square foot of building space situated southwest of the airport's administration building. Ultimately, these services will be relocated to the ARFF, SRE, maintenance and operations facility to be constructed during the 0-5 year development period.

GCN's fuel facilities are located on the northernmost portion of the airport's apron area adjacent to the Grand Canyon Airlines FBO hangar. The fuel storage facility consists of above ground tanks capable of storing 48,000 gallons or 100 LL, Jet A, as well as diesel and unleaded fuel are sufficient to provide fuel activities during peak periods of airport operations. GCN's fuel farm is expected to remain in place throughout the planning period.

Land Use Drawing

The *Land Use Drawing* depicts the existing and recommended land uses within the existing and ultimate airport property boundary. This drawing typically would include the future 65 day-night sound level (dNL) noise contour and the affected areas outside the airport property boundary. The main purpose of the Land Use Drawing is to provide the airport sponsor a plan to coordinate land uses conducive to airside development and those landside areas available to be leased for revenue producing purposes. Lastly, the Land

(1) ARFF Index A- Capable of responding to incident/ accident involving aircraft less than 90 feet in length (CRL, DHC-6-300, Beech 99).
(2) ARFF Index B- Capable of responding to incident/ accident involving aircraft 90-126 feet in length (Boeing 737 and MD-80 series aircraft).

Use Drawing provides guidance to local community and county authorities for establishing compatible land use and zoning regulations in the vicinity of the airport.

Airport Property Map

The illustration entitled *Exhibit 'A' Property Map* presents the existing and ultimate relevant airport property tracts and easements including the acreage of each parcel, how the airport property was acquired (e.g., Federal AIP funds, military/ government surplus, local funding, etc.), when each tract of land was acquired and the existing ownership status of proposed property acquisitions. Additionally, the property map serves as a guide for the airport sponsor to analyze the current and future utilization of land acquired with Federal funding grants. GCN's airport property consists of two tracts totaling over 864 acres of land held as fee simple ownership by the ADOT, Aeronautics Division.

As part of the future capital improvement program for GCN, it is recommended that approximately 2.5 acres of land be acquired in fee-simple ownership to the southwest of existing property boundary to accommodate ALS and ILS components. This parcel of land is referenced on the Exhibit 'A' as tract U-1. Additionally, approximately 60 acres located to the south of the terminal area complex is recommended to be acquired to accommodate future airport and Federal employee housing, as well as potential long-range development of railroad and auto parking facilities. This parcel of land is referenced on the Exhibit 'A' as tract U-2.

Airport Influence Area Drawing

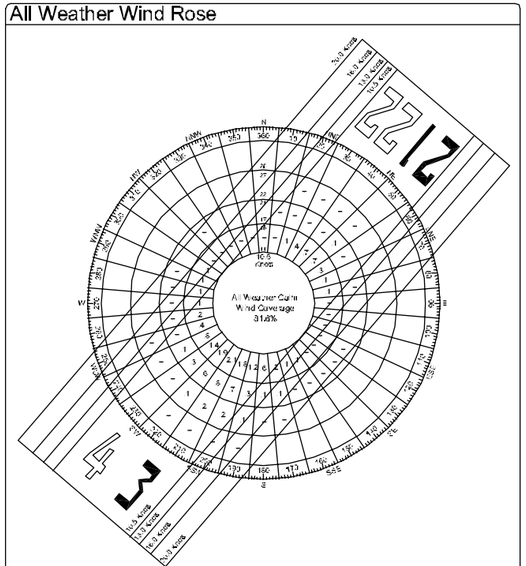
The State of Arizona, in 1997, enacted legislation enabling governing bodies and municipalities the ability to establish Airport Influence Area's (AIA) to aid in notifying owners and potential purchasers of property that areas adjacent to an airport are subject to aircraft noise and overflight. In an effort to control the encroachment of future development around the Airport, the *Airport Influence Drawing* will be established and based upon the Part 77 horizontal surface as the official AIA for the airport.

Airport Layout Plan
for the
Grand Canyon National Park Airport
Grand Canyon, Arizona

Index of Drawings

1. Title Sheet
2. Airport Layout Drawing
3. Airport Airspace Drawing
4. Airport Airspace Drawing (con't.)
5. Runway 3 Inner Portion of the Approach Surface Drawing
6. Runway 21 Inner Portion of the Approach Surface Drawing
7. Runway 4-22 Inner Portion of the Approach Surface Drawing
8. Terminal Area Drawing
9. Land Use Drawing
10. Exhibit 'A' Property Map
11. Airport Influence Area Drawing

All Weather Wind Rose

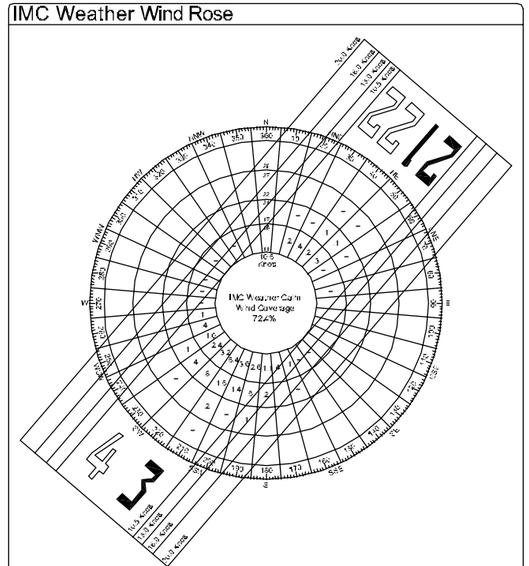


Crosswind Component Corresponding ARC

Runway	10.5 Knots (VFR & SR)	13.0 Knots (VFR & SR)	16.0 Knots (VFR, SR, CI or SR)	20.0 Knots (VFR or SR)
Runway 3-21/ Runway 4-22	93.81%	99.46%	99.92%	99.99%

GCN All-Weather wind rose information derived from the National Oceanographic and Atmospheric Administration (NOAA), National Climatic Data Center (NCDC); Asheville, NC: Grand Canyon National Park Airport; (1993-2002).

IMC Weather Wind Rose



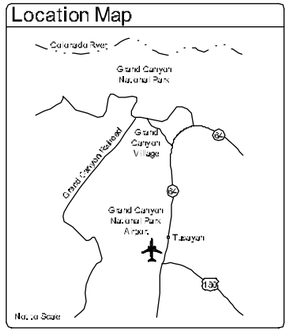
Crosswind Component Corresponding ARC

Runway	10.5 Knots (VFR & SR)	13.0 Knots (VFR & SR)	16.0 Knots (VFR, SR, CI or SR)	20.0 Knots (VFR or SR)
Runway 3-21/ Runway 4-22	93.98%	99.63%	99.98%	100.00%

GCN IMC weather wind rose information derived from the National Oceanographic and Atmospheric Administration (NOAA), National Climatic Data Center (NCDC); Asheville, NC: Grand Canyon National Park Airport; (1993-2002).

Vicinity Map

Location Map



BUCHER, WILLIS & RATLIFF CORPORATION
ENGINEERS | PLANNERS | ARCHITECTS

Kimley-Horn and Associates, Inc.

Arizona Department of Transportation
Aeronautics Division

Grand Canyon National Park Airport

Title Sheet

Planned By: MAW | Drawn By: MAW | Reviewed By: BCW

FAA AIP Project No: 03-04-0019-17&18

BWR Project No: 2003-03401

Sheet 1 of 11

July 29, 2005

Runway Data

RUNWAY DETAILS	RUNWAY 3-21 EXISTING	RUNWAY 3-21 ULTIMATE	RUNWAY 4-22 EXISTING	RUNWAY 4-22 ULTIMATE
Runway Category/ Airplane Design Group	C-III	Same	–	B-II
Runway True Azimuth	40.65° True	Same	–	40.65° True
Maximum Runway Elevation(MSL)	6,606.7 feet	Same	–	–
Runway Dimensions	8,999' x 150'	10,000' x 150'	–	5,000' x 75'
Runway Instrumentation/ FAR Part77Category	Precision/Visual	Same	–	Visual/Visual
Approach Visibility Minimums	1/2- Mile/ 1- Mile	Same	–	1- Mile/ 1- Mile
Approach Slope	50:1/20:1	Same	–	20:1/20:1
Displaced Threshold	None	Same	–	None
Runway Stopway	None	200' x 200' (Rwy 3)	–	None
Runway Safety Area(RSA)	10,999' x 500'	12,000' x 500'	–	5,200' x 150'
RSA Distance Beyond Runway End	1,000'	Same	–	300'
Runway Object Free Area(OFA)	10,999' x 800'	12,000' x 800'	–	5,200' x 500'
OFA Distance Beyond Runway End	1,000'	Same	–	300'
Runway Obstacle FreeZone(ROFZ)	9,399' x 400'	10,400' x 400'	–	5,000' x 400'
ROFZ Distance Beyond Runway End	200'	Same	–	200'
Runway Pavement Strength (Thousands of lbs)	88(S), 108 (D), 180(DT)	Same	–	12.5 (S)
Runway Pavement Material	Asphalt	Same	–	Asphalt
Runway Markings	Precision/Non-Precision	Same	–	Visual/Visual
Runway Gradient	0.8%	Same	–	1.07%
Runway Lighting	MIRL	Same	–	MIRL
Approach Lighting System(ALS)	MALSR (Rwy 3)	Same	–	None
Runway ℄ to Parallel Taxiway ℄ Separation	407'	Same	–	300'
Runway ℄ to Parallel Runway ℄ Separation	–	700'	–	700'
Taxiway ℄ to Fixed or Movable Object	93'	Same	–	65.5'
Taxiway ℄ to Parallel Taxiway ℄ Separation	152'	Same	–	105'
Taxiway Pavement Material	Asphalt	Same	–	Asphalt
Taxiway Lighting	MITL	Same	–	MITL
Taxiway Markings	Centerline	Same	–	Centerline
Taxiway Object Free Area Width	186'	Same	–	131'
Taxiway Safety Area Width	118'	Same	–	79'
Taxiway Wingtip Clearance	34'	Same	–	26'
NAVAIDS	VOR-DME, ILS, GPS	Same	–	None
Approach Visual Aids	VASI-4L (Rwy 21)	Same	–	PAPI-4L/ PAPI-4L
Touchdown Zone Elevation(TDZE)	6,566.2'/6,606.7'	Same	–	6,620.0'/6,630.0'
Takeoff Run Available(TORA)	N/A	Same	–	N/A
Accelerate-Stop Distance Available(ASDA)	N/A	Same	–	N/A
Landing Distance Available(LDA)	N/A	Same	–	N/A
Takeoff Distance Available(TODA)	N/A	Same	–	N/A

Airport Data

AIRPORT INFORMATION	EXISTING	ULTIMATE
Airport Name (ICAO Identifier)	Grand Canyon National Park Airport(GCN)	Same
Airport Reference Code(ARC)	C-III	Same
Range and Township/ Sections	T 30 N, R 2 E/ 23, 24, 25, 26, 27, 34,35	Same
County	Coconino County,AZ	Same
Airport Sponsor	ADOT, Aeronautics Division	Same
NPIAS Category	Primary (PR) Commercial Service	Same
Design Aircraft (Type/ Model)	Boeing 737-800	Same
ARFF Index	Index B	Same
Airport Elevation- Mean Sea Level(MSL)	6,606.7 feet	Same
Airport Reference Point(ARP)	36-57-08.50 N, 112-08-49.10W	36-57-12.20 N, 112-08-49.09W
Mean Maximum Monthly Air Temperature(F)	84° F (July)	Same
Airport and Terminal NAVAIDS	VOR-DME	Same
Instrument Approach Procedures	ILS, VOR-DME/GPS	Same
Weather Reporting System	ASOS- III	Same

Existing and ultimate ARP coordinates reflect NGS 405 Survey dated 11-05-99 in North American Datum(NAD 83) and North American Vertical Datum (NAVD 88).

PACS & SACS

ID NO.	GEODETIC COORDINATES	MARKER	ELEV.
PACS AC6805	36-57-51.189 N, 112-08-01.121W	MR	6,619.5 feet
SACS AC6807	36-56-33.904 N, 112-09-20.570W	SD	6,530.1 feet
SACS AC6806	36-57-05.551 N, 112-08-46.202W	SD	6,581.0 feet

PACS- Primary Airport Control Station
SACS- Secondary Airport Control Station
MR- Metal Rod
SD- Survey Disk

Runway End Coordinates

RUNWAY END	EXISTING	ULTIMATE
Runway 3	36-56-34.74 N, 112-09-24.70W	36-56-27.20 N, 112-09-32.66W
Runway 21	36-57-42.23 N, 112-08-13.42W	Same
Runway 4	–	36-57-04.72 N, 112-09-04.24W
Runway 22	–	36-57-46.74 N, 112-08-19.67W

Existing and ultimate runway end coordinates reflect NGS 405 Survey dated 11-05-99 in North American Datum (NAD 83) and North American Vertical Datum (NAVD 88).

General Notes

1. There are No OFZ Object Penetrations.

2. There are No Threshold Siting Surface Object Penetrations.

3. The existing passenger terminal building is inadequate to accommodate future peak hour passenger demand and is recommended to be replaced. The southwestern portion of the terminal area complex, spanning the southwestern apron area, will be ultimately reserved for future aviation/ terminal building expansion area. Future location, layout, capital outlays, project scheduling and space allocations will be generated as part of a future terminal area plan project.

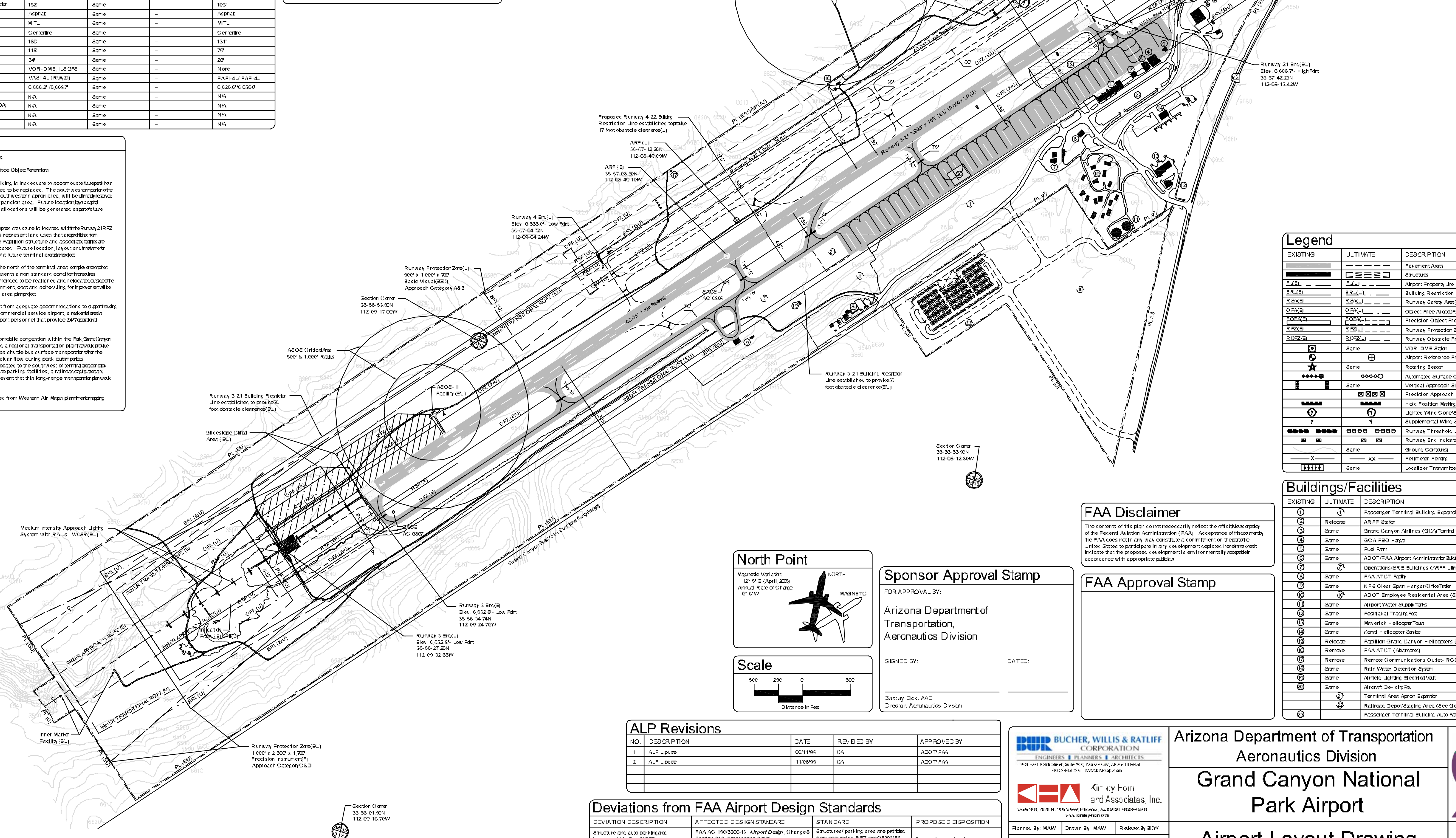
4. The Papillon Grand Canyon Helicopter structure is located within the Runway 21 RPZ. Places of public assembly such as this represent land uses that are prohibited from occupying space within the RPZ. The Papillon structure and associated facilities are recommended to be removed and relocated. Future location, layout and timeframe for relocation will be determined as part of a future terminal area plan project.

5. The airport access road located to the north of the terminal area complex encroaches upon the Runway 21 OFA which represents a non standard condition that requires mitigation. The access road is recommended to be realigned and relocated outside of the future Runway 21 OFA. Ultimate alignment, cost and scheduling for improvements will be determined as part of a future terminal area plan project.

6. Due to the remoteness of the Airport from adequate accommodations to support housing to meet the unique requirements of a commercial service airport, a residential area is designated to support the FAA and airport personnel that provide 24/7 operational capability for the Airport.

7. As part of an initiative to reduce automobile congestion within the Park, Grand Canyon Railroad, located in Williams, proposed a regional transportation plan that would provide railroad access to the airport, as well as shuttle bus surface transportation from the Grand Canyon Village to manage vehicular flow during peak tourism periods. Approximately 25 acres of NPS land located to the southwest of terminal area complex would be acquired to accommodate auto parking facilities, a railroad staging area and depot, as well as a rail spur line in the event that this long-range transportation plan would be successfully implemented.

8. Contour elevation information derived from Western Air Maps planimetric mapping (June 2005).



Legend

EXISTING	ULTIMATE	DESCRIPTION
		Pavement Areas
		Structures
PL(E)	PL(U)	Airport Property Line
BRL(E)	BRL(U)	Building Restriction Line(BRL)
RSA(E)	RSA(U)	Runway Safety Area(RSA)
OFA(E)	OFA(U)	Object Free Area(OFA)
POFA(E)	POFA(U)	Precision Object Free Area(POFA)
RPZ(E)	RPZ(U)	Runway Protection Zone(RPZ)
ROFZ(E)	ROFZ(U)	Runway Obstacle FreeZone(ROFZ)
	Same	VOR-DME Station
		Airport Reference Point(ARP)
	Same	Rotating Beacon
		Automated Surface Observing System(ASOS)
	Same	Vertical Approach Slope Indicators(VASI)
		Precision Approach Path Indicators(PAPI)
		Hold Position Marking
		Lighted Wind Cone/Segmented Circle
		Supplemental Wind Sock Locations
		Runway Threshold Lighting
		Runway End Indicator Lights(REIL)
	Same	Ground Contour(s)
——X——	—— XX ——	Perimeter Fencing
	Same	Localizer Transmitter Antenna

Buildings/Facilities

EXISTING	ULTIMATE	DESCRIPTION
1	1	Passenger Terminal Building Expansion Area(See General Note No.3)
2	Relocate	ARFF Station
3	Same	Grand Canyon Airlines (GCA)/Terminal
4	Same	GCA FBO Hangar
5	Same	Fuel Farm
6	Same	ADOT/FAA Airport Administration Building
7	7	Operations/SRE Buildings (ARFF- Ultimate)
8	Same	FAA ATCT Facility
9	Same	NPS Clear Span Hangar/Office Trailer
10	10	ADOT Employee Residential Area (See General Note No.6)
11	Same	Airport Water Supply Tanks
12	Same	Residential Trailer Pad
13	Same	Maverick Helicopter Tours
14	Same	Kenai Helicopter Service
15	Relocate	Papillon Grand Canyon Helicopters (See General Note No.4)
16	Remove	FAA ATCT (Abandoned)
17	Remove	Remote Communications Outlet- RCO (Abandoned)
18	Same	Rain Water Detention System
19	Same	Airfield Lighting Electrical Vault
20	Same	Aircraft De-icing Pad
	21	Terminal Area Apron Expansion
	22	Railroad Depot/Staging Area (See General Note No.7)
23		Passenger Terminal Building Auto Parking Area

FAA Disclaimer

The contents of this plan do not necessarily reflect the official views or policy of the Federal Aviation Administration (FAA). Acceptance of this document by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted herein nor does it indicate that the proposed development is environmentally acceptable in accordance with appropriate public law.

North Point

Magnetic Variation 12° 6' E (April, 2005)
Annual Rate of Change 0° 6' W

NORTH
MAGNETIC

Scale

500 250 0 500
Distance in Feet

Sponsor Approval Stamp

FOR APPROVAL BY:

Arizona Department of Transportation, Aeronautics Division

SIGNED BY: DATED:

Barclay Dick, AAE
Director, Aeronautics Division

FAA Approval Stamp

ALP Revisions

NO.	DESCRIPTION	DATE	REVISED BY	APPROVED BY
1	ALP Update	06/11/96	CA	ADOT/FAA
2	ALP Update	11/06/96	CA	ADOT/FAA

Deviations from FAA Airport Design Standards

DEVIATION DESCRIPTION	AFFECTED DESIGN STANDARD	STANDARD	PROPOSED DISPOSITION
Structure and auto parking area located within Rwy 21 RPZ	FAA AC 150/5300-13, *Airport Design*, Change 8 Section 212, Paragraphs 2(a)(b)	Structures/ parking area are prohibited from occupying RPZ and OFA/XOFA	Removal and relocation
Access road located within the Rwy 21 OFA/XOFA	FAA AC 150/5300-13, Airport Design Change 8 Section 307, *Runway Object Free Area*	Access road is not to be placed within the OFA/XOFA	Realignment and relocation

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Planned By: MAW | Drawn By: MAW | Reviewed By: BCW
FAA AIP Project No. 03-04-0019-176 & 18
BWR Project No. 2003-007401

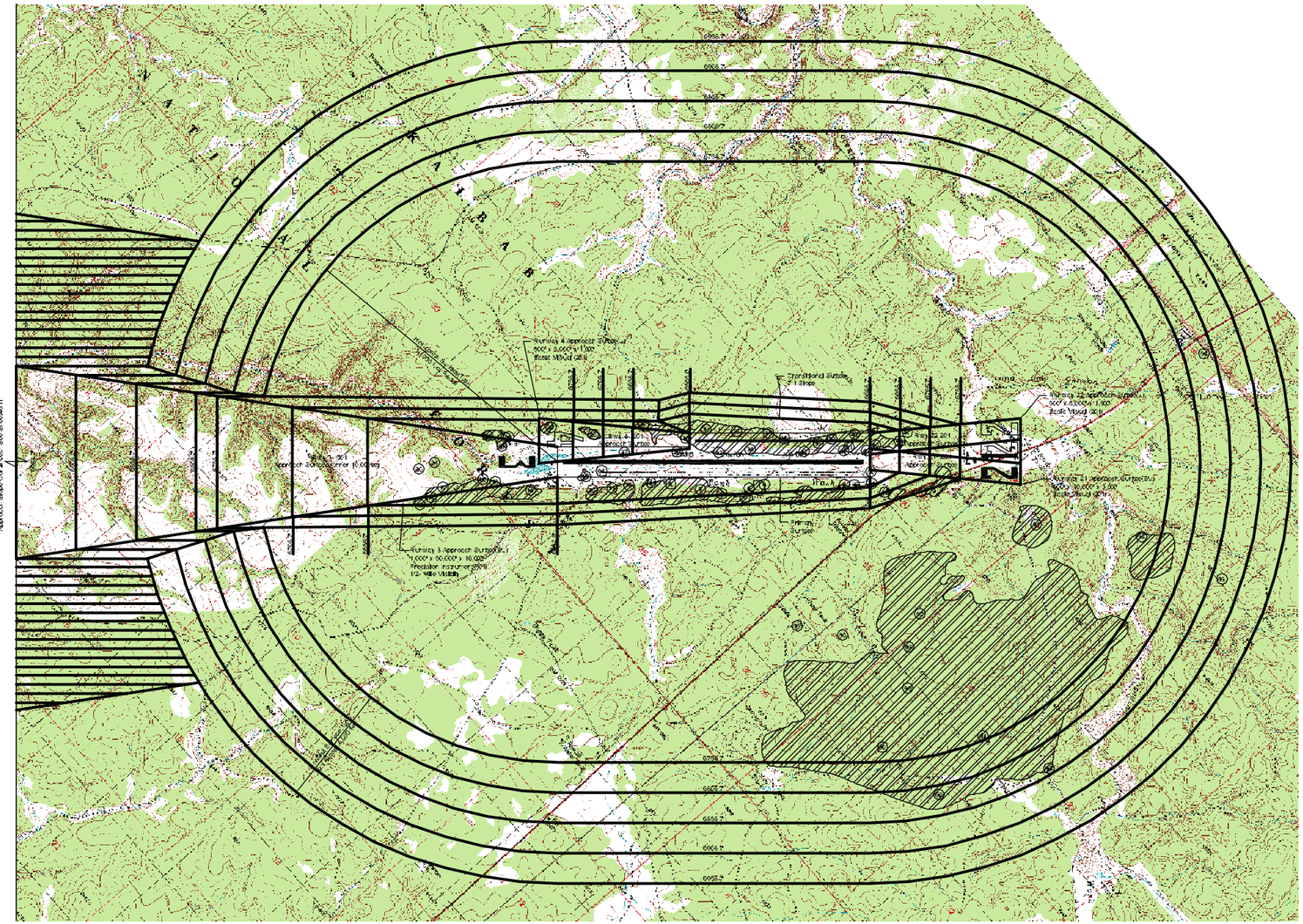
Arizona Department of Transportation
Aeronautics Division

Grand Canyon National Park Airport

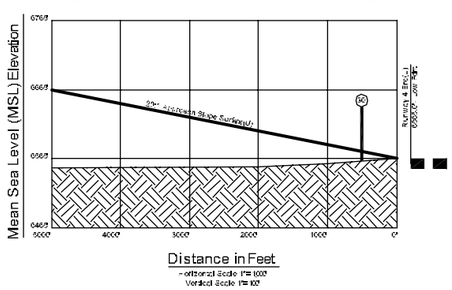
Airport Layout Drawing

Sheet 2 of 11

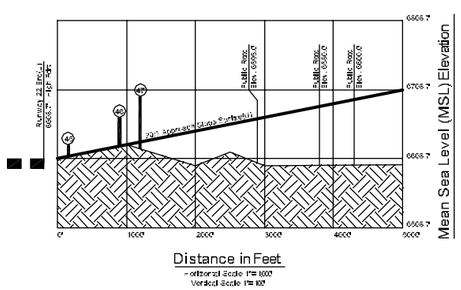
Sept. 28, 2005



Runway 4 Approach Profile View



Runway 22 Approach Profile View

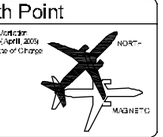


FAR Part 77 Obstruction Table

ITEM	DESCRIPTION	ELEVATION	VIOLATION/ PART 77 SURFACE	MITIGATION
1	Antenna	6657.0 feet	11.1 feet Transitional Surface	Relocate
2	Tree	6696.0 feet	52.1 feet Transitional Surface	Remove/ Top
3	Tree	6664.0 feet	65.5 feet Transitional Surface	Remove/ Top
4	Tree	6662.0 feet	46.7 feet Transitional Surface	Remove/ Top
5	Tree	6694.0 feet	38.7 feet Transitional Surface	Remove/ Top
6	Tree	6684.0 feet	45.5 feet Transitional Surface	Remove/ Top
7	Tree	6675.0 feet	57.0 feet Transitional Surface	Remove/ Top
8	Tree	6630.0 feet	71.0 feet Transitional Surface	Remove/ Top
9	Tree	6633.0 feet	71.6 feet Transitional Surface	Remove/ Top
10	Tree	6630.0 feet	69.0 feet Transitional Surface	Remove/ Top
11	Tree	6644.0 feet	59.7 feet Transitional Surface	Remove/ Top
12	Tree	6647.0 feet	54.2 feet Transitional Surface	Remove/ Top
13	Brush	6548.0 feet	15.2 feet Primary Surface	Remove
14	Tree	6635.0 feet	41.3 feet Transitional Surface	Remove/ Top
15	Tree	6615.0 feet	43.0 feet Approach Surface	Remove/ Top
16	Tree	6624.0 feet	41.0 feet Approach Surface	Remove/ Top
17	Tree	6671.0 feet	61.8 feet Approach Surface	Remove/ Top
18	Tree	6691.0 feet	68.0 feet Transitional Surface	Remove/ Top
19	Tree	6672.0 feet	13.3 feet Transitional Surface	Remove/ Top
20	Tree	6650.0 feet	24.6 feet Approach Surface	Remove/ Top
21	Tree	6647.0 feet	32.2 feet Approach Surface	Remove/ Top
22	Tree	6616.0 feet	35.9 feet Transitional Surface	Remove/ Top
23	Tree	6612.0 feet	42.0 feet Approach Surface	Remove/ Top
24	Tree	6625.0 feet	46.1 feet Transitional Surface	Remove/ Top
25	Tree	6646.0 feet	19.6 feet Transitional Surface	Remove/ Top
26	Tree	6627.0 feet	34.2 feet Transitional Surface	Remove/ Top
27	ASOS Antenna	6574.0 feet	41.2 feet Primary Surface	Reset/ Light
28	Tree	6664.0 feet	1.0 feet Transitional Surface	Remove/ Top
29	Tree	6570.0 feet	43.2 feet Primary Surface	Remove/ Top
30	Tree	6630.0 feet	67.0 feet Approach Surface	Remove/ Top
31	Tree	6665.0 feet	50.0 feet Transitional Surface	Remove/ Top
32	Tree	6534.0 feet	23.0 feet Primary Surface	Remove/ Top
33	Tree	6655.0 feet	111.4 feet Transitional Surface	Remove/ Top
34	Tree	6600.0 feet	30.0 feet Primary Surface	Remove/ Top
35	Tree	6590.0 feet	100.0 feet Primary Surface	Remove/ Top
36	Abandoned ADOT	6700.0 feet	120.0 feet Primary Surface	Remove
37	Tree	6601.0 feet	5.0 feet Primary Surface	Remove/ Top
38	Tree	6573.0 feet	77.0 feet Primary Surface	Remove/ Top
39	Tree	6576.0 feet	74.0 feet Primary Surface	Remove/ Top
40	Tree	6626.0 feet	24.0 feet Primary Surface	Remove/ Top
41	Segmented Circle	6637.0 feet	11.0 feet Primary Surface	Relocate
42	Tree	6717.0 feet	108.3 feet Primary Surface	Remove/ Top
43	Tree	6631.0 feet	22.3 feet Primary Surface	Remove/ Top
44	Tree	6729.0 feet	100.1 feet Transitional Surface	Remove/ Top
45	Tree	6628.0 feet	11.3 feet Approach Surface	Remove/ Top
46	Tree	6668.0 feet	10.3 feet Approach Surface	Remove/ Top
47	Tree	6699.0 feet	20.3 feet Approach Surface	Remove/ Top
48	Tree	6721.0 feet	12.3 feet Transitional Surface	Remove/ Top
49	Antenna	6655.0 feet	14.6 feet Transitional Surface	Reset/ Light
50	Windsock	6623.0 feet	11.4 feet Transitional Surface	Reset/ Light
51	Tree	6775.0 feet	16.3 feet - orizontal Surface	Remove/ Top
52	Tree	6800.0 feet	41.3 feet - orizontal Surface	Remove/ Top
53	Tree	6882.0 feet	7.3 feet Conical Surface	Remove/ Top
54	Antenna	6851.0 feet	9.3 feet Conical Surface	Reset/ Light
55	Tree	6701.0 feet	2.3 feet - orizontal Surface	Remove/ Top
56	Tree	6777.0 feet	18.3 feet - orizontal Surface	Remove/ Top
57	Tree	6807.0 feet	48.3 feet - orizontal Surface	Remove/ Top
58	Tree	6808.0 feet	49.3 feet - orizontal Surface	Remove/ Top
59	Tree	6826.0 feet	67.3 feet - orizontal Surface	Remove/ Top
60	Tree	6794.0 feet	35.3 feet - orizontal Surface	Remove/ Top
61	Tree	6850.0 feet	91.3 feet - orizontal Surface	Remove/ Top
62	Tree	6832.0 feet	8.3 feet Conical Surface	Remove/ Top
63	Tree	6890.0 feet	2.3 feet Conical Surface	Remove/ Top
64	Windsock	6541.0 feet	8.2 feet Primary Surface	Reset/ Light

North Point

Magnetic Variation
12° 9' E (April 2005)
Annual Rate of Change
0° 6' W



Scale

2,000 1,000 0 2,000

Distance in Feet

General Notes

1. Contour elevation information derived from the following: Arizona ...83875 Hilltop topographic quadrangle maps: Molly Hill Draw, Molle Tank, Miller Tank, Mother Dam, Red Slope, Red Slope SW, Hackberry Hill, Jade Canyon, Tusayan Bay, Tusayan West, Metzger Tank and Bow & Rand.

2. Contour elevation information derived from Western Air Maps planimetric mapping (June 2005). Terrain relief not captured by Western Air Maps planimetrics was supplemented by USGS contour information and displayed in the profile view of the approach surface for each runway end.

3. Displayed FAR Part 77 obstructions were derived from the most recent National Oceanic and Atmospheric Administration (NOAA) Grand Canyon National Park Airport Obstruction Chart (OE 5381) dated April 1998.

4. Refer to the Inner Portion of the Approach Surface Drawings for Part 77 obstructions within the approach surface area. The approach profile view displays only those obstructions that penetrate the approach surface as indicated on the GCN Airport Obstruction Chart. Objects penetrating the primary, transitional and horizontal surfaces in the vicinity of the runway thresholds are depicted on the inner approach surface drawings.

Legend

EXISTING	ULTIMATE	DESCRIPTION
1	Same	Part 77 Obstruction
	Same	Nearby Terrain Penetrations Part 77 Surfaces

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Planned By: MAW | Drawn By: MAW | Reviewed By: BCW

FAA AIP Project No. 03-04-00-19-07 & 18

BWR Project No. 2003-007401

Arizona Department of Transportation
Aeronautics Division

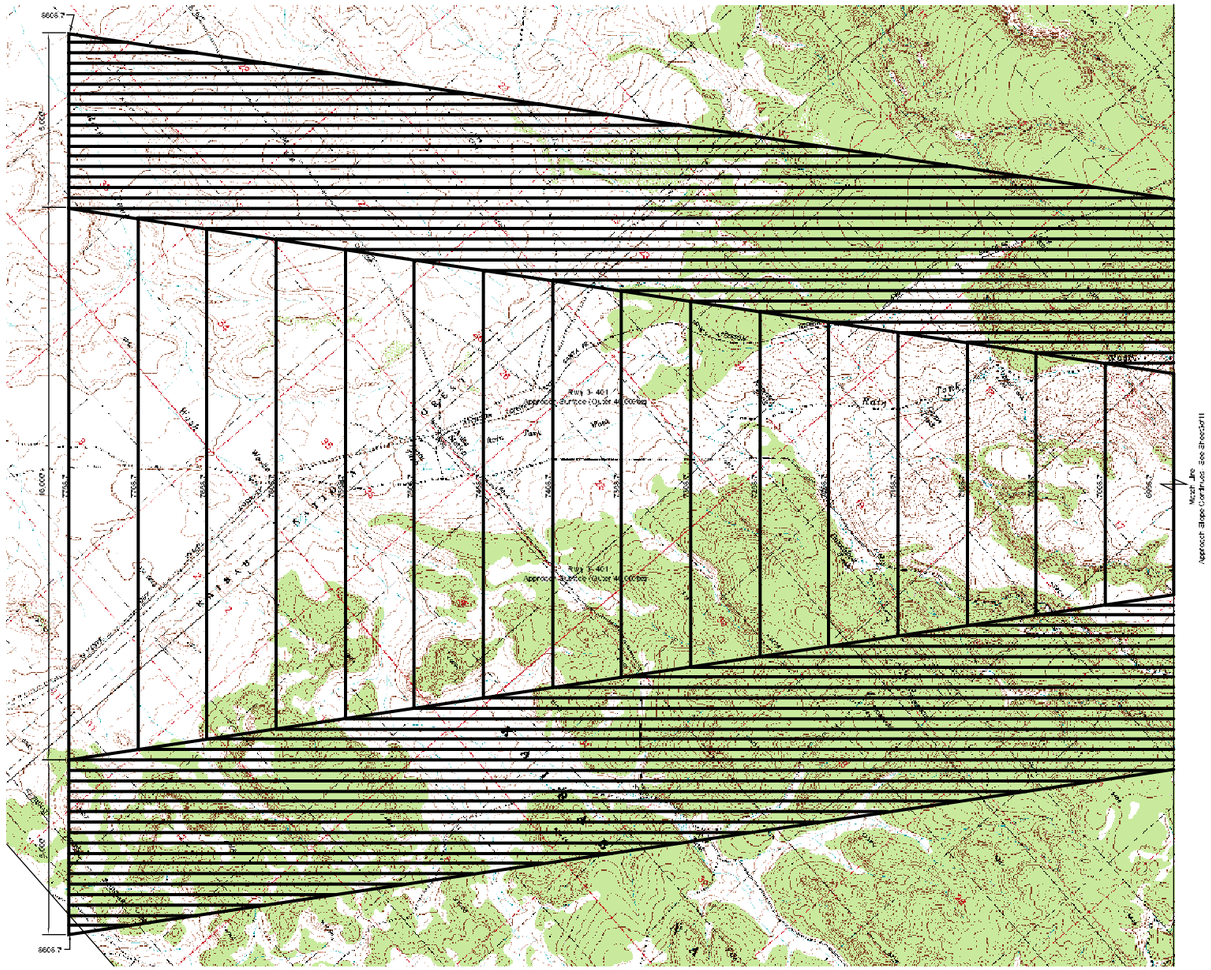
Grand Canyon National Park Airport

Airport Airspace Drawing

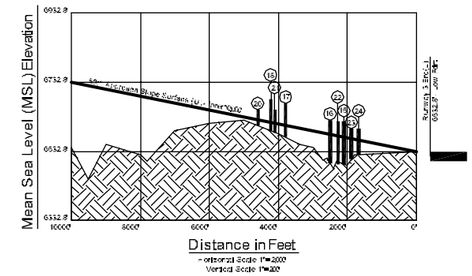
ADOT

Sheet 3 of 11

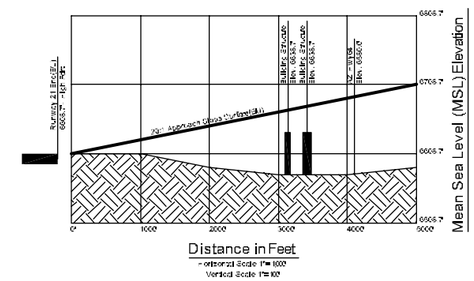
Sept. 27, 2005



Runway 3- Inner 10,000' Portion of the Approach Profile View

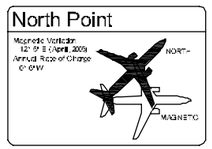


Runway 21 Approach Profile View



Runway 3- 10,000' to 50,000' Portion of the Approach Profile View

North Point



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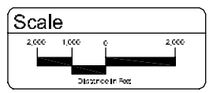

General Notes

1. Contour elevation information derived from the following Arizona - USGS 7.5 minute topographic quadrangle maps: Molly Jam Draw, Matte Tank, Miller Tank, Miller Dam, Red Butte, Red Butte SW, Hackberry Hill, Little Jackpot Canyon, Tusayan East, Tusayan West, Meseger Tank and Box Ranch.

2. Contour elevation information derived from Western Air Maps planimetric mapping (June 2005). Terrain relief was captured by Western Air Maps planimetric mapping supplemented by USGS contour information and displayed in the profile views of the approach surface for each runway end.

3. Depicted FAR Part 77 obstructions were derived from the National Oceanic and Atmospheric Administration (NOAA) Grand Canyon National Park Airport Obstruction Chart (OC 6361) dated April 1996.

4. Refer to the Inner Portion of the Approach Surface Drawings for Part 77 obstructions within the approach surface area. The approach profile view depicts only those obstructions that penetrate the approach surface for each runway. It includes only those obstructions that penetrate the approach surface as indicated on the NOAA Airport Obstruction Chart. Objects penetrating horizontal, conical and horizontal surfaces in the vicinity of the runway thresholds are depicted on the inner approach surface drawings.

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Planned By: MAW | Drawn By: MAW | Reviewed By: BGW

FAA A.I.P. Project No. 03-04-00-99-07 & 15

BWR Project No. 2003-007401

Arizona Department of Transportation
Aeronautics Division

Grand Canyon National Park Airport

Airport Airspace Drawing

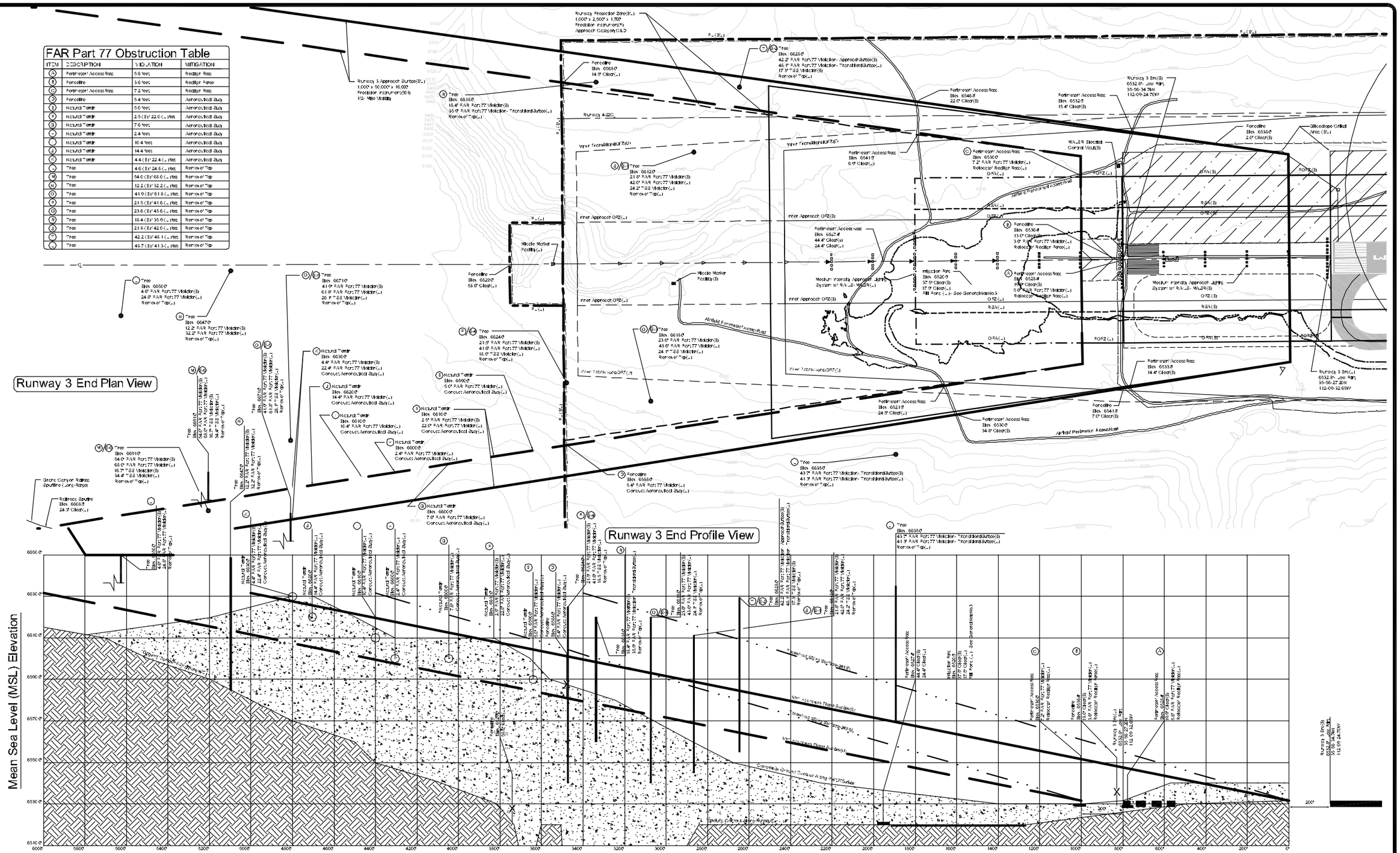
ADOT

Sheet 4 of 11

Sept. 28, 2005

FAR Part 77 Obstruction Table

ITEM	DESCRIPTION	VIOLATION	MITIGATION
A	Perimeter/ Access Road	5.6 feet	Realign Road
B	Fenceline	3.6 feet	Realign Fence
C	Perimeter/ Access Road	7.2 feet	Realign Road
D	Fenceline	5.4 feet	Aeronautical Study
E	Hazard Tower	5.0 feet	Aeronautical Study
F	Hazard Tower	2.5 (B)/ 22.0 (...) feet	Aeronautical Study
G	Hazard Tower	7.6 feet	Aeronautical Study
H	Hazard Tower	2.4 feet	Aeronautical Study
I	Hazard Tower	10.4 feet	Aeronautical Study
J	Hazard Tower	14.4 feet	Aeronautical Study
K	Hazard Tower	4.4 (B)/ 22.4 (...) feet	Aeronautical Study
L	Tree	4.6 (B)/ 24.6 (...) feet	Remove/ Top
M	Tree	54.0 (B)/ 66.0 (...) feet	Remove/ Top
N	Tree	12.2 (B)/ 32.2 (...) feet	Remove/ Top
O	Tree	41.0 (B)/ 61.6 (...) feet	Remove/ Top
P	Tree	21.5 (B)/ 41.5 (...) feet	Remove/ Top
Q	Tree	23.6 (B)/ 43.6 (...) feet	Remove/ Top
R	Tree	16.4 (B)/ 36.9 (...) feet	Remove/ Top
S	Tree	21.8 (B)/ 42.6 (...) feet	Remove/ Top
T	Tree	42.2 (B)/ 45.1 (...) feet	Remove/ Top
U	Tree	43.7 (B)/ 41.3 (...) feet	Remove/ Top



General Notes

1. Contour elevation information derived from Western Air Maps photogrammetric mapping (June 2005). Tree/pole heights were estimated by Western Air Maps photogrammetrists with supplemental, additional information and replaced in the profile view of the inner approach surface.

2. The OFZ for the ultimate Runway 3 end is penetrated by the airfield perimeter access road and fence. To mitigate this condition, the perimeter/ access road and fence are recommended to be realigned outside of the critical safety areas for the Runway Threshold.

3. The Irrigation pond located approximately 1,000 feet southwest of the existing Runway Threshold is recommended to be filled so that as the future expansion of the Runway 3 end will comply with applicable FAA Runway design and safety area criteria.

Threshold Siting Surface (TSS)

ITEM	DESCRIPTION	VIOLATION	MITIGATION
(E-1)	Tree	24.2 feet (...)	Remove/ Top
(E-2)	Tree	17.3 feet (B)	Remove/ Top
(E-3)	Tree	24.1 feet (...)	Remove/ Top
(E-4)	Tree	16.5 feet (...)	Remove/ Top
(E-5)	Tree	26.1 feet (...)	Remove/ Top
(E-6)	Tree	16.7 (B)/ 34.4 (...) feet	Remove/ Top

Based upon FAA AC 150/5300-13, Airport Design, Appendix 2.

Legend

EXISTING	ULTIMATE	DESCRIPTION
		Pavement/ Areas
		Structures
B.P.L.	B.P.L.	Airport Property line
R.S.A.(B)	R.S.A.(...)	Runway Safety Area (RSA)
O.F.A.(B)	O.F.A.(...)	Object Free Area (OFA)
R.P.Z.(B)	R.P.Z.(...)	Runway Protection Zone (RPZ)
R.O.F.Z.(B)	R.O.F.Z.(...)	Runway Obstacle Free Zone (ROFZ)
		Hole Position Marking
		Grame
—X—	—XX—	Perimeter Fencing

Scale

200 100 0 200

Distance in Feet
Horizontal Scale: 1"=200'
Vertical Scale: 1"=20'

North Point

Magnetic Variation:
12° 0' E (April 2005)
Annual Rate of Change
0° 0' W

NORTH
MAGNETIC

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FAA A/P Project No. 03-04-00-19-07 & 15

BWR Project No. 2003-007401

Arizona Department of Transportation
Aeronautics Division

Grand Canyon National Park Airport

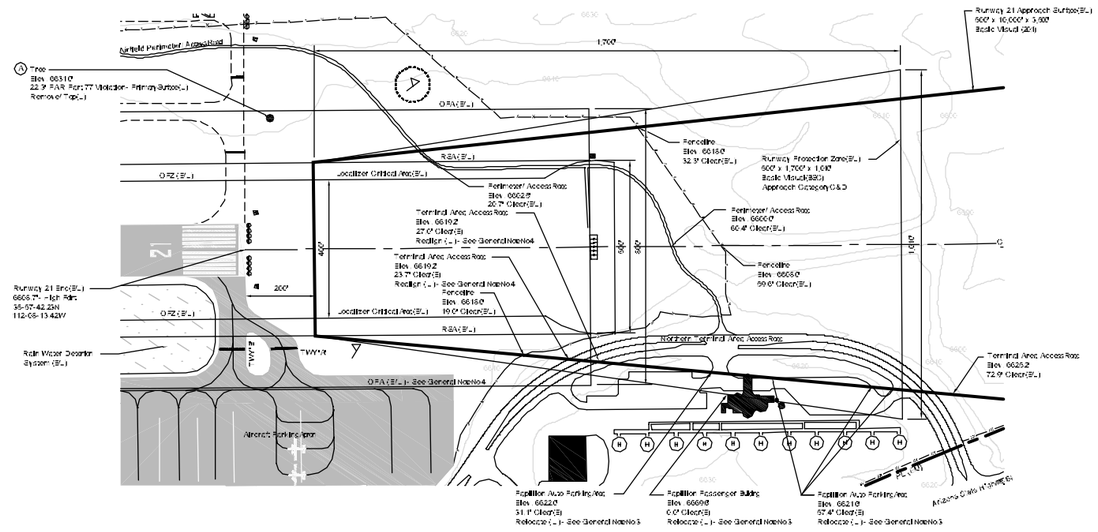
Runway 3 Inner Portion of the Approach Surface Drawing

ADOT

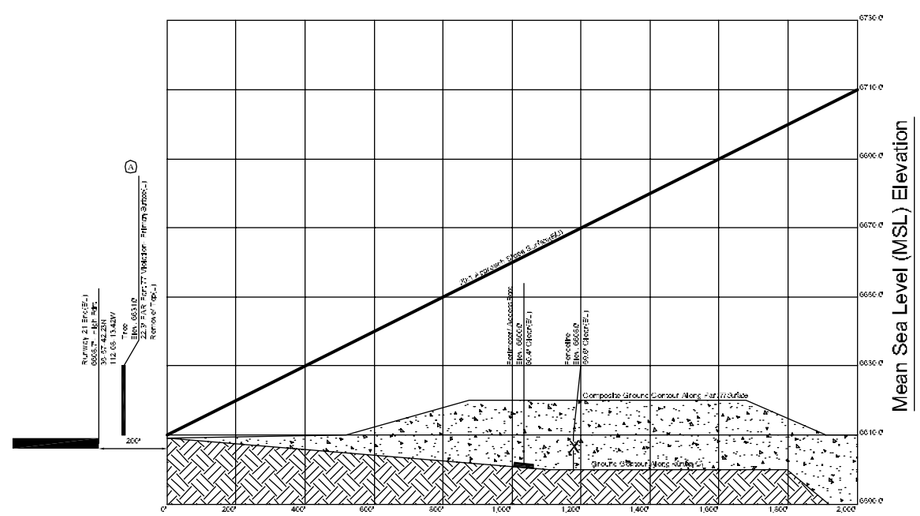
Sheet 5 of 11

October 5, 2005

Runway 21 End Plan View



Runway 21 End Profile View



FAR Part 77 Obstruction Table

ITEM	DESCRIPTION	VIOLATION	MITIGATION
A	Tree	22.9 feet	Removal of Tree

Threshold Siting Surface (TSS)

There are No TSS Object Penetrations.

General Notes

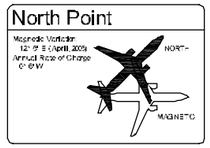
1. Contour elevation information derived from Western Air Maps planimetric mapping (June 2005).

2. There are No OFZ Object Penetrations.

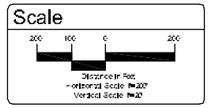
3. The Reposition Grand Canyon - helicopter structure is located within the Runway 21 RPZ. Places of public assembly such as this representation uses this designation for occupying space within the RPZ. The Reposition structure and associated facilities are recommended to be removed and relocated. Future location, layout, and/or other relocation will be determined as part of a future terminal area planning.

4. The airport access road located to the north of the terminal area complex and adjacent upon the Runway 21 OFA which represents a non standard condition (runway infringement). The access road is recommended to be realigned and relocated outside the future Runway 21 OFA. Alignment, costs and scheduling information will be determined as part of a future terminal area planning.

North Point



Scale



Legend

EXISTING	ULTIMATE	DESCRIPTION
		Pavement Areas
		Structures
AIRP(B)	AIRP(U)	Airport Property line
RSA(B)	RSA(U)	Runway Safety Area(RSA)
OFA(B)	OFA(U)	Object Free Area(OFA)
RPZ(B)	RPZ(U)	Runway Protection Zone(RPZ)
ROFZ(B)	ROFZ(U)	Runway Obstacle Free Zone(ROFZ)
		Hold Position Markings
		Airport Wind Cone/Segmented Circle
		Runway Threshold Lighting
		Runway End Identifier Lights(REIL)
	Same	Ground Contour(s)
		Perimeter Fencing
	Same	Localizer Transmitter Array

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Planned By: MAW | Drawn By: MAW | Reviewed By: BCW

FAA A.I.P. Project No. 03-04-00-19-176-16

BWR Project No. 2003-007401

Arizona Department of Transportation
Aeronautics Division

Grand Canyon National Park Airport

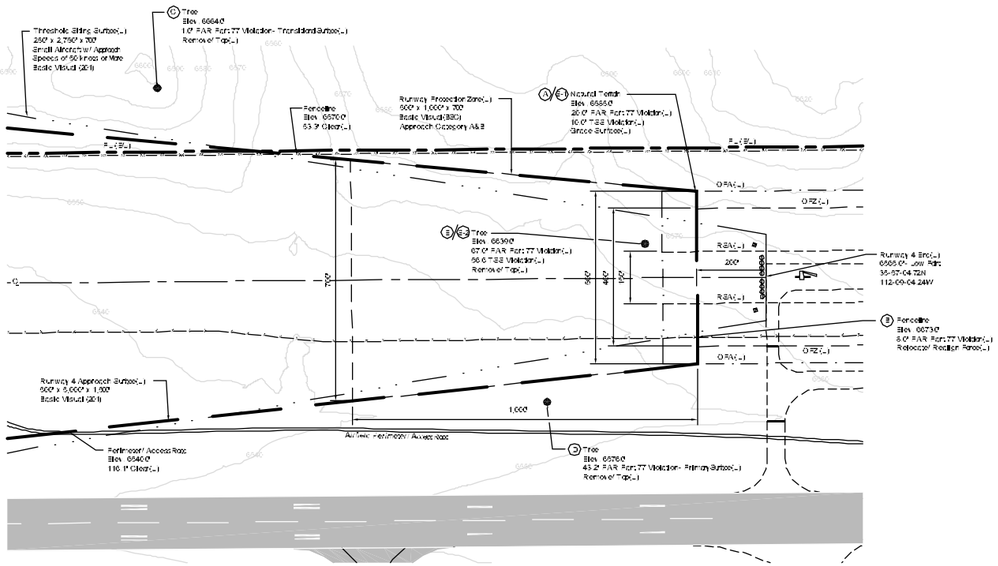
Runway 21 Inner Portion of the Approach Surface Drawing

ADOT

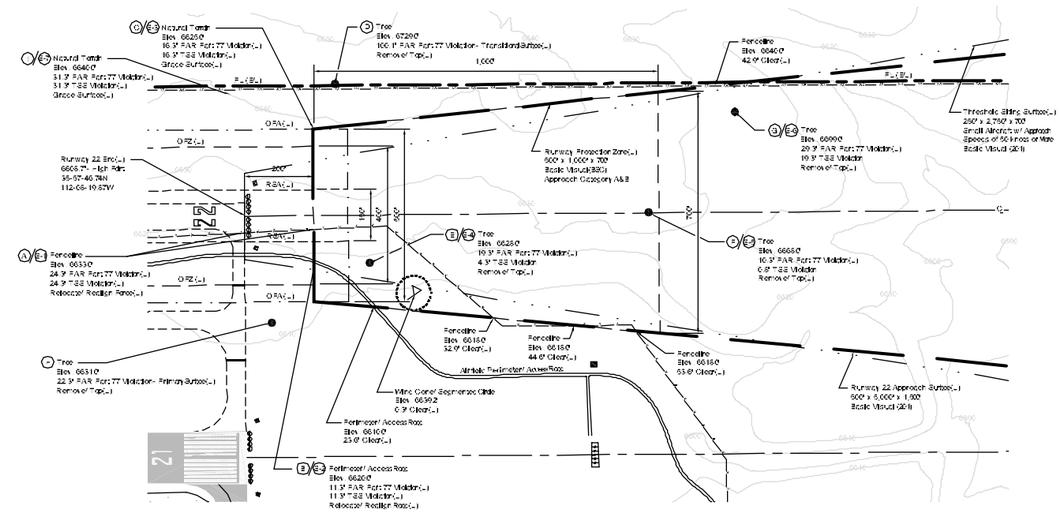
Sheet 6 of 11

Sept. 22, 2005

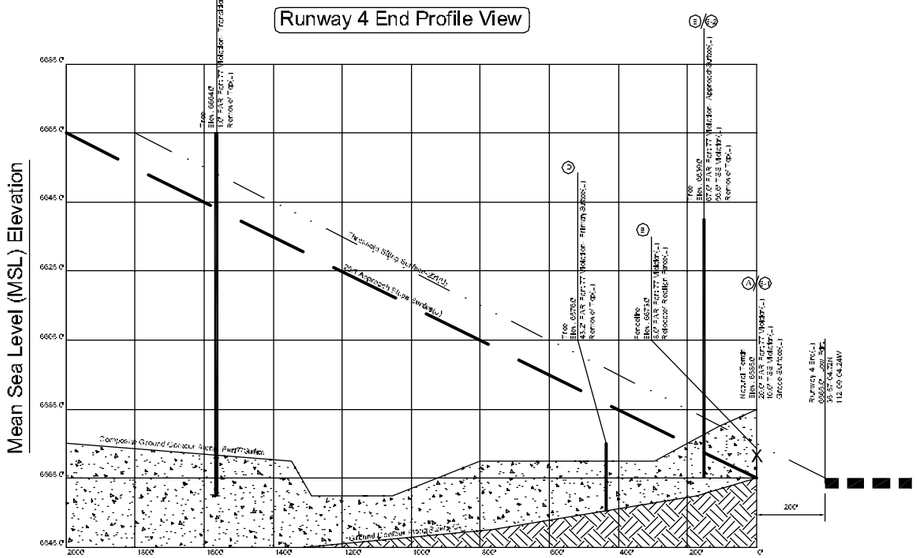
Runway 4 End Plan View



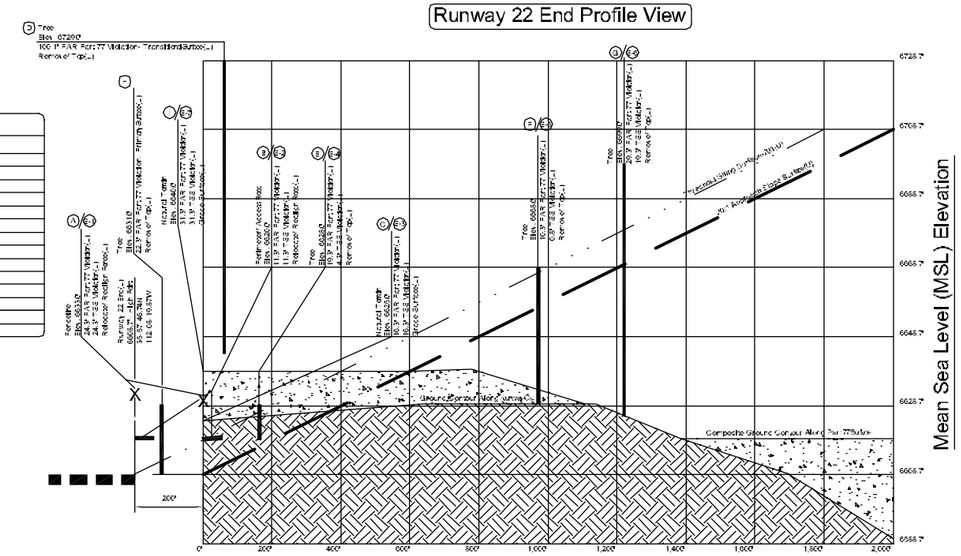
Runway 22 End Plan View



Runway 4 End Profile View



Runway 22 End Profile View



Legend

EXISTING	ULTIMATE	DESCRIPTION
		Pavement Areas
		Structures
		Airport Property Line
		Runway Safety Area(RSA)
		Object Free Area(OFA)
		Runway Protection Zone(RPZ)
		Runway Obstacle Free Zone(ROFZ)
		Hold Position Marking
		Lighted Wind Cone/Segmented Circle
		Runway Threshold Lighting
		Runway End Indicator Lights(REIL)
	Same	Ground Contours
		Perimeter Fencing
	Same	Localizer Transmitter Array

Threshold Siting Surface (TSS)

ITEM	DESCRIPTION	VIOLATION	MITIGATION
(E-1)	Natural Terrain	10.0 feet	Grade Surface
(E-2)	Tree	56.0 feet	Remove of Top

Based upon FAA AC 150/5300-13, Airport Design, Appendix 2

FAR Part 77 Obstruction Table

ITEM	DESCRIPTION	VIOLATION	MITIGATION
(A)	Natural Terrain	20.0 feet	Grade Surface
(B)	Fenceline	8.0 feet	Redlign Fence
(C)	Tree	1.0 feet	Remove of Top
(D)	Tree	43.2 feet	Remove of Top
(E)	Tree	67.0 feet	Remove of Top

General Notes

1. Contour elevation information comes from Western Air Maps planimetric mapping (June 2005)

2. There are No OFZ Object Penetrations

Threshold Siting Surface (TSS)

ITEM	DESCRIPTION	VIOLATION	MITIGATION
(E-1)	Fenceline	24.3 feet	Redlign Fence
(E-2)	Perimeter/Access Road	11.3 feet	Redlign Road
(E-3)	Natural Terrain	16.3 feet	Grade Surface
(E-4)	Tree	4.3 feet	Remove of Top
(E-5)	Tree	0.8 feet	Remove of Top
(E-6)	Tree	19.3 feet	Remove of Top
(E-7)	Natural Terrain	31.3 feet	Grade Surface

Based upon FAA AC 150/5300-13, Airport Design, Appendix 2

FAR Part 77 Obstruction Table

ITEM	DESCRIPTION	VIOLATION	MITIGATION
(A)	Fenceline	24.3 feet	Redlign Fence
(B)	Perimeter/Access Road	11.3 feet	Redlign Road
(C)	Natural Terrain	16.3 feet	Grade Surface
(D)	Tree	100.1 feet	Remove of Top
(E)	Tree	19.3 feet	Remove of Top
(F)	Tree	16.3 feet	Remove of Top
(G)	Tree	20.3 feet	Remove of Top
(H)	Tree	22.3 feet	Remove of Top
(I)	Natural Terrain	31.3 feet	Grade Surface

Scale

200 100 0 200

Distance in Feet
Horizontal Scale: 1"=200'
Vertical Scale: 1"=20'

North Point

Magnetic Variation
12° 0' E (April, 2005)
Annual Rate of Change
0° 6'W

NORTH

MAGNETIC

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Planned By: MAW | Drawn By: MAW | Reviewed By: BCW

FAA A.I.P. Project No. 03-04-00-19-07-15

BWR Project No. 2003-007401

Arizona Department of Transportation
Aeronautics Division

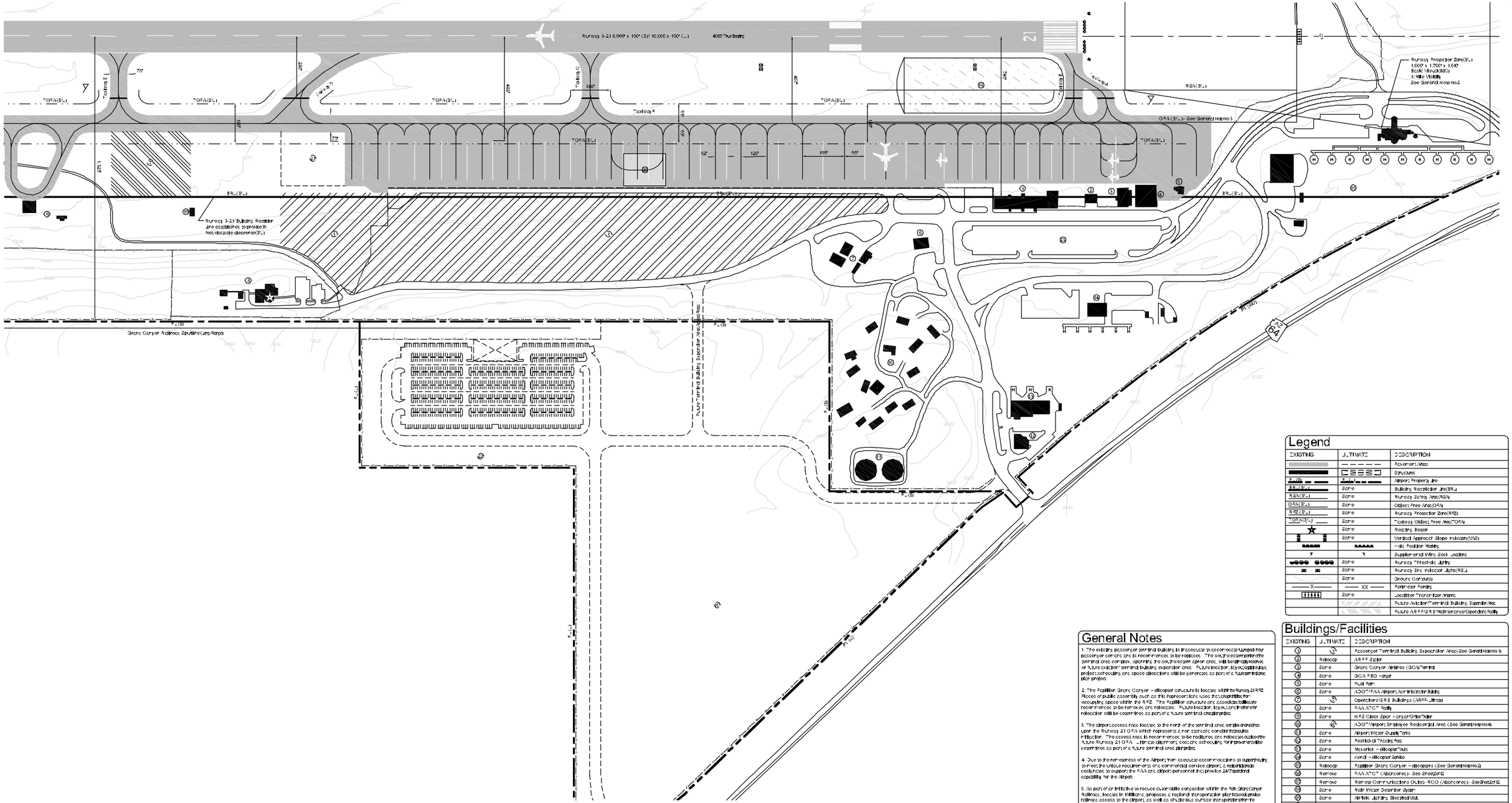
Grand Canyon National Park Airport

Runway 4-22 Inner Portion of the Approach Surface Drawing

ADOT

Sheet 7 of 11

Sept. 23, 2005



Legend

EXISTING	ULTIMATE	DESCRIPTION
		Pavement Areas
		Structures
		Airport Property Line
	Same	Building Restriction Line(BRL)
	Same	Runway Safety Area(RSA)
	Same	Object Free Area(OFA)
	Same	Runway Protection Zone(RPZ)
	Same	Taxiway Object Free Area(TOFA)
	Same	Rotating Beacon
	Same	Vertical Approach Slope Indicators(VASI)
		Helicopter Position Marking
		Supplemental Wind Sock Locations
	Same	Runway Threshold Lighting
	Same	Runway End Indicator Lights(REIL)
	Same	Ground Contours(s)
		Perimeter Fencing
	Same	Localizer Transmitter Array
		Future Aviation/Terminal Building Expansion Area
		Future ARFF/SRE/Maintenance/Operations Facility

Buildings/Facilities

EXISTING	ULTIMATE	DESCRIPTION
1	1A	Passenger Terminal Building Expansion Area (See General Note No.5)
2	Relocate	ARFF Station
3	Same	Grand Canyon Airlines (GCA) Terminal
4	Same	GCA FBO - Hangar
5	Same	Fuel Farm
6	Same	ADOT/FAA Airport Administration Building
7	7A	Operations/SRE Buildings (ARFF - Hangar)
8	Same	FAA ATCT Facility
9	Same	NRS Clear Span - Hangar/Office/Trailer
10	10A	ADOT Airport Employee Residential Area (See General Note No.4)
11	Same	Airport Water Supply Tanks
12	Same	Restricted Parking Area
13	Same	Maverick - Helicopter Tours
14	Same	Aerial - Helicopter Tours
17	Relocate	Papillon Grand Canyon - Helicopters (See General Note No.2)
18	Remove	FAA ATCT (Abandoned) - See Sheet 2 of 12
19	Remove	Remote Communications Outlet - RCO (Abandoned) - See Sheet 2 of 12
19	Same	Rain Water Detention System
19	Same	Airfield Lighting Electrical Vault
20	Same	Aircraft Parking Area
	1A	Terminal Area Apron Expansion
	2A	Railroad Depot/Staging Area (See General Note No.5)
3		Passenger Terminal Building Auto Parking Area

General Notes

1. The existing passenger terminal building is inadequate to accommodate anticipated future passenger demand and is recommended to be replaced. The southwest corner of the terminal area complex, specifically the southwest apron area, will be utilized as a future aviation/terminal building expansion area. Future location, layout, additional project scheduling and space allocations will be generated as part of a future terminal area plan project.

2. The Papillon Grand Canyon - Helicopter structure is located within Runway 21 RPZ. Places of public assembly, such as this representation, does not contribute to an occupying space within the RPZ. The Papillon structure and associated structure recommended to be removed and relocated. Future location, layout, and interim relocation will be determined as part of a future terminal area plan project.

3. The airport access road located to the north of the terminal area complex crosses upon the Runway 21 OFA which represents a non standard condition because mitigation. The access road is recommended to be realigned and relocated outside the future Runway 21 OFA. Alignment alternatives, costs and scheduling for improvements will be determined as part of a future terminal area plan project.

4. Due to the remoteness of the Airport, from adequate accommodations to support housing, and the unique requirements of a commercial service airport, a residential housing complex to support the FAA and airport personnel that provide 24/7 operational capability for the Airport.

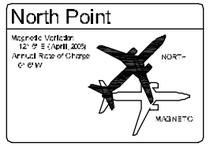
5. As part of an initiative to reduce automobile congestion within the Rim Grand Canyon Railroad located in Williams, proposed a regional transportation plan that would make railroad access to the airport, as well as shuttle bus or other transportation from the Grand Canyon Village to manage vehicular flow during peak tourist dates. Approximately 25 acres of NRS land located to the southwest of terminal area would be acquired to accommodate auto parking facilities, a railroad station/ticket depot, as well as a rail spur line. In the event that this long-range transportation plan would be successfully implemented.

Terminal Area Design Criteria

TERMINAL AREA STANDARD	AIRPLANE DESIGN GROUP (ADG): GROUP II	GROUP III
Runway C to Parallel Taxiway C-Separation	240'	400'
Taxiway C to Fixed or Mobile Object	65.5'	93'
Taxiway C to Parallel Taxiway C-Separation	105'	152'
Taxiway Object Free Area Width	131'	186'
Taxiway Safety Area Width	79'	118'
Taxiway Wingtip Clearance	22'	34'
Taxiway Width	35'	50'
Taxiway Object Free Area Width	115'	162'
Taxiway C to Parallel Taxiway C-Separation	92'	140'
Taxiway C to Fixed or Mobile Object	57.5'	81'

North Point

Magnetic Variation
12° 0' E (April 2005)
Annual Rate of Change
0° 6' W



Scale

200 100 0 200

Distance in Feet

BUCHER, WILLIS & RATLIFF CORPORATION
ENGINEERS | PLANNERS | ARCHITECTS
9625 West 76th Street, Suite 900, Kansas City, KS 66214-1653
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Planned By: MAW | Drawn By: MAW | Reviewed By: BGW

FAA AIP Project No. 03-04-0019-17 & 18

BWR Project No. 2003-037401

Arizona Department of Transportation
Aeronautics Division

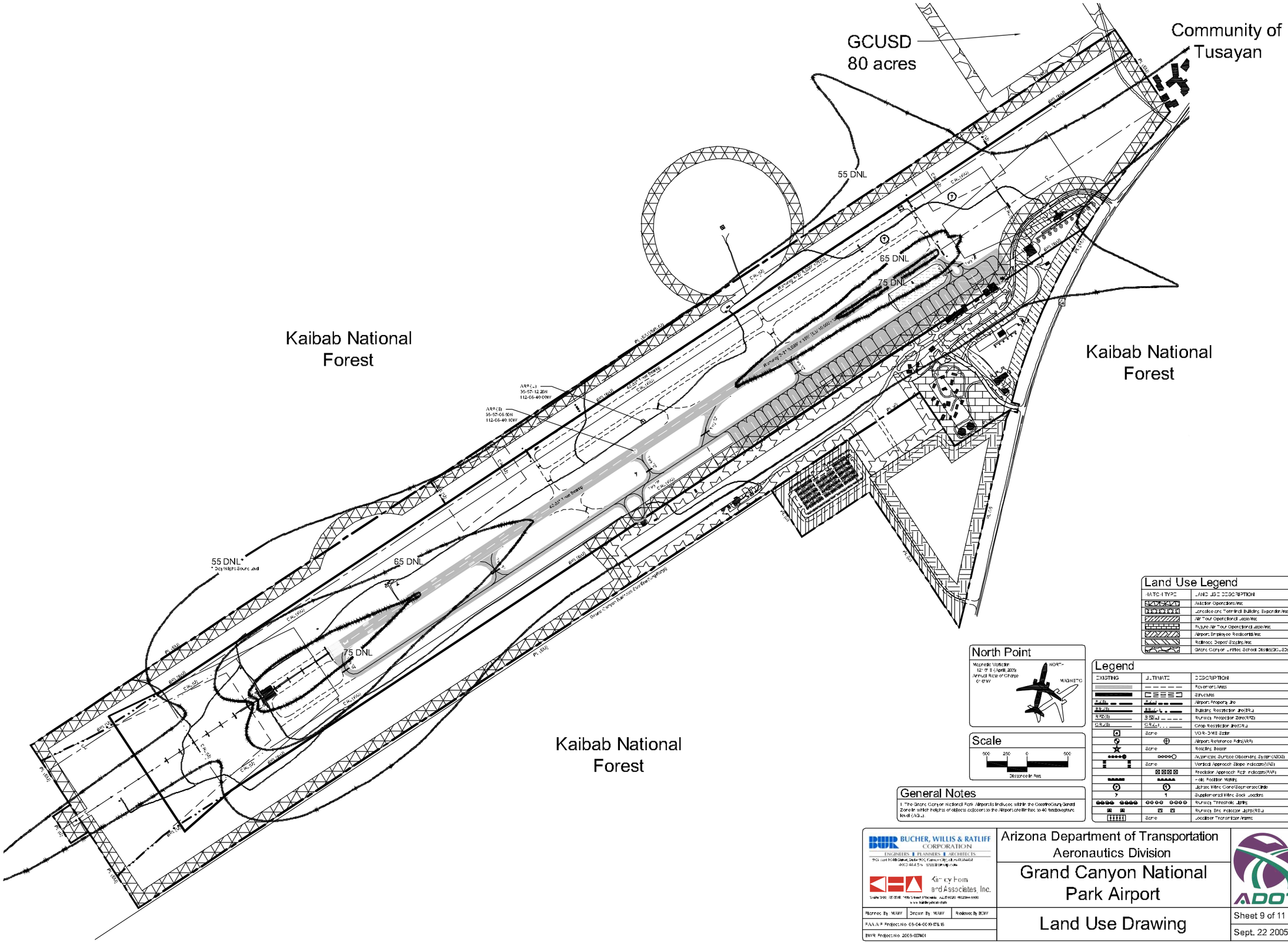
Grand Canyon National Park Airport

Terminal Area Drawing

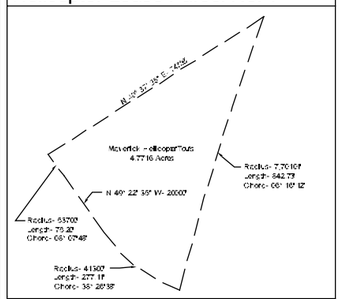
ADOT

Sheet 8 of 11

Sept. 22, 2005


GCUSD
80 acres
Community of
Tusayan
55 DNL
65 DNL
75 DNL
Kaibab National
Forest
Kaibab National
Forest
Kaibab National
Forest
55 DNL*
* Day/Night Sound Level
65 DNL
75 DNL
Land Use Legend
MATCH TYPE
LAND USE DESCRIPTION
Aviation Operations/Area
Landside and Terminal Building Expansion/Area
Air Tour Operational Lease/Area
Future Air Tour Operational Lease/Area
Airport Employee Residential/Area
Railroad Depot Staging/Area
Grand Canyon Unified School District(GCUSD)/Area
North Point
Magnetic Variation
12° 6' E (April, 2005)
Annual Rate of Change
0° 6' W
NORTH
MAGNETIC
Scale
500
250
0
500
Distance in Feet
Legend
EXISTING
ULTIMATE
DESCRIPTION
Pavement/Areas
Structures
Airport Property Line
Building Restriction Line(BRL)
Runway Protection Zone(RPZ)
Crop Restriction Line(CRL)
Same
VOR-DME Station
Airport Reference Point(ARP)
Rotating Beacon
Automated Surface Observing System(ASOS)
Same
Vertical Approach Slope Indicators(VAS)
Precision Approach Path Indicators(PAP)
Hole Position Marking
Lighted Wind Cone/Segmented Circle
Supplemental Wind Sock Locations
Runway Threshold Lighting
Runway End Indicator Lights(REL)
Same
Localizer Transmitter Antenna
General Notes
1. The Grand Canyon National Park Airport is included within the Coconino County Ground Zone in which heights of objects adjacent to the Airport are limited to 40 feet above ground level (AGL).
BUCHER, WILLIS & RATLIFF
CORPORATION
ENGINEERS | PLANNERS | ARCHITECTS
Kimley Horn
and Associates, Inc.
Planned By: MAW
Drawn By: MAW
Reviewed By: BCW
FAA AIP Project No. 03-04-00-19-17&18
BWR Project No. 2003-007401
Arizona Department of Transportation
Aeronautics Division
Grand Canyon National
Park Airport
Land Use Drawing
ADOT
Sheet 9 of 11
Sept. 22 2005

Helicopter Lease Parcel No. 1

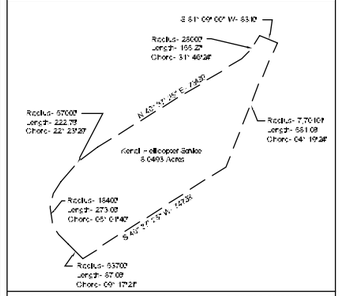


Maverick - Helicopter Tours property description derived from - HELICOPTER LEASE PARCEL NO. 1 dated July 7, 1992.

FAA ATCT Lease Parcel

FAA ATCT property description derived from AIR TRAFFIC CONTROL TOWER LEASE NO DTFA08-99-L-20010 dated July 12, 2000

Helicopter Lease Parcel No. 2

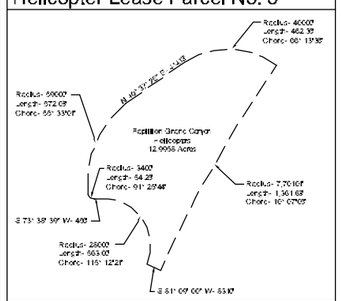


Kendi - Helicopter Service property description derived from - HELICOPTER LEASE PARCEL NO. 2 dated July 7, 1992.

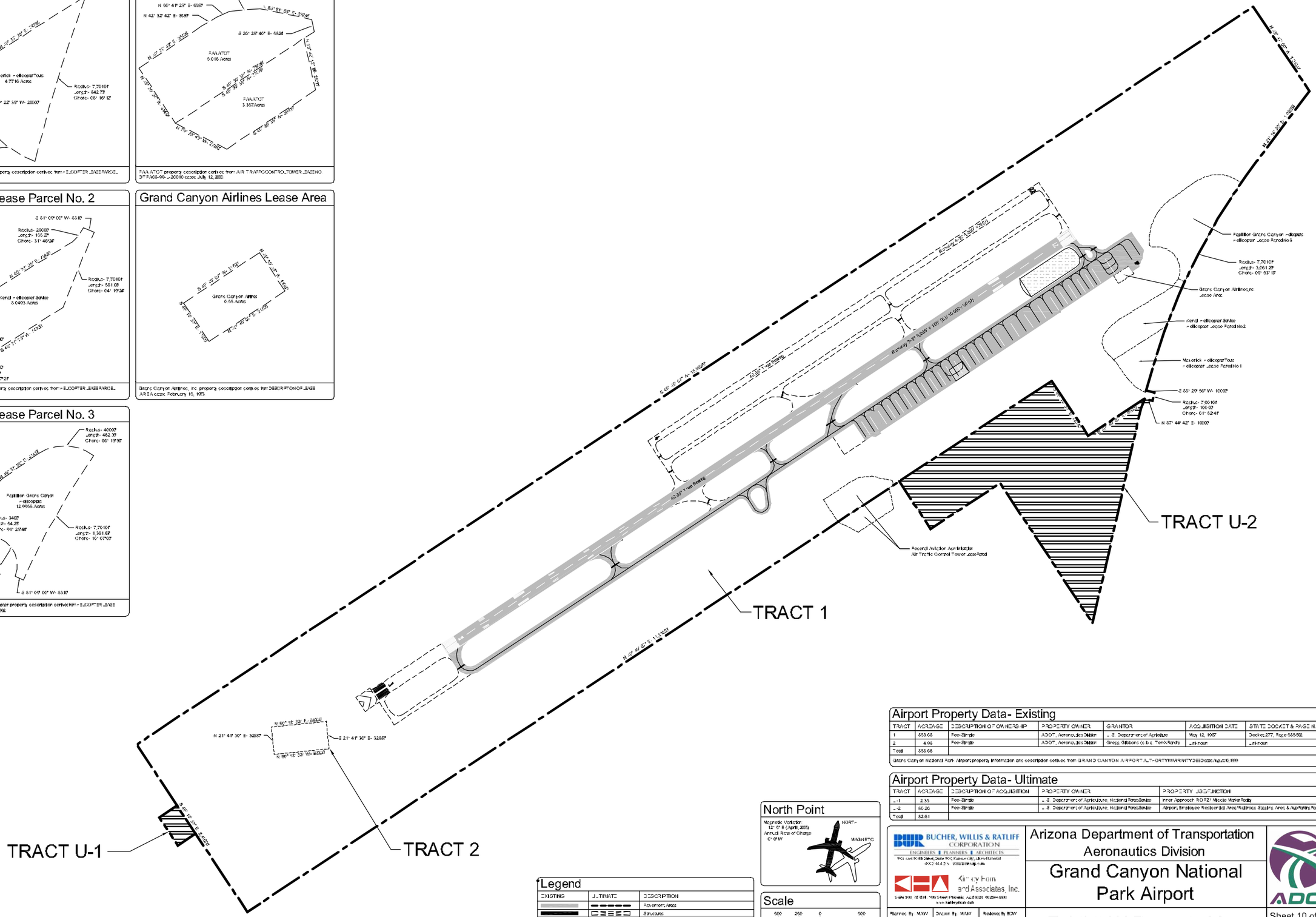
Grand Canyon Airlines Lease Area

Grand Canyon Airlines, Inc. property description derived from DESCRIPTION OF LEASE AREA dated February 15, 1995

Helicopter Lease Parcel No. 3



Repliflor Grand Canyon - Helicopter property description derived from - HELICOPTER LEASE PARCEL NO. 3 dated July 7, 1992.



Airport Property Data- Existing

TRACT	ACREAGE	DESCRIPTION OF OWNERSHIP	PROPERTY OWNER	GRANTOR	ACQUISITION DATE	STATE DOCKET & PAGE NUMBER
1	553.66	Fee-Simple	ADOT, Aeronautics Division	U. S. Department of Agriculture	May 12, 1967	Docket 277, Page 566-592
2	4.66	Fee-Simple	ADOT, Aeronautics Division	Gregg Gibbons (d.b.a. Tom-A Ranch)	Unknown	Unknown
Total	558.66					

Grand Canyon National Park Airport property information and description derived from GRAND CANYON AIRPORT AUTHORITY WARRANTY DEED dated August 10, 1999

Airport Property Data- Ultimate

TRACT	ACREAGE	DESCRIPTION OF ACQUISITION	PROPERTY OWNER	PROPERTY JUSTIFICATION
U-1	2.35	Fee-Simple	U. S. Department of Agriculture, National Forest Service	Inner Approach ROPZ/ Middle Marker Facility
U-2	56.26	Fee-Simple	U. S. Department of Agriculture, National Forest Service	Airport Employee Residential Area/ Railroad Siding Area & Auto Parking Facility
Total	58.61			

North Point

Magnetic Variation
12° 0' E (April, 2005)
Annual Rate of Change
0° 0' W

Scale

500 250 0 500

Distance in Feet

Legend

EXISTING	ULTIMATE	DESCRIPTION
		Pavement Areas
		Structures
		Airport Property line
		Tract/Lease Area Boundaries
		Land Acquisition - Unknown

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Planned By: MAW | Drawn By: MAW | Reviewed By: BCW

FAA A.I.P. Project No. 03-04-00-10-176-16

BWR Project No. 2003-007401

Arizona Department of Transportation
Aeronautics Division

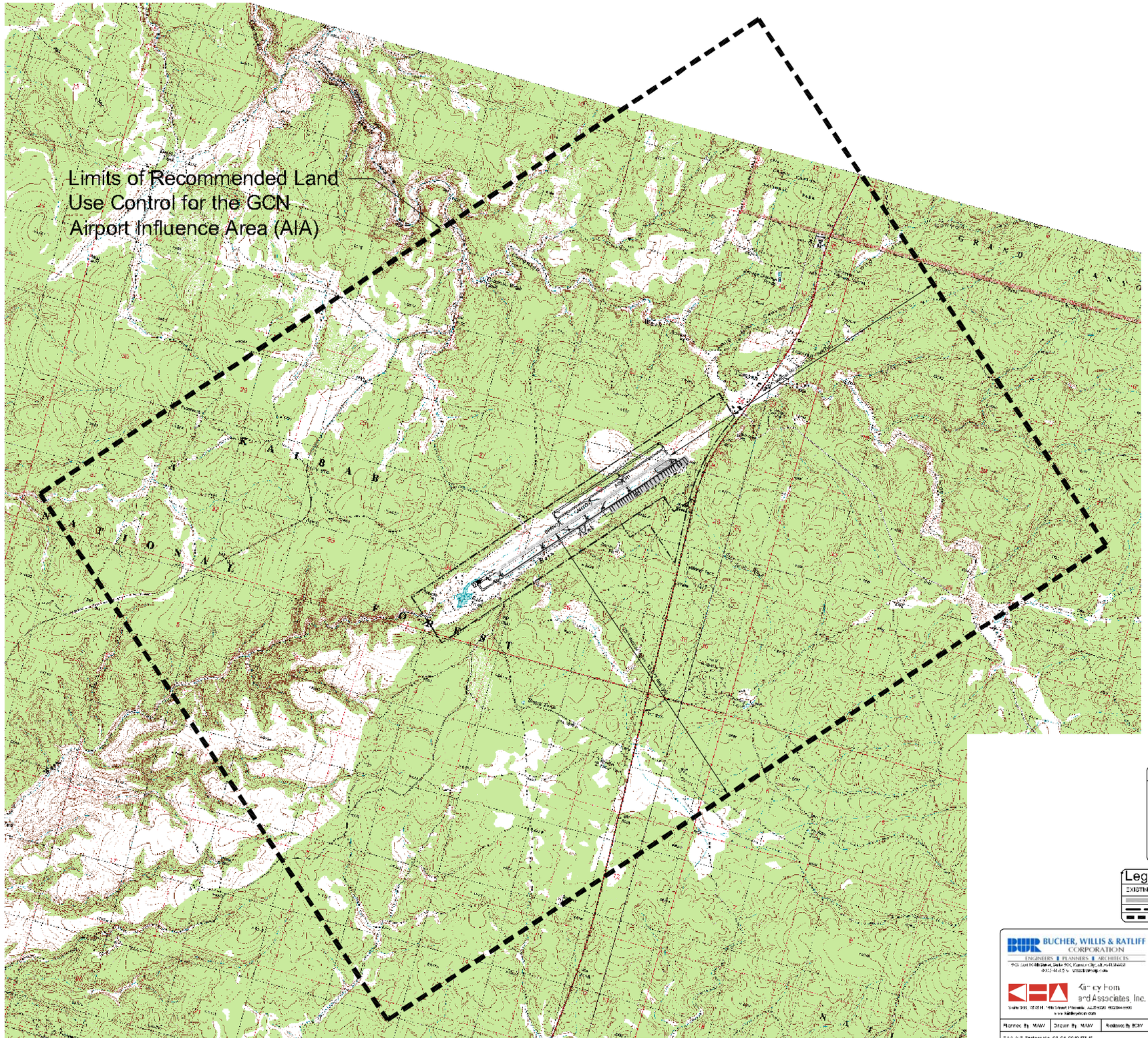
Grand Canyon National Park Airport

Exhibit 'A' Property Map

ADOT

Sheet 10 of 11

Sept. 21, 2005



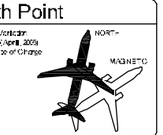
General Notes

1. Contour elevation information derived from the following Arizona USGS 7.5 minute topographic quadrangle maps: Molly Ann Draw, Valle Tank, Miller Tank, Mahran Dam, Red Butte, Red Butte SW, Howard Hill, Little Hopi Canyon, Tusayan East, Tusayan West, Metzger Tank and Bow Ranch.

2. The State of Arizona, in 1997, enacted legislation enabling governing bodies and municipalities the ability to establish Airport Influence Areas (AIA) to distinguish owners and potential purchasers of property that are adjacent to an airport and subject to adjacent noise and overflight. In an effort to control the encroachment of future development around the Airport, this *Airport Influence Area Drawing* is established and based upon the Airport's traffic pattern airspace as found in FAA Order 7400.2E, *Procedures for Handling Airspace Matters*, as the official AIA for the Grand Canyon National Park Airport.

North Point

Magnetic Variation
12° 6' E (April, 2005)
Annual Rate of Change
0° 6' W



Legend

EXISTING	ULTIMATE	DESCRIPTION
		Pavement Areas
		Airport Property Line
	Same	AIA Boundary

Scale

2,000 1,000 0 2,000

Distance in Feet

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Kimley Horn and Associates, Inc.

Planned By: MAW | Drawn By: MAW | Reviewed By: BCW

FAA AIP Project No. 03-04-0019-07 & 18

BWR Project No. 2003-007401

Arizona Department of Transportation
Aeronautics Division

Grand Canyon National Park Airport

ADOT

Airport Influence Area (AIA) Drawing

Sheet 11 of 11

Sept. 22, 2005