

GAINESVILLE REGIONAL AIRPORT

ALP Update Study Narrative Report

Gainesville-Alachua County
Regional Airport Authority

July 2014
Revised December 2014
Final ATCT SRMD Added March 2015

RS&H
IMPROVING YOUR WORLD

Table of Contents

CHAPTER 1 Background 1-3
CHAPTER 2 Introduction 2-1
CHAPTER 3 Existing Conditions 3-1
3.1 Airport Facilities 3-1
CHAPTER 4 Aeronautical Forecasts 4-1
4.1 Total Annual Operations 4-1
4.2 Annual Itinerant Operations 4-2
4.3 Based Aircraft 4-2
4.4 Annual Instrument Approaches 4-3
4.5 Annual Itinerant Operations by Critical Aircraft 4-3
4.6 Annual Itinerant Operations by More Demanding Aircraft 4-4
CHAPTER 5 ALP Update Study Results 5-1
5.1 Airport Traffic Control Tower Site Selection 5-1
5.1.1 Existing Site 5-1
5.1.2 Proposed Site Determinations and Description 5-2
5.1.3 Siting Analysis 5-3
5.1.4 Recommended Site 5-3
5.2 Future Aircraft Rescue and Fire Fighting Concept Planning 5-3
5.2.1 Existing Facility – Condition Assessment 5-4
5.2.2 Alternate Site Identification and Evaluation 5-5
5.3 Airspace Protection for Ultimate Runway Extension of 11-29 5-7
5.3.1 Future Runway Length 5-7
5.3.2 Alteration of Future Runway 7/25 Primary Approach 5-10
5.3.3 City and County Land Use Planning 5-10
5.4 General Aviation Inventory 5-12
5.4.1 Pilot Population 5-12
5.4.2 Existing Infrastructure Condition 5-13
5.5 Future Land Development 5-15
5.5.1 GNV Airport Property Market Opportunities 5-15
5.5.2 Southwest Airport Property/Fairgrounds Concept Planning 5-21
5.6 Special Issues 5-22
CHAPTER 6 Future Terminal Expansion 6-1
CHAPTER 7 Development Schedule 7-1
7.1 Phase I – CIP Projects (2013-2020) 7-1
7.2 Phase II – Intermediate Projects (2021-2025) 7-2
7.3 Phase III – Long-Term Projects (2026-2032) 7-6

7.4 Summary....7-9
CHAPTER 8 Airport Layout Plan....8-1
8.1 ALP Description....8-1
8.2 Preliminary Identification of Environmental Features....8-5
8.3 Wildlife Hazard Management Issues Review....8-8

Attachment A – ATCT Safety Risk Management Document....
Attachment B – ARFF Siting Location Study....
Attachment C – Runway 11-29 Feasibility Working Paper....
Attachment D – Airport Layout Plan Set....

Figures

Figure 1 - Airport Location....2-1
Figure 2 – Aerial Image....2-2
Figure 3 – Total Annual Operations Forecast....4-1
Figure 4 – Total Annual Itinerant Operations Forecast....4-2
Figure 5 – Total Based Aircraft Forecast....4-3
Figure 6 – Existing ATCT Facility....5-1
Figure 7 – Proposed ATCT Site Locations....5-2
Figure 8 – Existing ARFF Facility....5-4
Figure 9 – Alternate ARFF Facility Locations....5-5
Figure 10 – GNV Runway Length Analysis....5-8
Figure 11 – GNV Range Map....5-9
Figure 12 – Local Pilot Population....5-13
Figure 13 – GA Apron Pavement Thickness....5-14
Figure 14 – Aeronautical and Non-Aeronautical Airport Properties....5-17
Figure 15 – Aeronautical and Non-Aeronautical Airport Properties....5-23
Figure 16 – Proposed Terminal Site Plan....6-1
Figure 17 – Intermediate Phase Projects....7-5
Figure 18 – Long Term Phase Projects....7-8

Tables

Table 1 – Airport Information and Navigational Aids....3-1
Table 2 – Existing Runway System Information....3-2
Table 3 – Itinerant Operations by the Critical Aircraft....4-4
Table 4 – Itinerant Operations by More Demanding Aircraft....4-4
Table 5 –GNV Runway Wind Coverage....5-10
Table 6 –Recommended Considerations for City and County Land Use Regulations....5-11
Table 7 – GA Aircraft Parking....5-15
Table 8 – Airport Properties Data....5-16
Table 9 – Market Observation Summary....5-19
Table 10 – Development Concept Evaluation....5-20
Table 11 – Recommended Land Development Uses....5-21
Table 12 – Phase I CIP Projects (2013-2020)....7-10
Table 13 – Phase II Intermediate Phase Projects (2021-2025)....7-14
Table 14 – Phase III Long Term Phase Projects (2026-2032)....7-17
Table 15 – Wildlife Hazard Management Plan Action Plan....8-8

CHAPTER 1
BACKGROUND

The Gainesville-Alachua County Regional Airport Authority (GACRAA) for the Gainesville Regional Airport (GNV) initiated an Airport Layout Plan (ALP) Update Study to address changes since, and build upon the 2006 Airport Master Plan. Although several items at the Airport have changed since the 2006 Master Plan, the extent of these changes does not yet warrant a complete Master Plan Study. Therefore, the ALP Update Study will depict the existing conditions, planned modifications to the Airport, and any significant off-airport development. This ALP Update Study also satisfies the legal requirement of the Airport to keep the ALP current.

In addition to fulfilling the ALP requirements of the Federal Aviation Administration (FAA), this ALP Update study consists of five primary components or tasks that are detailed in this report:

- Air Traffic Control Tower (ATCT) Site Selection Study
- Future Aircraft Rescue and Fire Fighting (ARFF) Location Concept Planning
- Airspace Protection of Ultimate Extension of Runway 11-29
- Investigation of Airport Land Development Opportunities
- Update ALP Set

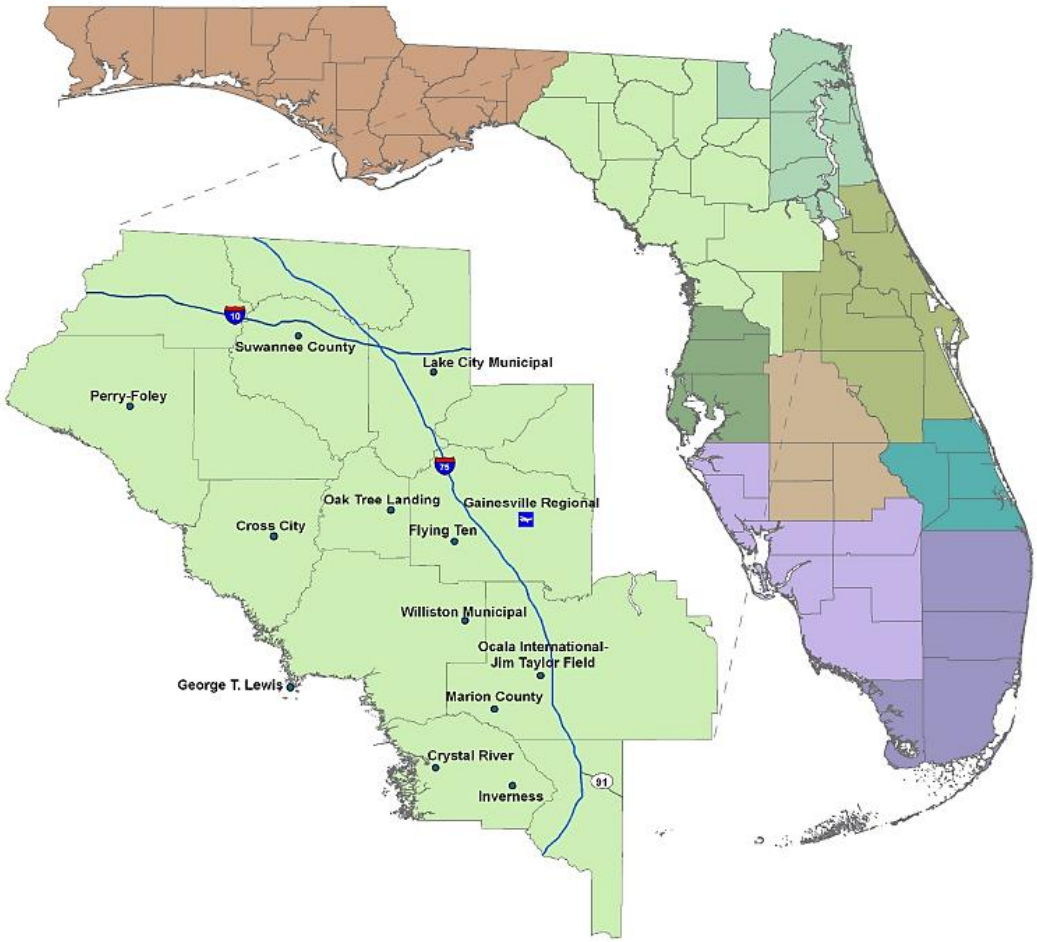
The Gainesville Regional Airport ALP Update Study has been prepared in accordance with the guidelines and standards set forth in the FAA Advisory Circular 150/5070-6B, FAA Airports Division-Southern Region guidance, and with the cooperation of the FAA, Florida Department of Transportation (FDOT), Alachua County, and the City of Gainesville.

CHAPTER 2
INTRODUCTION

The Gainesville Regional Airport is a public use airport occupying 1,650 acres in central Florida approximately three miles northeast from the City of Gainesville, in Alachua County. The airport located on property owned by the City of Gainesville. The Gainesville-Alachua County Airport Authority oversees the day-to-day operations and management of the Airport. The Authority consists of nine members appointed by County, City, and State officials.

The National Plan of Integrated Airport Systems (NPIAS) lists the Airport as a primary commercial service non-hub airport meaning the airport has more than 10,000 annual passenger enplanements, but accounts for less than 0.05% of total U.S. passenger enplanements. The Airport is located in the FDOT Continuing Florida Aviation System Planning Process (CFASPP) North Central Florida Region. Figure 1 depicts the North Central Florida Region of the CFASPP and the airport location.

Figure 1 - Airport Location



Source: FDOT-Florida Aviation System Plan 2025

The Airport's annual operations include activity by commercial airlines, general aviation and business aircraft, and flight training providers. The Airport holds a 14 CFR Part 139 Class I Airport Operating Certificate (AOC), meaning it can serve scheduled and unscheduled small and larger air carrier aircraft. For 2013, the Airport served approximately 210,000 passengers. Based upon the latest FAA available data for 2013, the Airport conducted 69,982 operations of which approximately 70 are general aviation, 18% is air taxi and scheduled commercial, and 12% is military. There are currently 146 aircraft of which 68% are single engine, 9% are multi-engine, 18% are jets, and 5% are helicopters.

The Airfield consists of two active runways with associated full-length parallel taxiways oriented in an open-V pattern. The runway, taxiway, and apron system together total over 4.5 million square feet of pavement. Additionally, the airport operates facilities that accommodate approximately 30 on-site aviation-related tenants. According to a 2010 assessment by FDOT, the airport contributes 2,391 jobs and $231 million to the local economy.

Figure 2 presents an aerial image of the Gainesville Regional Airport demonstrating the airfield geometry.

Figure 2 – Aerial Image



Source: Google Earth

CHAPTER 3
EXISTING CONDITIONS

The inventory of existing conditions at an airport documents the current state of the Airport and its infrastructure. This information serves to provide support for the direction of and basis for the proposed development of the Airport. This chapter presents the existing conditions of the airfield infrastructure at GNV.

3.1 AIRPORT FACILITIES

The following tables present a summary of the existing conditions of the airfield and the Airport. Table 1 details the basic airport information and nearby navigational aids; Table 2 presents details regarding the runway system.

Table 1 – Airport Information and Navigational Aids

Airport Information		
Airport Reference Point (ARP)	Latitude: 29-41-24.2 N	Longitude: 82-16-18.4 W
Airport Elevation	151 ft.	
Airport Traffic Control Tower	≈ 1500 ft. S from ARP	
Beacon	≈ 3000 ft. NW from ARP	
Lighted Wind Indicator/Segmented Circle	≈ 1700 ft. NW from ARP	
Part 139 Classification-ARFF Index	Class I-B	
Navigational Aids (NAVAIDS)		
Type	**Name/ID**	**Distance/Bearing**
VORTAC	Gators/GNV	On Field (≈ 800 feet N from ARP)
NDB	Wynds/GN	5.3 nm/ 283.0°
NDB	Palatka/IAK	24.1 nm/ 275.3°
VORTAC	Ocala/OCF	30.8 nm/ 355.6°
VORTAC	Cecil/VQQ	37.1 nm/ 212.4°
TACAN	Jacksonville/NIP	45.1 nm/ 223.6°

Source: National Flight Data Center

Table 2 – Existing Runway System Information

Runway 07-25	**Runway 07 End**	**Runway 25 End**
Dimensions	4158 ft. x 100 ft.	
Pavement Surface Course/Treatment	Asphalt	
Pavement Surface Treatment	Grooved	
Runway Design Code-Existing	B-II-4000	
Runway Reference Code – Existing	B-II-4000	
Runway Design Code – Future	B-II-2400	
Runway Reference Code - Future	B-II-2400 still or CIII when rwy ext to 6500'?	
Pavement Strength (lbs.)	75,000 (SW) | 150,000 (DW) | 210,000 (DT)	
True Alignment:	61°	241°
Runway Edge Lighting	MIRL	
Markings:	Non-precision instrument	Non-precision instrument
Markings Condition:	Good	Good
Latitude:	29-41-25.1021 N	29-41-45.0383 N
Longitude:	82-16-56.6098 W	82-16-15.3666 W
Elevation:	151.4 ft.	130.2 ft.
Threshold Crossing Height:	44 ft. AGL	42 ft. AGL
Visual Slope Indicator:	4-light PAPI on left	4-light PAPI on left
Runway End Identifier Lights:	No	No
Runway Instrument Approach Aids	RNAV | VOR	RNAV | VOR
Runway 11-29	**Runway 11 End**	**Runway 29 End**
Dimensions	7504 ft. x 150 ft.	
Pavement Surface Course/Treatment	Asphalt	
Pavement Surface Treatment	Grooved	
Runway Design Code – Existing/Future	C-III-2400	
Runway Reference Code – Existing/Future	C-III-2400	
Pavement Strength (lbs.)	75,000 (SW) | 260,000 (DW) | 320,000 (DT)	
True Alignment:	102°	282°
Runway Edge Lighting	HIRL	
Markings:	Precision instrument	Precision instrument
Markings Condition:	Good	Good
Latitude:	29-41-26.0061 N	29-41-10.2134 N
Longitude:	82-16-50.1548 W	82-15-27.0276 W
Elevation:	147.4 ft.	105.1 ft.
Threshold Crossing Height:	54 ft. AGL	55 ft. AGL
Visual Slope Indicator:	4-light PAPI on left	4-light PAPI on right
Approach Lights:	No	1400 ft. MALSR with RAIL
Runway End Identifier Lights:	Yes	No
Runway Instrument Approach Aids	RNAV | VOR	ILS | RNAV | VOR

Source: National Flight Data Center

CHAPTER 4
AERONAUTICAL FORECASTS

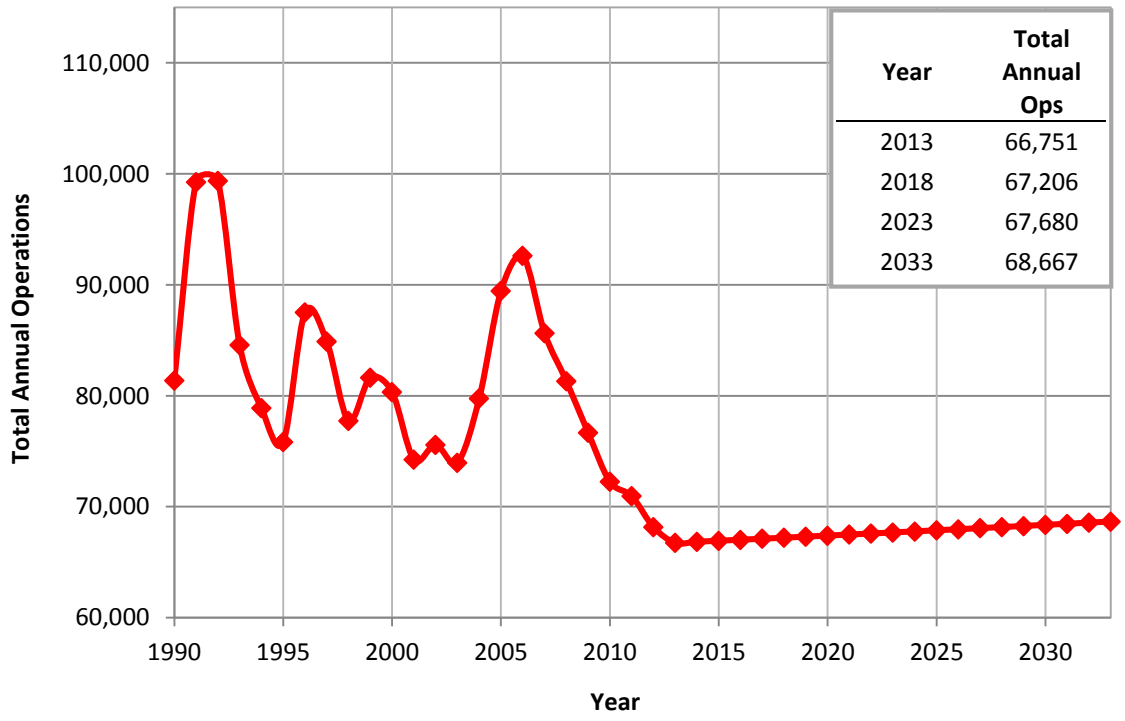
Aeronautical forecasts represent future levels of aviation activity demand used to effectively plan for future development of an airport. The Terminal Area Forecast (TAF) is the FAA developed standard measure of an Airport's historical and projected aviation activity. No advanced forecasting was conducted as part of the ALP Update Study. Therefore, the January 2013 TAF serves as the basis for the projection of the short, medium, and long-term aviation demand forecasts. This chapter presents the forecast projections of aviation demand for GNV for the 20-year period from 2013 to 2033.

The January 2013 TAF was also the basis for enplanement forecasts as well as the consideration of scenario forecasts. This information may be found in a separate document from the ALP Update Report prepared as part of the Terminal Concept Study. The terminal concept study also included the consideration of current and future TSA/AIP directives, airport operational needs, projected costs and construction duration/phasing considerations (see also Chapter 7).

4.1 TOTAL ANNUAL OPERATIONS

Airfield activity at an airport is measured and forecast according to annual aircraft operations. The number of annual aircraft operations forms the key measures of activity. Figure 3 below presents the January 2013 TAF historical and projected total annual operations for GNV.

Figure 3 – Total Annual Operations Forecast



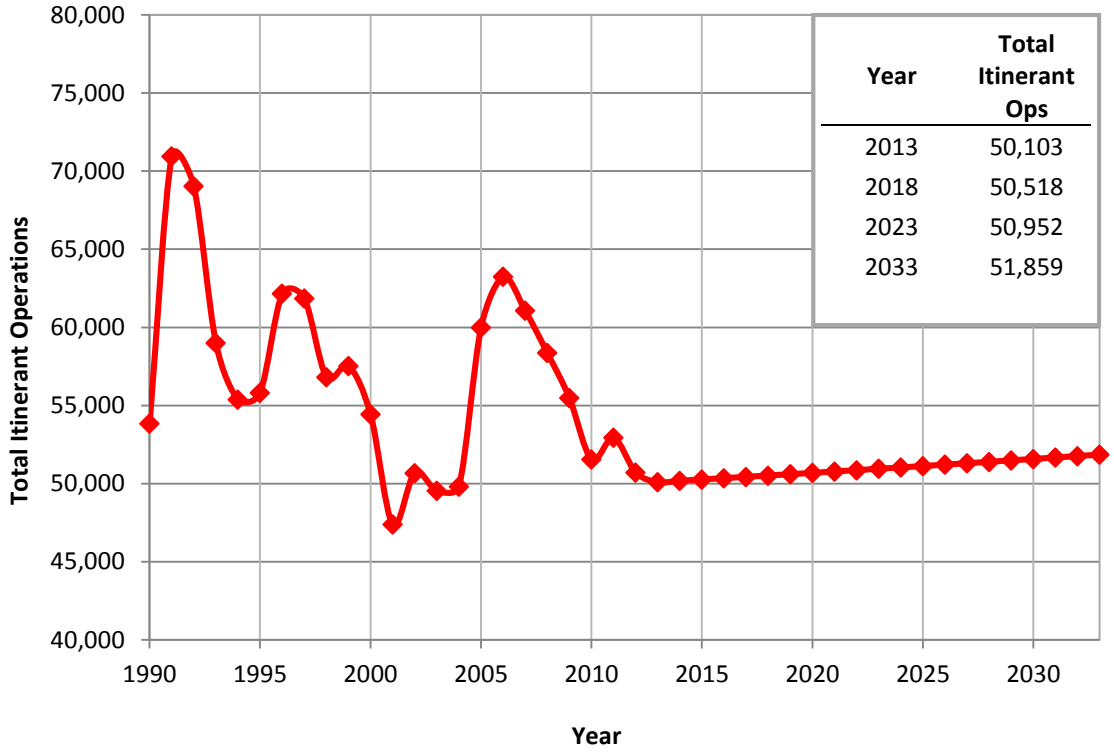
Data Source: January 2013 TAF

From 2013 to 2033, the total annual operations at the Airport is projected by the January 2013 TAF to increase at modest rate at an Average Annual Growth Rate (AAGR) of 0.14 percent. Comparitively during the same time period the total annual aircraft operations of the State, FAA southern region, and Nation are projected to incease at an AAGR of 1.03, 0.67 and 0.69 percent respectively.

4.2 ANNUAL ITINERANT OPERATIONS

The FAA defines itinerant operations as operations performed by either an aircraft operating under IFR, SVFR, or VFR, which lands at an airport, arriving from outside the airport area, or departs an airport and leaves the airport area. Figure 4 below presents the January 2013 TAF historical and projected total itinerant operations at GNV.

Figure 4 – Total Annual Itinerant Operations Forecast



Data Source: January 2013 TAF

Over the 20 year period from 2013-2033, the total annual itinerant operations are projected by the January 2013 TAF to grow at an AAGR of 0.17 percent. During the same 20 year period, the total annual itinerant operations are expexted to increase by an AAGR of 1.17% in the State, 0.83 in the FAA southern region, and 0.85% in the Nation as a whole.

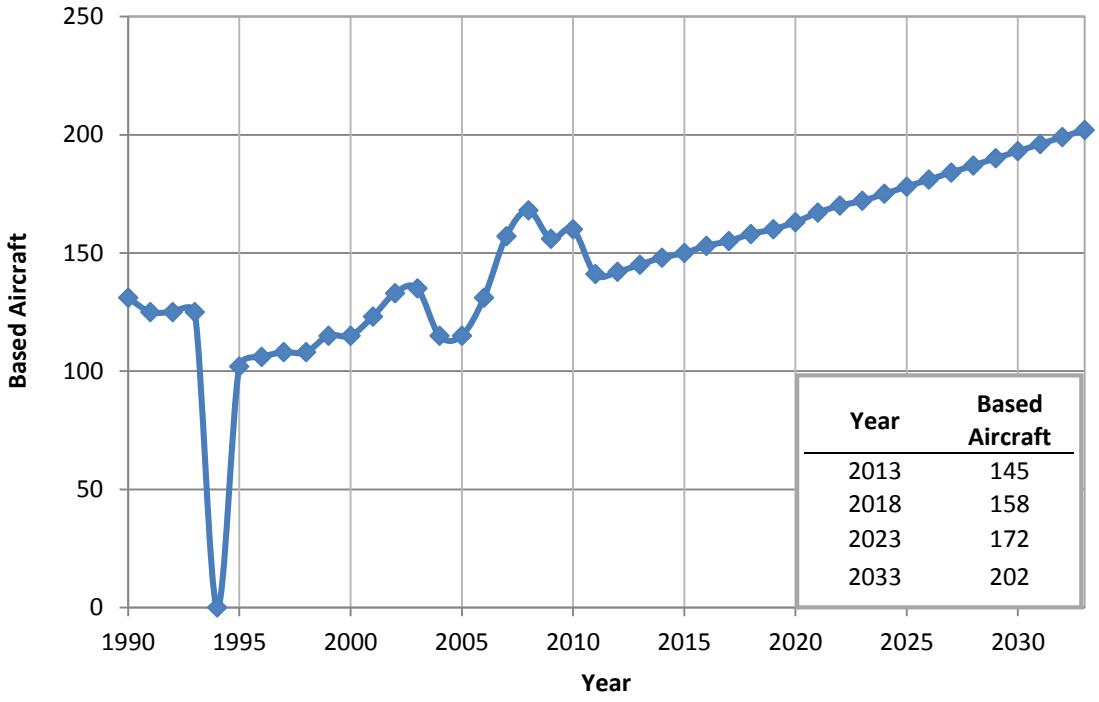
4.3 BASED AIRCRAFT

Another measure of aviation activity is the number of based aircraft, which are classified as the aircraft permanently housed at an airport. The number of based aircraft is an important measure of an airport's activity as based aircraft help generate revenues from tie-down and hangar leases, as well as fuel sales. Categories of based aircraft include single-engine, multi-engine, jet, and rotorcraft.

Currently, at GNV there are 146 based aircraft of which approximately 68% are single engine, 9% are multi-engine, 18% are jets, and 5% are helicopters.

As depicted in Figure 5, the January 2013 TAF projects 202 based aircraft in 20 years, increasing at an AAGR of 1.67%. During the same 20 year period, the total annual itinerant operation are expexted to increase by an AAGR of 1.44% in the State, 0.91% in the FAA Southern Region, and 0.88% in the U.S. as a whole.

Figure 5 – Total Based Aircraft Forecast



Data Source: January 2013 TAF

4.4 ANNUAL INSTRUMENT APPROACHES

The FAA includes data regarding annual instrument approaches in TRACON (Terminal Radar Approach Control) information. The TRACON is the same information typically listed in TAF and OPSNET (The Operations Network) data. For Gainesville Regional Airport, no TRACON data was available.

4.5 ANNUAL ITINERANT OPERATIONS BY CRITICAL AIRCRAFT

The critical aircraft is the individual airplane or family grouping of airplanes with the fastest approach speed and widest wingspan that have at least 500 annual itinerant operations at an Airport. For Gainesville Regional Airport, the future critical aircraft, representing the family of ADG III aircraft is the Boeing 737.

According to 2011 fuel records and tower counts, there were 429 operations by aircraft of this type, including 377 charters and diversions as well as 52 operations by cargo aircraft. This 429 total is used as the 2013 baseline and held constant through 2018 for itinerant operations by the critical aircraft.

The following for years beyond 2018 assumes a scenario of activity growth assuming that a runway extension to Runway 11-29 would be in place by 2020. The scenario also considers:

- **Diversions and charters** - Increase in activity will be assumed because of a future runway extension with overall activity assumed to conservatively increase at an AAGR of approximately 1.85 percent from 2023-2033. This equates to an activity level of approximately seven operations per week today versus nine per week in 10 years and 11 per week in 20 years.
- **Cargo operations** - There are approximately two air cargo arrivals per month. The forecast assumes the additional runway length will result in an increase to three per month or six total operations.

Table 3 identifies the forecast of the itinerant operations for the critical aircraft at GNV

Table 3 – Itinerant Operations by the Critical Aircraft

Year	Charters/ Diversions	Cargo	Total
2011	**377**	**52**	**429**
2013	377	52	429
2018	377	52	429
2023	471	72	543
2033	566	72	638

4.6 ANNUAL ITINERANT OPERATIONS BY MORE DEMANDING AIRCRAFT

At Gainesville Regional Airport, the operations by aircraft with more demanding characteristics than the critical aircraft are a function of military aircraft and large charter aircraft associated with sporting events. Typically, these aircraft have physical characteristics corresponding to ADG IV aircraft.

Occasionally military KC-10 and KC-135 aircraft conduct approximately refuelings at the Airport. It is anticipated that larger aircraft such as the KC-10 or KC-135 could operate as many as 240 operations annually if Runway 11-29 were extended to 8,000 feet. Additionally large sporting charters utilizing Boeing 757 and 767 aircraft conduct approximately 16 operations per year. Using this as the 2013 baseline held constant through 2018, the forecast assumes sporting charters will initially 25 percent increase in activity followed by a 1.85% AAGR for the remaining period.

Table 4 identifies the forecast of the itinerant operations of the more demanding aircraft at GNV

Table 4 – Itinerant Operations by More Demanding Aircraft

Year	Military Refueling	Large Sporting Charters	Total
2011	**0**	**16**	**16**
2013	0	16	16
2018	0	16	16
2023	240	20	260
2033	240	24	264

CHAPTER 5
ALP UPDATE STUDY RESULTS

This chapter presents the results of the ALP Update study components including the ATCT Site Selection Study, ARFF Location Concept Planning, Runway 11-29 Airspace Protection, Airport Land Development Opportunities, and the update of the ALP set. This chapter also presents the justification of proposed developments as applicable.

5.1 AIRPORT TRAFFIC CONTROL TOWER SITE SELECTION

This phase of the ALP Update Study investigated the potential options for replacement of the Airport's existing Airport Traffic Control Tower (ATCT). This involved an alternative ATCT site analysis per FAA Order 6480.4B *Airport Traffic Control Tower Siting Process,* Chapter 8 – *Alternate Siting Process*. This section presents a summary of the siting process for a proposed ATCT at GNV. Further information regarding this process is located in Attachment A.

5.1.1 Existing Site

The Gainesville Regional Airport currently maintains an ATCT located on the southern portion of Airport property. It is located approximately 1,050 feet from the centerline of Runway 11-29 and approximately 2,800 feet from the approach end of Runway 11. The ATCT facility, constructed in 1973, has a tower cab height of 37 feet above ground level, an associated base building, and vehicle parking lot. The facility has operated as part of the Federal Contract Tower program since September 1995 and operates daily from 0645 to 2230 local time (see Figure 6).

Figure 6 – Existing ATCT Facility



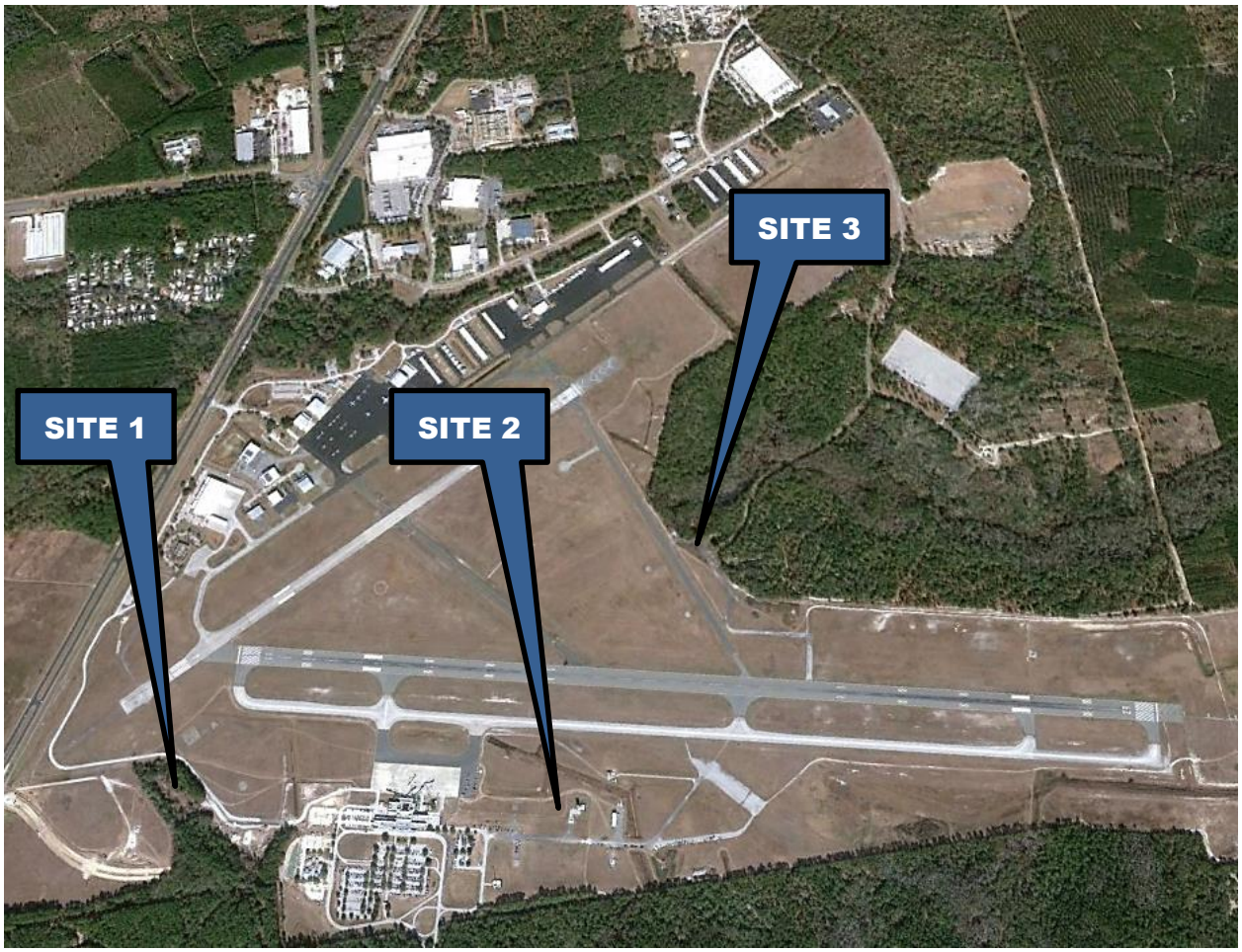
The current geometric layout of the airfield the existing tower facility does not have adequate height to provide controllers with proper line-of-sight to all movement areas on the airport. When examined with the FAA's Airport Traffic Control Tower Visibility Analysis Tool (ACTVAT), the existing tower fails the angle of incidence criteria. These factors make the existing tower facility functionally obsolescent, thereby requiring a new facility.

5.1.2 Proposed Site Determinations and Description

To determine potential site locations for a proposed ATCT at GNV, the project team first met on-site with airport management and air traffic control representatives to discuss and observe several preliminary locations. Once these initial sites were identified, the current Master Plan and the Airport Layout Plan were examined to obtain information on current and proposed airport development, as well as topographic information. Other planned development and potential environmentally sensitive areas were also considered. No field surveys or geotechnical investigations were conducted as part of this study.

After these considerations and iterative line-of sight and object discrimination trials using ACTVAT and future runway/taxiway end points, three specific sites were identified as potential ATCT locations. Figure 7 demonstrates the approximate location of the proposed sites evaluated in the study.

Figure 7 – Proposed ATCT Site Locations



5.1.3 Siting Analysis

The ATCT siting study next analyzed each proposed ATCT location in accordance with the Alternate Siting Process detailed in FAA Order 6480.4B. This includes evaluating each proposed site based on the 10 evaluation criteria identified in 6480.4B:

- Visual Performance
- Terminal Instrument Procedures
- Part 77 Surfaces
- Sunlight/Daylight
- Artificial Lighting
- Atmospheric Conditions
- Industrial Municipal Discharge
- Site Access
- Interior Physical Boundaries
- Security

5.1.4 Recommended Site

The siting analysis determined that Site 2 as the recommend replacement site for the ATCT at GNV. Site 2 is located approximately 150 feet west of the existing ATCT facility. The proposed ATCT structure will be located such that it does not present a line of sight (LOS) obstruction to the existing ATCT during construction, and provide that the existing ATCT does not represent a LOS obstruction to the proposed ATCT.

The physical location of Site 2 makes use of existing physical infrastructure to provide the most suitable ATCT location. Due to naturally varying terrain, the proposed tower height at Site 2 is 123 ft. AGL. This height is driven by the need to provide the appropriate lines of sight and angle of incidence to all aircraft movement areas.

In ultimate development of the Airport, approximately 5.5 acres of trees would have to be removed near the on-airport wetland area to provide a clear line of sight to the future end of Runway 25. Permits associated with wetland construction would need to be acquired and Best Management Practices (BMPs) could be used to minimize harm to the rest of the on-airport wetland area. The FAA considers the proposed ATCT at Site 2 suitable to provide ATC services. Therefore, considering airspace determination, cost, and low environmental impact, Site 2 is recommended as the replacement site for the ATCT at GNV. The final Safety Risk Management Document (SRMD) is provided in Attachment A.

5.2 FUTURE AIRCRAFT RESCUE AND FIRE FIGHTING CONCEPT PLANNING

This phase of the ALP Update investigated the existing condition of the ARFF building and the need and timing for renovation, rehabilitation, or potential relocation. The ARFF concept planning study assessed whether the current structure, if renovated, would provide a cost effective solution. The study also identified and evaluated alternative locations for potential ARFF relocation. For the purposes of conciseness, this section summarizes the process and results of the ARFF concept planning study. The full study in its entirety is located in Attachment B.

5.2.1 Existing Facility – Condition Assessment

Gainesville Regional Airport maintains an Aircraft Rescue and Firefighting (ARFF) facility along Runway 7-25 within the general aviation area. The existing ARFF facility constructed in 1979 is a single-story building occupying 6,000 square feet in total. It consists of two drive-through garage bays, an outdoor patio, an activity/dining room, kitchen, bedroom, offices, corridor, storage room, dorm rooms, locker/weight room, restrooms with showers and mechanical room. Figure 8 depicts the airside view of the existing facility.

Figure 8 – Existing ARFF Facility



As of April, 2014, the FAA lists the Airport as an Index B facility. The existing facility is not adequate to support Index B equipment or the size of modern ARFF response vehicles. The facility does not comply with current building codes and is in need of renovation. The Airport's 2006 Capital Improvement Program (CIP) identified the renovation of this facility. To evaluate cost to renovate and expand versus replacement, a non-destructive condition assessment of the current facility was conducted. This assessment included evaluating the following components/systems:

- Structure
- Roofing
- Windows
- Flooring
- Ceilings
- Line of Sight
- Truck Bays
- HVAC
- Fire Protection System
- Plumbing System

- Lighting/Power Systems

Based on the assessment and evaluation of the items above the overall building condition is in fair to poor condition. It requires extensive renovation/modification to address the issues found by the non-destructive evaluation. Major issues identified include:

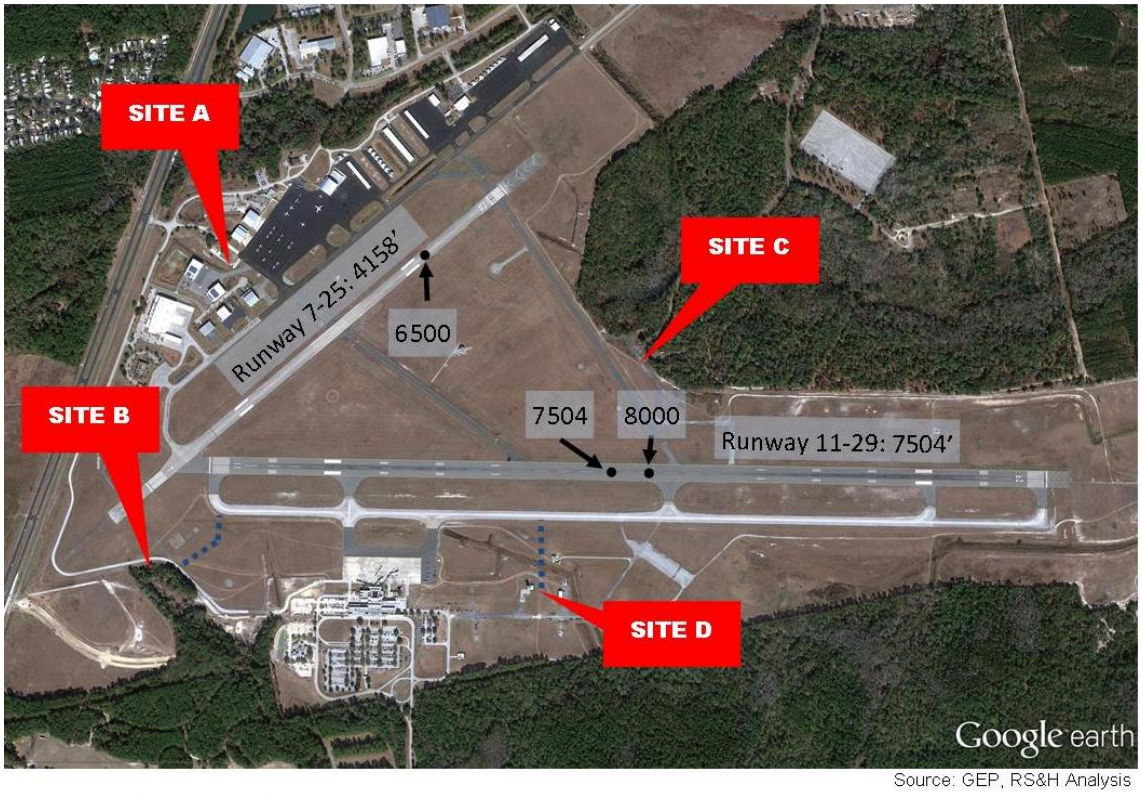
- Obstructed views to the Airfield
- Non-compliance with current building code
- Contaminated asbestos/asbestos products
- Extensive roof leaking
- Uncontrolled moisture infiltration
- HVAC system exceeding service life

In reviewing the feasibility of an existing ARFF, though the initial cost to renovate is slightly less than construction of a new facility, renovation alone will not resolve all the problems found. Additionally, there may be other underlying issues not immediately known without further investigation. Good planning practice indicates that a new ARFF facility will be required at an alternate location.

5.2.2 Alternate Site Identification and Evaluation

The ARFF concept planning study identified and evaluated (4) alternate locations for potential re-location of the ARFF facility. Three proposed ARFF facility locations were determined based on future planning, available land, and proximity to the airfield. Figure 9 presents the potential locations evaluated.

Figure 9 – Alternate ARFF Facility Locations



Source: GEP, RS&H Analysis

Future Roadway

Center of Proposed Runway

The quantitative and qualitative evaluation of these sites considered the following evaluation criteria:

- **Response Time -** The key parameter for site consideration. Federal regulations state the ARFF vehicle must reach the midpoint of the farthest air carrier runway from its assigned post within 3 minutes from the time of the alarm. For this evaluation, as depicted in Figure 9, runway lengths included 7,504 feet and 8,000 feet for Runway 11-29 and 6,500 feet and Runway 7-25.
- **Operational Criteria**. Another key parameter. Operation criteria refer to technical aspects of the site, size and potential for expansion, airfield and terminal visibility, and ability for the existing facility to remain functional during construction of a replacement facility.
- **Site Preparation and Infrastructure -** Considers the availability of utilities, site preparation considerations, and landside/airside access.
- **Environmental Considerations -** This factor takes into consideration any potential environmental considerations associated with the site location
- **Airport/Community Use -** This factor takes into consideration the utility of the site as both an airport ARFF facility (a function of response time) and the potential as a co-located community Fire Station.
- **Highest and Best Use -** This factor takes into consideration the site location relative to the airport at large and whether or not it represents the highest and best use potential of the land at that location.

Based upon evaluation of the six factors, the recommended site for future ARFF development is Site D. Site D best meets the goals and objectives for GNV:

- **Response Times -** All the response times are in the relative range with Site D equivalent to the others. For access to the primary runway, Site D is marginally better than the others.
- **Operational Criteria -** Overall, Site D best meets these criteria, in particular the site has good visibility of the airfield and terminal apron and has sufficient size for future expandability. Site B and Site C also meet FAA operational criteria where there are important operational issues with Site A. Due to the age and condition of the existing ARFF structure, a new building is required for Site A. While the site is technically large enough, it does not provide future room for expansion. At the same time, it has limited airfield visibility as well as no terminal visibility. During the time a new facility is being constructed, the ARFF function at GNV would need to be in a temporary location. Unlike the other sites, there is no immediate competing land use. If a new ARFF structure is not built at the current location, the site is desirable for construction of a corporate aircraft hangar similar to those in proximity.
- **Site preparation/infrastructure -** In terms of site preparation, Site D is a greenfield site with existing infrastructure whereas Site A, the current location, requires demolition of the existing structure before construction of a new facility. The site assessment of the current facility concluded that it would be more cost effective to build a new structure than to renovate the existing one. In addition, issues such as asbestos and mold would need to be addressed. Site B and Site C are also greenfield sites but Site B requires more site preparation than Site D. Site C requires the most site preparation but not in terms of the site for the structure but in terms of the need to construct a road to access it.
- **Environmental considerations -** Site D does not present any adverse environmental considerations and does not have any potential impact to the wetlands as could exist for Site B and Site C.
- **Airport/community use -** From the standpoint of being able to develop a site that would jointly serve both an aviation and community fire location function, Sites A, B, and D present opportunities to provide access or site development for a co-located facility.

- **Highest and Best Use -** From a highest and best use perspective, Site D is judged equal or better than the others.

5.3 AIRSPACE PROTECTION FOR ULTIMATE RUNWAY EXTENSION OF 11-29

Gainesville has been very successful in attracting new technically oriented businesses to the community over the past decade. The community is building a critical mass in culture, technology, and education, in part because of the University of Florida's emergence as a major university and also because the quality of life in the Gainesville Area has become nationally recognized.

In response to anticipated long-term growth, ongoing planning activities for GNV must consider the impact of that growth on long-term runway length requirements. The 2006 Master Plan evaluated a long-term potential length for Runway 7-25 to be 6,500-feet.

This phase of the ALP Update provided a similar examination of the ultimate length of Runway 11-29 for purposes of providing information to the City of Gainesville and Alachua County for purposes of advance planning for airspace protection. This section summarizes the process and results of this study. The Runway 11-29 Working Paper is provided in Attachment C.

5.3.1 Future Runway Length

The runway length analysis for GNV is based on the identification of the potential future users and their needs, and aircraft fleet changes. The analysis also takes into consideration the additional capability that a longer runway could provide users operating at maximum zero fuel weight for extended segments. Additionally, the additional range enabled by a longer runway capability may also open new markets.

Interviews with Airport Director Allan Penksa and General Manager of University Air Center Bill Pokorny, identified future potential users based on historical operations.

- **Air Cargo** - There have been periodic discussions at GNV over the years regarding the potential to stage limited air cargo operations. Despite efforts to identify potential air cargo operations, the prospect for significant future air cargo activity is not considered to become a reality within the short term. However, provided the strong local need for such services, the Airport Layout Plan should continue to identify areas for air cargo.

- **Military Operations** - Military activities have a strong connection with GNV. According to tenant interviews during one month in 2012, 20 large military aircraft refueled at the Airport, including the C-130 Hercules as well as A-10s and CH-47s. In addition, U.S. Navy F/A-18 Hornets, T-6 Texans refuel at GNV enroute to Key West. While GNV represents an excellent refueling location for many military aircraft, a runway extension to at least 8,000 feet would put GNV into position to attract more military flights. In discussions with military personnel at Air National Guard bases across the country during other studies, the 8,000-foot length is often cited as the general runway length desirable for operating tactical aircraft.

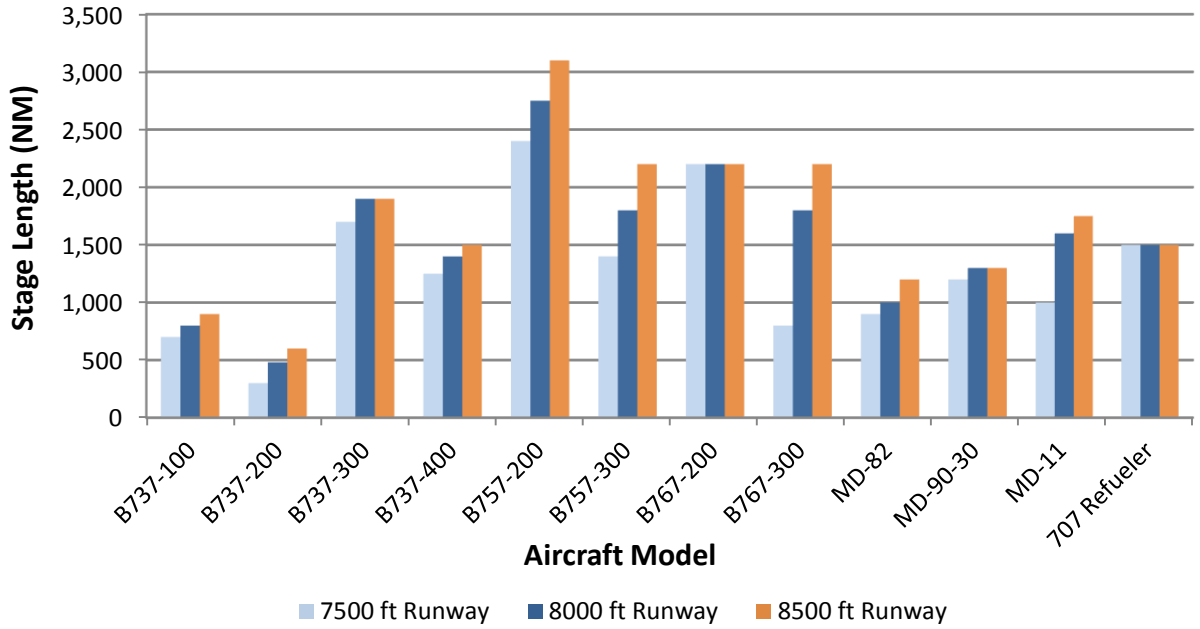
- **General Aviation** – Interviews revealed that there a numbers of older general aviation aircraft that operate at GNV. These aircraft are either privately owned by individuals or operated by aerial refuelers. Aerial B-707 refuelers have requested operation at GNV to top off their fuel tanks at GNV but cannot do so due to inadequate runway length.

- **Charter Operations** - In general, the current 7,504-foot runway at GNV provides sufficient runway length for handling charter operations. However, it is noteworthy that there are instances when fully loaded B-737s carrying University of Florida teams and supporters to bowl or away games must use the full runway length. Other Southeastern Conference schools are increasingly using B-757 aircraft and occasionally B-767 aircraft. It is not uncommon for these aircraft to use the full runway length upon departing or use reverse thrusters upon landing. In the past, Allegiant Airlines has used GNV as a location for their charter operation and DC-9 aircraft.

- **Maintenance Operations** – Gainesville Regional Airport has and continues to have interest as a maintenance facility due to the recognized advantages of GNV inland location from hurricanes. Currently, Silver Airways leases a facility for maintenance of its SAAAB-340 and Be-1900 fleet. Another current tenant, Air Methods, Inc., currently operates a regional helicopter maintenance facility in the former DayJet hangar. Air Methods is the largest publically traded operator of emergency medical helicopters in the U.S. GNV continues to be a candidate for a potential airline and jet maintenance operations.

Figure 10 provides a graphic depiction of the runway length analysis. The analysis considers the existing runway length and two future conditions: 8,000 and 8,500 feet. Many of the aircraft in this figure are older models are likely to be used for charter, air cargo, and general aviation uses. All calculations assume maximum gross takeoff weight as the measure for serviceability used for evaluating runway length.

Figure 10 – GNV Runway Length Analysis



As Figure 10 demonstrates, only a modest increase in range is achievable for the alternative runway lengths. The benefits are most noticeable between 7,500 feet and 8,000 feet for the B757-200, B-757-300, B-767-300, and MD-11. Increasing the runway length from 8,000 feet to 8,500 feet, for these aircraft yields less benefit than extending from 7,500 feet to 8,000 feet.

The other parameter used to evaluating runway length is the difference in the markets potentially served by extending the runway. Figure 11 presents a range map for GNV based on 300, 500, and 1,000 mile great circle radii.

Figure 11 – GNV Range Map



The runway length analysis for GNV revealed that, for planning and airspace protection purposes, it is reasonable to plan for an ultimate length of Runway 11-29 of 8,000 feet.

Currently, there is no immediate justification for a runway extension. However, there are a number of developments that could warrant a future runway extension, should those conditions materialize. These are:

- Demand for additional commercial passenger service.
- Increased operations from fully loaded sporting charter aircraft.
- Becoming an attractive alternative for transient military refueling.
- Further interest from air carriers as a candidate location for a maintenance base.
- Opportunities for diversions of larger aircraft during period of severe weather in other parts of the state.

5.3.1.1 Runway 29 Extension Rough Order of Magnitude Cost

The estimated cost for a 500' Runway extension to Runway 29, extension of parallel taxiway, relocation of glide slope, approach lighting system, and Precision Path Indicator lights, and FAA flight certification is approximately $4.9 million.

5.3.2 Alteration of Future Runway 7/25 Primary Approach

Originally, the ALP Report did not include study of Runway 7/25. Information pertaining to the ultimate 6,500 foot runway was to be incorporated into the report from the 2006 Master Plan and separate runway extension environmental assessment.

Today, Runway 7/25 is 4,158-feet long with non-precision instrument approaches on each runway end. The 2006 Master Plan provided for a 6,500-foot runway with a future precision instrument approach (PI) for Runway 7 and continuation of a non-precision approach (NPI) for Runway 25. A PI approach RPZ is larger than a NPI approach by about 40 acres.

When the 2006 Master Plan was prepared, GNV had plans to construct a new access road from Waldo Road directly to the terminal. This new "front door" is highly visible and a direct route from the west as opposed to turning east on 39th Street, traveling approximately 4,500 feet before entering toward the terminal from the south. In addition, the new roadway access was envisioned to open up new commercial land for airport development south of the terminal access road and facilitate development on the north side of the runway as well. This area is located in the far base of the future PI RPZ trapezoid.

However, the land fronting Waldo Road both north and south of the new airport entrance will be within the future PI RPZ. The land located in the first 1,000-feet of the new airport access road extending as far as 600-feet south of that road exists within this future RPZ. Given the limitation in potential height of structures due to a 50:1 approach slope, the worst case scenario is limiting heights to 38-feet and less.

As a consequence of the impact to developable land, it was suggested that consideration be given to placing the future PI approach to Runway 25 as opposed to Runway 7. After analyzing wind coverage for both runway ends (see Table 5) and consultation with the FAA, the conclusion is the small differential between the wind coverage of Runway 7, which is better, and that of Runway 25, the option for Runway 25 is acceptable.

Table 5 –GNV Runway Wind Coverage

Wind Component	Runway 11	Runway 29	Runway 7	Runway 25
10.5 Knots	85.23%	86.39%	85.73%	85.45%
13 Knots	86.38%	87.61%	86.50%	86.31%
16 Knots	87.40%	88.59%	87.14%	87.00%
20 Knots	87.57%	88.75%	87.25%	87.13%

Source: NOAA 2013

The consequence of this decision is approximately 30 square miles of Part 77 surfaces that represent the airspace associated with Runway 7 is removed and 30 square miles of Part 77 surfaces is added off Runway end 25. The Runway 7 airspace is over the City of Gainesville whereas the Runway 25 airspace will be over more rural Alachua County.

5.3.3 City and County Land Use Planning

There are a number of airport planning factors to consider in conjunction with a future runway extension. First, there is the identification of the runway length as part of the ongoing airport planning process, of which this ALP Update is a part. This includes the FAA agreeing to place the runway extension within the Airport Layout Plan set for purposes of reserving airspace for it as well as

providing the ability for the Airport to identify the project within its CIP. At the appropriate time when there is evidence that the Airport warrants a runway extension, environmental analysis would need to be conducted. Once the FAA approves the environmental documentation for the extension and the Airport identifies probable funding, the runway extension can be designed and constructed.

Recognizing this, the Airport has embarked upon another set of pre-design considerations that are also important. This is the planning to protect the airspace for the runway extension as well as protection of the relocated PI approach from Runway 7 to Runway 25. While the FAA performs an airspace review as part of the Airport Layout Plan approval process, anything done to protect the approaches beyond the airport boundary remains the responsibility of the local community. Any obstructions within a runway's approach that could affect the approach and departure procedures of an airport result in the FAA modifying the Airport's approach or departure procedures. Generally, the FAA does this by increasing the airport's minimum altitude requirements. The best way to keep this from happening is for the community to have controls in place to ensure compatible development near the Airport.

The purpose of this analysis is to provide Alachua County and the City of Gainesville with recommendations for their consideration when updating existing ordinances to protect existing and future approach and departure procedures for all runway ends. Table 6 –presents a summary of the recommendations for city and county land use regulations.

Table 6 –Recommended Considerations for City and County Land Use Regulations

City of Gainesville **Part II Code of Ordinance, Chapter 30-Land Development Code Appendix F – Airport Hazard Zoning Regulations**	**Alachua County** **Unified Land Development Code** **Chapter 405-Special Districts and Activity Centers, Article 7-Airport Impact Regulations**
1. Airport Height Notification Zone – Recommend consideration of updating the Airport Height Notification Zone to represent the runway lengths for Runway 11-29 (8,000 feet) and Runway 7-25 (6,500 feet), the same as shown on the updated Airspace Plan sheet of the Airport Layout Plan after FAA Airspace Approval. The FAA Airspace Approval is anticipated to begin in mid-2014.	1. Airport Clear Zones and Obstruction Exhibit is the Airport's Part 77 Airspace Surfaces (Imaginary Surfaces). Recommend consideration of updating this Exhibit to represent the updated Airspace Plan sheet of the Airport Layout Plan after FAA Airspace Approval. The FAA Airspace Approval process is anticipated to being early mid-2014.
2. Clear Zone. a. Recommend consideration of updating the Clear Zone map to represent the Runway Protection Zones (RPZ) shown on the updated Airspace Plan sheet of the Airport Layout Plan set after FAA Airspace Approval. The FAA Airspace Approval is anticipated to begin in early 2014. b. Recommend consideration of updating Section II(B)2 to reflect FAA Interim Guidance on Land Uses Within a Runway Protection Zone published on September 27, 2012.	2. Clear Zone. N/A
3. Airport Noise Zone. No modifications recommended for consideration.	3. Existing Land Uses Within LDN Contour Lines Map. a. Recommend that the City and County use the same noise zone map

	b. Recommend the terminology for Day Night Average Sound Level (DNL) be updated to the short cut reference of DNL as opposed to LDN, as shown.
4. Section III – Special Requirements. a. Recommend consideration of updating of the Educational Facilities Overlay Zone Map to reflect Runway 11-29 at 8,000 feet and Runway 7-25 at 6,500 feet. b. Recommend considering the amendment of provisions pertaining to Bird Strike Hazards to conform to FAA Advisory Circular 150/5200-33B, as amended. c. Recommend amending Section III, Subpart B of Special Requirements to consider including an advance notification and coordination requirement prior to a proposed controlled burn near the Airport so that, as a minimum, the Airport would be aware of proposed burns.	4. Section 405.29 General Use Restrictions a. In accordance with Florida Statutes Chapter 333.03, Subpart (2) and FAA Advisory Circular 150/5200-33B, as amended, recommend the consideration of including a provision for bird strike hazards. b. Recommend amending Section 405.29 (b) to consider including an advance notification and coordination requirement prior to a proposed controlled burn near the Airport so that, as a minimum, the Airport would be aware of proposed burns. c. In accordance with Florida Statutes Chapter 333.03, Subpart (3), recommend the County consider establishment of an Educational Facilities Overlay Zone Map. This map would be the same one as used by the City once the City amends its map for runway lengths.
5. Determination of Boundaries – No Change recommended	5. Recommend that the County consider adding a section similar to the City's Section IV – Determination of Boundaries.
6. Disclosure Statement - Recommend that the City consider inclusion of disclosure statement for persons who sell, lease, assign, or otherwise convey an interest in real property located within any of the City's regulated noise zones.	6. Disclosure Statement – No Change Recommended
7. One Engine Inoperative Surface – Recommend that the City consider amending the ordinance to include regulation of the One Engine Inoperative Surface for GNV Runway 11-29.	7. One Engine Inoperative Surface – Recommend that the County consider amending the ordinance to include regulation of the One Engine Inoperative Surface for GNV Runway 11-29.

5.4 GENERAL AVIATION INVENTORY

As a part of the ALP Update Study, a general aviation inventory was conducted to determine the local pilot population, general condition of infrastructure, and aircraft parking facilities inventory. This section presents the results of the general aviation inventory.

5.4.1 Pilot Population

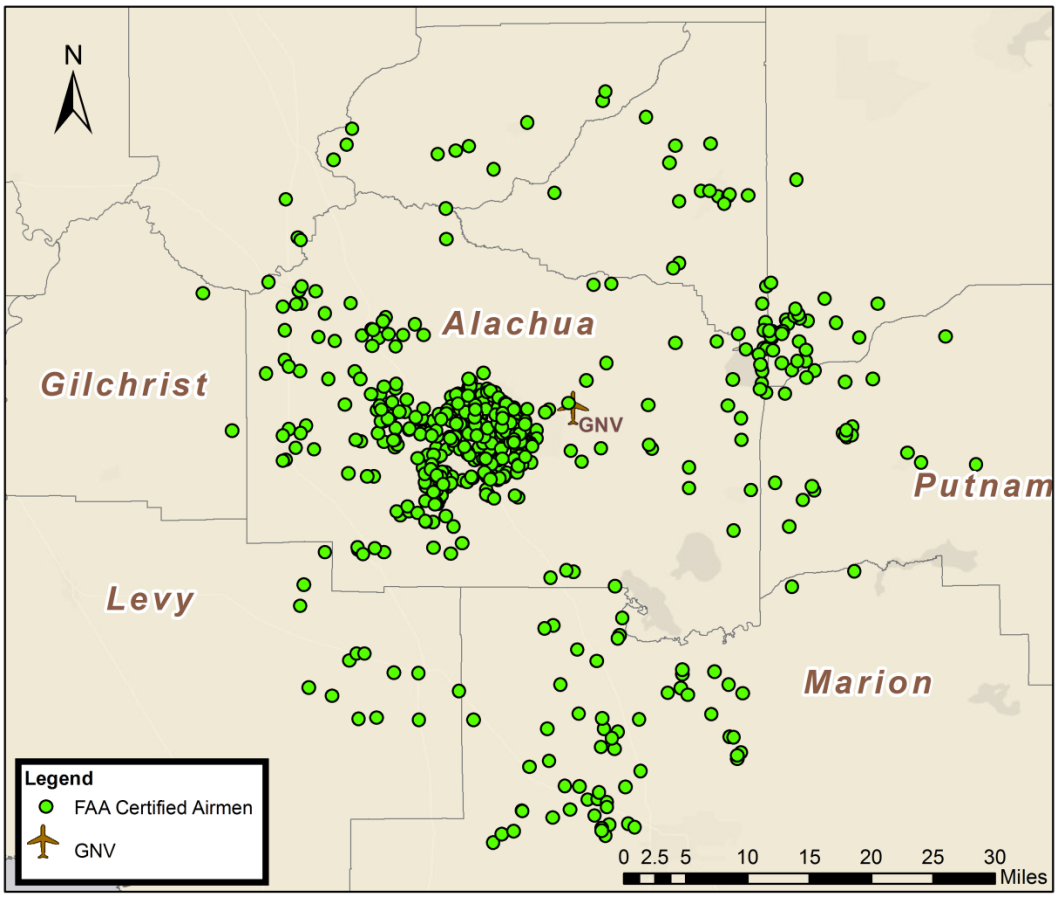
The local pilot population nearby GNV represents the potential customer base for general aviation activity at the Airport. Nearby certified pilots are most likely the prime candidates to utilize airport services such as basing aircraft, renting aircraft, flight training, and other services.

A search of the FAA's *Airmen Certification Database*, a public record of FAA certified pilots, reveals that within an approximate 30 statute mile radius from the Airport, there exists a population of 655 certified pilots. This number includes pilots who may or may not have a corresponding current

medical certificate. Figure 12 depicts a graphic representation of this local pilot population surrounding GNV.

It is important to note that while the *Airmen Certification Database* represents current data, an option does exist for a person to have their name removed from the publicly available record. Therefore, the specified local pilot population of 655 pilots is likely slightly underrepresented.

Figure 12 – Local Pilot Population



Data Source: FAA Airmen Certification Database, usnaviguide, Esri

5.4.2 Existing Infrastructure Condition

The primary general aviation area at the Airport is located to the north of Runway 7-25 on the northwest side of the airfield. This area consists of approximately 33 facilities ranging from large maintenance and corporate aircraft storage hangars to semi-permanent sunshade hangar facilities. These structures also range in age from newly constructed to 20+ years in age. A visual inspection of the overall exterior condition of the general aviation infrastructure facilities revealed that the majority of structures are in good to excellent condition with only a few exceptions:

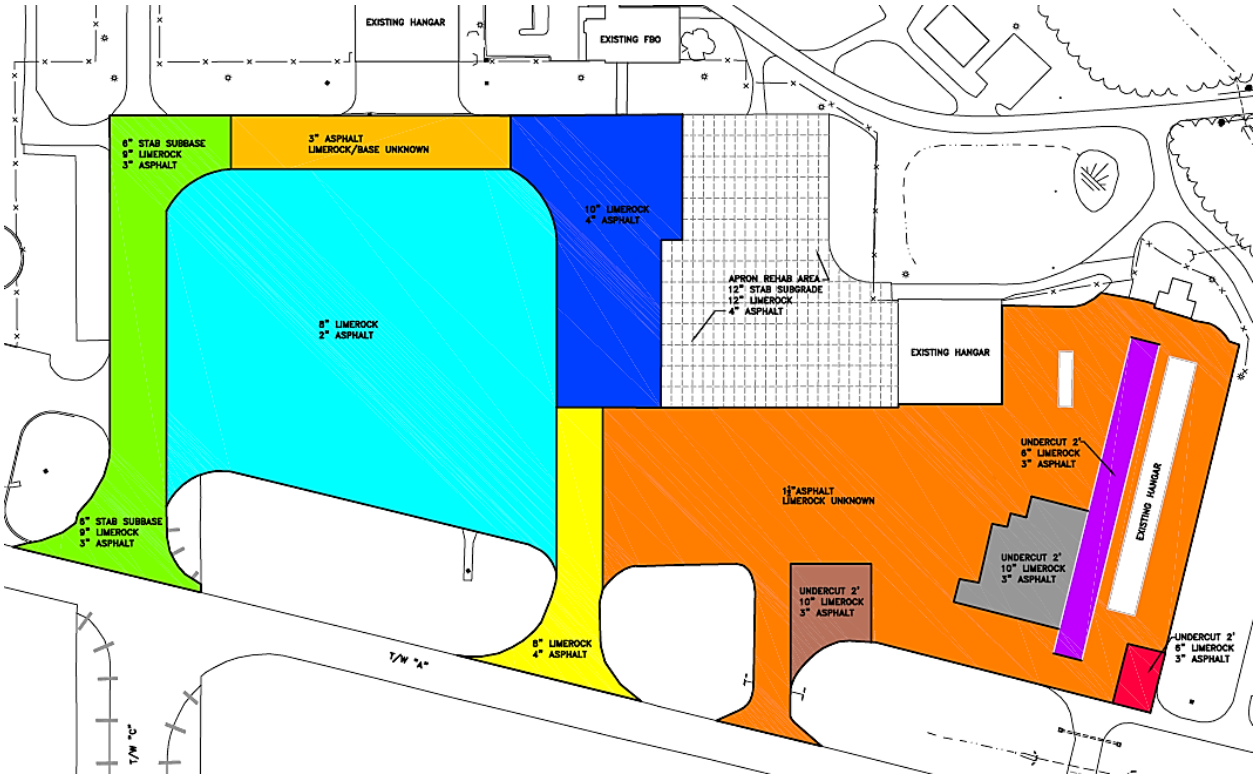
- Air Methods Hangar facility and nearby structures – Fair to Poor
- Standalone sunshade hangars near vehicle Gate 9 – Fair to Poor
- Aircraft Storage Hangar at NE 42nd TER/NE 48th AVE – Fair to Poor

5.4.2.1 GA Apron Pavement Condition

The primary General Aviation apron is located on the north-west side of the airfield approximately 700' from Runway 7-25. This area currently supports the numerous general aviation activities including the transient parking of business jets. However, for many years this area was the terminal apron for scheduled air serve at the Airport. Though this apron has accommodated large aircraft including 727-DC8, B757, and B767 Aircraft, several instances of pavement damage have occurred. Due to these instances, the Airport put into place a 90,000 DW limit. The potential for pavement damage increases during period of wet weather due to the high water table.

A 2009 survey of the GA apron revealed severely uneven pavement strengths in this area. Figure 13 illustrates the pavement features of the GA apron.

Figure 13 – GA Apron Pavement Thickness



Source: URS (2009)

Given these uneven pavement strengths, high groundwater issues, underlying clay soils, and continued demand for large aircraft parking, the GA apron requires strengthening.

5.4.2.2 Aircraft Parking Facilities

General aviation aircraft parking facilities at GNV consist of permanent hangars, semi-permanent sunshades and tie-down spaces. Table 7 presents the inventory of general aviation parking facilities at the Airport.

Table 7 – GA Aircraft Parking

T-Hangars					
Row	**Total Units**	**Door Width**	**Length**	**Door Height**	**Total Sq. Ft.**
A	10	39' 6"	32' 6"	11' 8"	975
D	17	41'	31'	12' 10"	963
F	10	40'	33' 9"	11' 10"	1046
I	8	53'	44'	16' 3"	1625
J	14	40'	33'	12' 8"	1008
K	12	47' 8"	38'	14'	1392
L	14	41' 8"	32'	12'	1050

Sunshade Hangars	
Type	**Units**
Sunshades	2
Hangar–Small	5
Hangar-Medium	2
Hangar Ground	1

Tie Down Spaces	
Type	**Number**
Small Aircraft	73
Medium/Large Aircraft	10

5.5 FUTURE LAND DEVELOPMENT

The ALP Report consists of two assessments of land use development.

Airport leadership has expressly identified the residual real estate as a means to an end to generate non-aeronautical revenues. These opportunities may be used to lower the Airport's cost per passenger, thereby attracting additional air service to the community and ultimately promoting new economic development. This first portion of the land use development exercise investigated reasonable market opportunities for the development of non-aeronautical revenue opportunities.

The second aspect of study was development of a concept plan for land west and south of the terminal. Much of the potential developable land at GNV is in this area. This is an area which has land that is both on the airport and off airport. The off airport property is the property of the Alachua County Fairgrounds. The idea behind consideration of a concept plan that includes property both on and off the airport is the putting together a large enough parcel of developable property that could be both attractive and competitive.

5.5.1 GNV Airport Property Market Opportunities

5.5.1.1 Portfolio Review

The Gainesville Regional Airport encompasses approximately 1,800 acres. In terms of net available land, two specific categories are identified:

- **Aeronautical Use** – Approximately 415 Acres

- **Non-Aeronautical Use** – Approximately 513 Acres

The land area of the airport is located wholly within the City of Gainesville. The zoning for Airport properties is AF, which is Airport Facilities and some Business Industrial. The airport currently has executed leases with aviation and aviation-related tenants, rental car agencies, government agencies, and one non-aviation, commercial tenant.

Figure 14 broadly illustrates both the aeronautical and non-aeronautical airport properties. The figure also includes insets for flood zones, environmentally sensitive areas including areas of environmental concern, and developed areas. The inset on Figure 14 that identifies environmentally sensitive areas also identifies the area on airport that, if developed, would be subject to remediation or capping.

Table 8 details the respective sizes of the airport properties. For the purposes of land development opportunities, only those designated as non-aeronautical were considered in the analysis. It is important to note that the presence and location of flood zones, wetlands and conservation lands on site significantly limits the total number of "developable" non-aeronautical acres available at GNV.

Table 8 – Airport Properties Data

Sub Area	Area	Area in Flood Zone	Wetland/ECA, or Conservation Area no in Flood Zone	Existing Developed Areas	Developable Area	% of Area Developable
Aeronautical Area (acres)						
A-1	189.00	29.05	67.00	0.00	96.50	51%
A-2	147.00	33.00	7.00	141.00	6.00	4%
A-3	11.00	0.00	2.60	0.00	8.40	76%
A-4	72.00	0.00	9.75	0.00	62.25	86%
A-5	125.00	0.00	24.00	0.00	101.00	81%
Non Aeronautical Area (acres)						
NA-1	127.00	0.00	27.50	5.00	94.50	74%
NA-2	330.00	76.00	58.00	154.00	75.75	23%
NA-3	163.00	26.00	61.00	51.00	44.67	27%
NA-4	57.00	0.50	3.50	0.00	53.00	93%
NA-5	38.00	0.00	3.00	0.00	35.00	92%

Source: Eng, Denman & Associates, Inc.

Figure 14 – Aeronautical and Non-Aeronautical Airport Properties

Gainesville Regional Airport
Developable Area Exhibit

Aeronautical Area (acres)						
Sub Area	Total Area	Area in Flood Zone	Area in Wetland, ECA, or Conservation Land	Existing Developed Area	Developable Area	% Total Area Available
A-1	189.00	29.50	67.00	0.00	96.50	51%
A-2	147.00	33.00	7.00	141.00	6.00	4%
A-3	11.00	0.00	2.60	0.00	8.40	76%
A-4	72.00	0.00	9.75	0.00	62.25	86%
A-5	125.00	0.00	24.00	0.00	101.00	81%

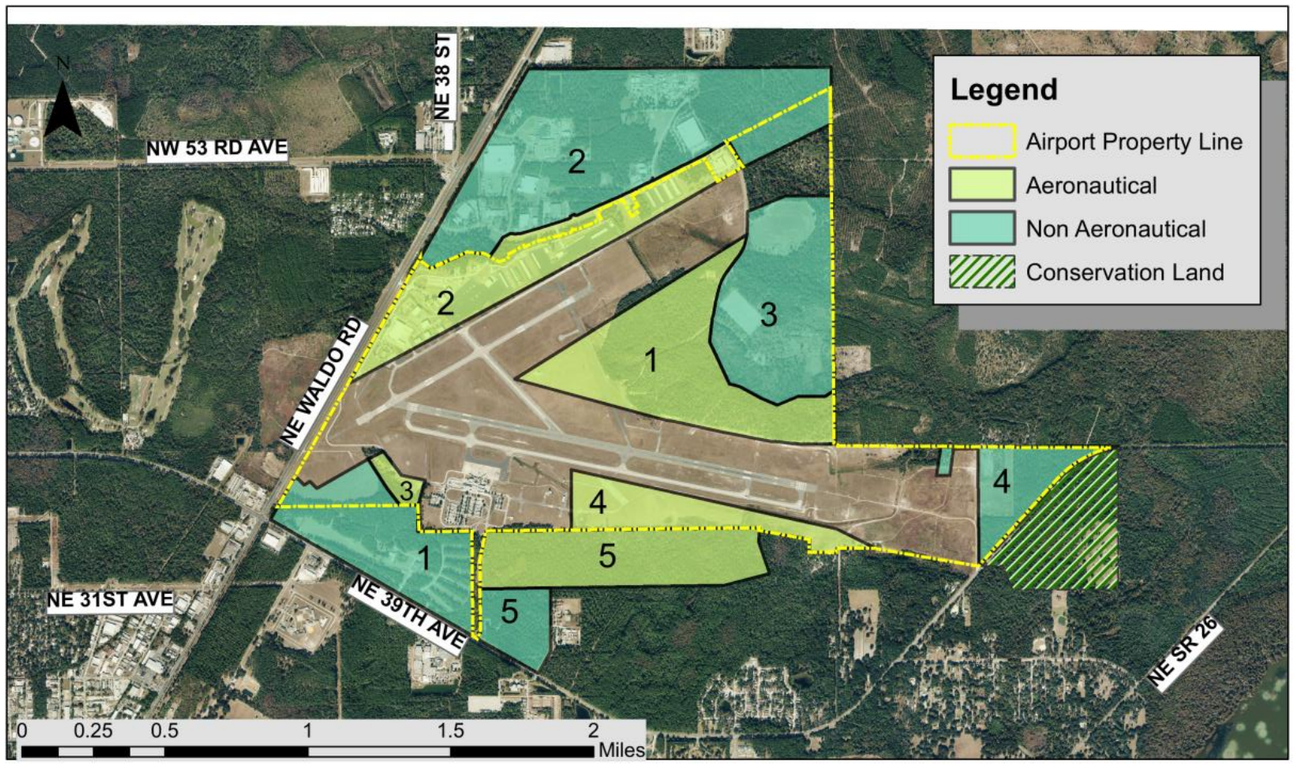
Non-Aeronautical Area (acres)						
Sub Area	Total Area	Area in Flood Zone	Area in Wetland, ECA, or Conservation Land	Developed Area	Developable Area	% Total Area Available
NA-1	127.00	0.00	27.50	5.00	94.50	74%
NA-2	330.00	76.00	58.00	154.00	75.75	23%
NA-3	163.00	26.00	61.00	51.00	44.67	27%
NA-4	57.00	0.50	3.50	0.00	53.00	93%
NA-5	38.00	0.00	3.00	0.00	35.00	92%

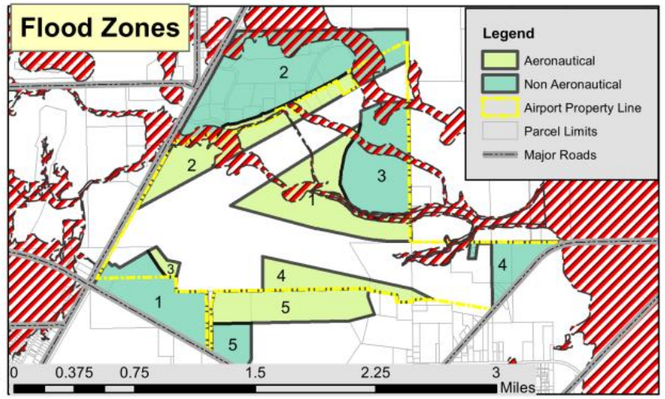
NOTES:

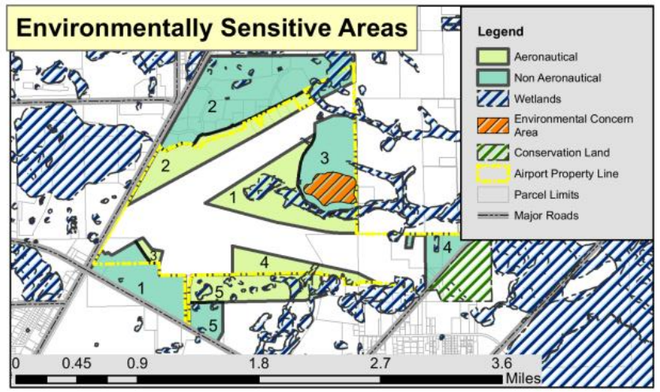
Land use areas are approximated and intended to provide a general allocation of developable area with each sub area.

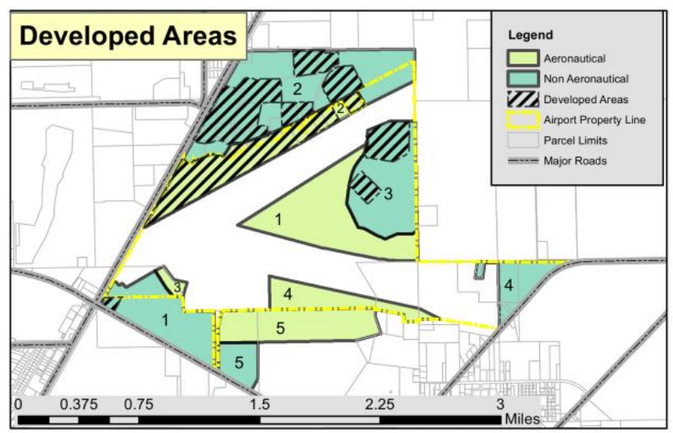
The wetland areas identified below do not include required wetland buffers per city code.

The developable area indentified below will be required to provide stormwater management facilities, which will reduce the net amount of acreage for physical development.









Source: Eng, Denman & Associates

For this analysis, the City's comprehensive neighborhood, and small area plans were reviewed considering the specific impact on GNV. Of note, the airport borders the City of Gainesville's Eastside community redevelopment area (CRA), one of the City's four CRAs. Existing land uses adjacent the GNV properties include open space (mainly forested), residential, warehouse/industrial, recreation, utilities and correctional facilities. Economic assets in the GNV vicinity include the Airport Industrial Park and the Alachua Resource and Recovery Park. Activity centers in the area proximate the airport include the Alachua County Fairgrounds to the immediate southwest of GNV and a nearby golf course and developing neighborhood to the west.

5.5.1.2 Market Observation

The next aspect of the investigation of land development opportunities was the analysis of potential uses within the existing market in Alachua County. These included existing office product, existing industrial, and flex product over 10,000 square feet; and existing retail products over 5,000 square feet. Table 9 summarizes the market observations from local in-market fieldwork as well as analytics conducted using proprietary real estate database subscriptions.

Table 9 – Market Observation Summary

Market Metrics	Use			
	Office	Industrial	Flex	Retail
Inventory (SF)	8,401,683	8,330,328	881,152	15,900,496
% of Total Inventory	25%	25%	3%	47%
Number of Buildings	919	647	58	1,408
Average Building Size	9,142	12,875	15,192	11,293
Average Age	39	34	24	40
Vacancy Rate	9%	11%	11%	6%
Vacancy Rate Trends	steady increase quarter over quarter during analysis period; currently at highest level	steady increase quarter over quarter during analysis period; near highest point currently	rate may be stabilizing but up significantly from levels seen earlier in analysis period	rate still relatively healthy even though levels have doubled over analysis period
Rental Rate	$13.00	$5.75	$6.50	$13.00
Rental Rate Trends	rates have steadily declined over analysis period; currently at lowest point since 4th QTR 2007	rates have stabilized with recent increases to levels higher than at beginning of analysis period	appear to be stabilized; however, rates at less than half of what they were at beginning of analysis period	appears to be largely stable for now; down from peaks seen earlier in analysis period
Total Net Absoption (over history)	10,633,006	(15,298)	(45,077)	14,443,657
Average Annual Net Absorption	2,126,601	(83,490)	(9,015)	2,888,731
Planned/Proposed/Under Construction (P/P/UC)	183,620 SF in 6 buildings	351,500 SF in 4 buildings	None	370,952 SF in 12 buildings
P/P/UC Observations	5 properties are <10,000 SF; other in Innovation Square	several located within industrial or commerce parks	N/A	includes 2 major shopping centers & number of smaller properties/outparcel

5.5.1.3 Concept Evaluation and Recommendation

Following the market observation, several specific development concepts were identified given its specific market requirements and/or relevant development characteristics. The specific development concepts include:

- Self-Storage Facility
- Utilities (solar)
- Light Industrial (incl. logistics and distribution centers)
- Hospitality (hotel)
- Education/Training Center
- Gas Station & Convenience Store

Each concept was evaluated for the GNV properties with the intent of leveraging market demand, client insights, and external opportunities and constraints as identified against key criteria as to whether the concept had a favorable, neutral or negative position. Those concepts rated as mostly favorable across the criteria were then further refined and researched to identify a strategy for implementation that included specific use(s), scale, and timing. Table 10 presents the evaluation concept matrix.

Table 10 – Development Concept Evaluation

DEVELOPMENT CONCEPT EVALUATION						
Development Concept	Required market characteristics	Market timing & Revenue yield potential	Scale of development	Target industry	Required airport investment	
Self Storage Facility	✓	✓	✓	×	✓	
Utilities (solar)	✓	✓	✓	✓	—	
Light Industrial (incl. logistics & distribution centers)	✓	—	✓	✓	—	
Hospitality Use (hotel)	×	—	—	×	×	
Training/Education Center	×	×	—	—	—	PRO ✓
Gas Station & Convenience Store	×	—	✓	×	×	CON ×
						NEUTRAL —

Source: C&S Companies

As indicated previously in the matrix, several of the potential uses were considered to be not as likely for potential development as others as a result of applying the criteria set. Of those development concepts presented in the evaluation matrix, the following uses have the greatest likelihood of economic viability at the scale and timeframes noted. These uses reflect research and market expertise employed to refine and further optimize the concepts originally tested for general feasibility. For the purposes of this analysis, timeframes are designated as near-term (years 1 – 5), mid-term (years 6 – 10) and long-term (years 11 – 20).

Table 11 – Recommended Land Development Uses

Recommended Uses by Scale and Timeframe				
Supported Uses	**Acres**	**Scale of Development**	**Timeframe**	**Suggested On-site Location**
Dedicated Storage Facility	5 – 7	30,000 – 40,000 SF	Near- to mid-term	NA-3: 2 parcels (totaling 7.6 acres) in SW portion of property
Utilities (Solar)	up to 25	NA	Near-term	Concrete pad on NA-4 &/or at or near terminal
Light Industrial	4 - 20	50,000 – 100,000 SF per building	Mid- to long-term	NA-3: 3 parcels (totaling 23.5 acres) in central portion of property
Acreage subtotal	9 – 52 acres			

Source: C&S Companies

In addition to the recommended uses, the following additional recommendations were made for consideration:

- Continue coordination with economic development representatives to leverage any available incentives and assistance and to be notified of any potential opportunities for light industrial or solar energy generation development leads.
- Focus efforts on public agency coordination to explore synergistic redevelopment of the Alachua County Fairgrounds as an airport complementary and/or affiliated development.
- Engage commercial brokerage community to broaden awareness of the available property.

5.5.2 Southwest Airport Property/Fairgrounds Concept Planning

The new airport access road to the terminal from Waldo Road opens up the west side of the airport. At the same time, there is developable property south of the airport boundary line north of 39th Street, generally referred to as the old Fairgrounds. Overall, the developable property on airport and off airport represents approximately 143 acres. This represents a sizeable and attractive land parcel located at a high profile location in northeast Gainesville.

Planners from the City and County met with Airport Staff and the Consultant to discuss concept plan options for a potential layout scheme. Figure 15 provides the land development concept plan that was identified during the meeting and indicates the conceptual development master plan along with locations of existing utilities and proposed future infrastructure improvements.
.
As part of the ALP Report, RS&H Team member Eng, Denman & Associates, Inc. developed a concept plan for a 40 acre portion of airport property formerly west of the Airport Terminal known as the 'horse show grounds.' This property is bisected by the new passenger terminal entrance road with tracts of land on each side of the road that potentially could be used for non-aeronautical development. The analysis also includes the approximately 103 acre tract of land owned by Alachua County located immediately to the south, which is presently the home of the County Fairgrounds.

Based on a preliminary engineering analysis and through coordination with Gainesville Regional Utilities (GRU), Figure 15 includes the top three priorities for future water/sewer/electric extensions

to adequately provide the major utility infrastructure to serve future development area within the study area. These three priority improvements, as identified on the attached exhibits and include, in order of priority:

- Priority 1: Loop the water main from Waldo Road to the Main Terminal. The estimated cost is approximately $350,000. This loop system (constructed entirely on airport property) will provide the necessary core infrastructure to serve entire study area, including both the airport and county properties in the study area. This will improve pressure and flow at the main terminal and will allow continuous service if the existing water main presents any problems and/or requires maintenance.

- Priority 2: Loop electric from Waldo Road to the Main Terminal. Coordination with Gainesville Regional Utilities which provided a cost estimate of $165,000. Improvements associated with this project will also occur entirely on airport property but will provide the core infrastructure to serve both the airport and county properties in the study area. This looped system will provide improved service reliability over the existing radial connection.

- Priority 3: Provide gravity sewer from NE 39th Avenue to the northernmost point of future development area (5.2 acres of aeronautical development area). The estimated cost is approximately $800,000. As indicated on the infrastructure exhibit, this extension would include extensive improvements outside of the airport property, including a potential crossing underneath NE 39th Avenue and an extension within the right of way approximately 800 linear feet and across the county property approximately 1,200 linear feet.

Please note that these cost estimates include the entire length (and total cost) of the utility extensions, not just a proportionate share for the airport. It should be noted, however, that these utility improvements are necessary in order to support future development on both the airport and county properties and therefore, future opportunities may exist for a cost sharing arrangement between the two property owners.

The action anticipated from the development of this plan is an awareness of all parties of the potential for this property to be developed and the existence of a concept plan for development which can be discussed with city and county officials as well as possible developers.

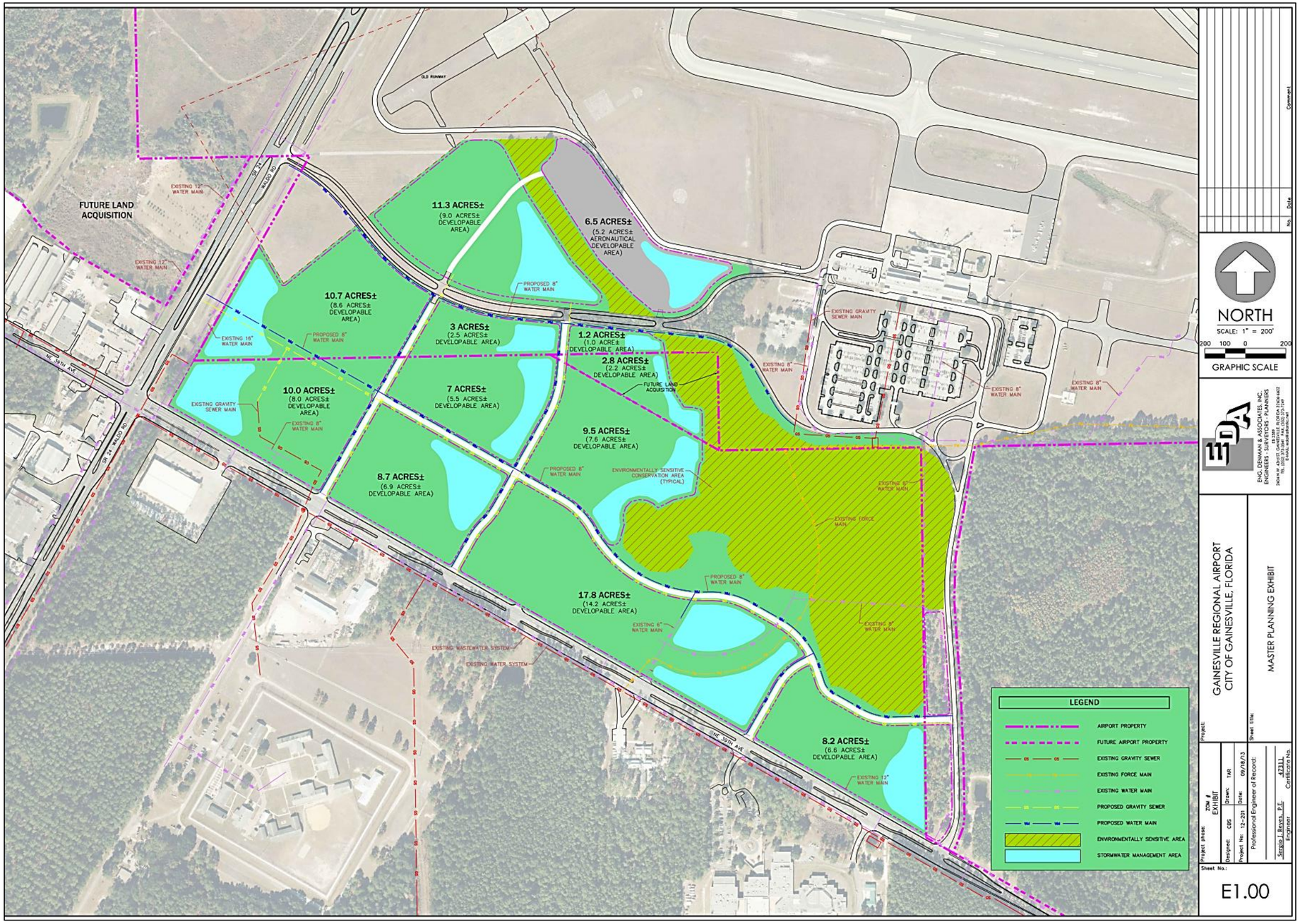
5.6 SPECIAL ISSUES

Special Issues encompasses the rationale for unusual design features and/or modification to FAA Airport Design Standards. There are no unusual design features or modification to standards (MOS) associated with the 2013 ALP Update Study.

GNV does not consider the use of declared distances for Runway 11-29 or Runway 7-25 in the existing or future conditions.

In addition, GNV does not have an Action Items to address from the FAA Runway Safety Program Office.

Figure 15 – Aeronautical and Non-Aeronautical Airport Properties



CHAPTER 6
FUTURE TERMINAL EXPANSION

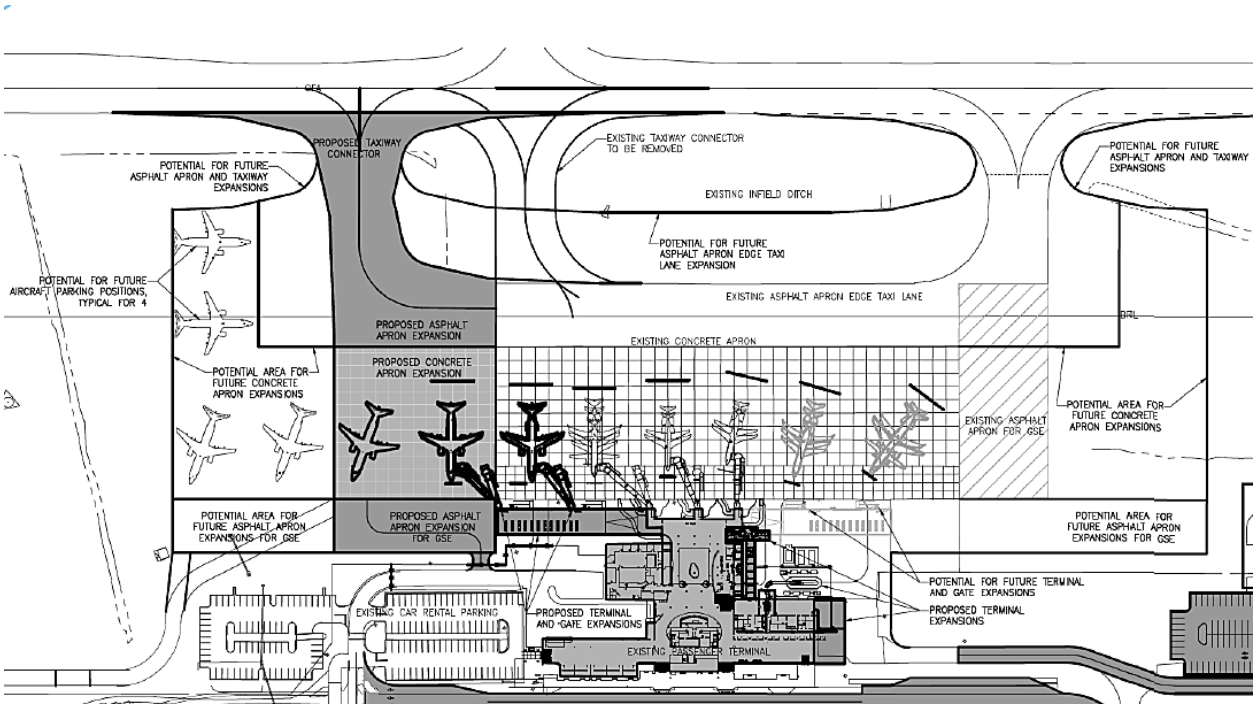
Separate to the ALP Update Study, the Airport embarked on a terminal concept study to assess the feasibility of expanding, renovating and/or modifying the existing terminal complex. This process included the consideration of current and future TSA/AIP directives, airport operational needs, projected costs and construction duration/phasing considerations.

The study included an extensive existing facility condition analysis that documents and evaluates the architectural, structural, mechanical, electrical and site/civil components comprising the facility. This analysis identified the age, condition, remaining useful life and replacement costs associated with the respective materials, equipment and/or systems.

The study also included the verification of the anticipated Level of Service (LOS) needed to accommodate current and future passenger forecasts in conjunction with the defined funding availabilities/strategies.

The terminal study is incorporated by reference in this report[1] and graphic depictions of the concept from have been incorporated in the Airport Layout Plan sheets. Figure 16 below presents the proposed terminal site plan including apron expansion and taxiway re-alignment shown on the ALP.

Figure 16 – Proposed Terminal Site Plan



[1] Terminal Conceptual Development Plan, Gainesville Regional Airport, Reynolds, Smith & Hills, Inc., August 28, 2013.

The goal and intent of the Terminal Concept Study was to analyze the feasibility of expanding, renovating and/or modifying the existing terminal complex relative to current and future TSA directives, airport operational needs, projected costs and construction duration/phasing considerations.

The study included extensive facility condition analysis that documented and evaluated the architectural, structural, mechanical, electrical and site/civil components comprising the facility. This analysis identified the age, condition, remaining useful life and replacement costs associated with the respective materials, equipment and/or systems.

The study also include verification of the anticipated Level of Service (LOS) needed to accommodate current and future passenger forecasts in conjunction with the defined funding availabilities/strategies.

In terms of aircraft parking apron, the study identifies the critical need to consider apron expansion for aircraft parking, Remain Overnight (RON), as well as Irregular Operations (IROP).

CHAPTER 7
DEVELOPMENT SCHEDULE

Chapter 7 provides the projects that have been derived from the update of the Airport Layout Plan (ALP) sheets in accordance with FAA Advisory Circular 150/5300-13A as well as special studies described within this report.

In addition, this chapter incorporates the current GNV Airport Capital Improvement Program (CIP). Projects identified in the CIP constitute immediate needs or Phase I projects. For purposes of this ALP Report, projects that have been identified are categorized in three time periods over a 20-year period: 2013-2032:

- Phase I – CIP Projects (2013-2020). This incorporates the new CIP prepared by GNV in January 2014;
- Phase II (2021-2025). These are projects identified by the update of the ALP sheets for which there is an anticipated need within an intermediate phase; and,
- Phase III (2026-2032). These are projects also identified by update of the ALP sheets for which there may become a need over the course of the long-term.

Table 12 is a listing of Phase I projects. For projects identified by updating of the ALP, a brief descriptor is provided. Projects anticipated in the intermediate or long-term phases are broken down into general categories:

- Terminal Area Improvements: terminal building, terminal apron, curbside, and parking;
- Runway Improvements;
- Taxiway Improvements;
- General Aviation Apron Improvements;
- Airport Support Facilities: includes facilities or equipment, e.g., ATCT, ARFF;
- Airport Roadway Improvements (other than terminal parking);
- Site preparation for future building improvements (other than airport terminal).

No cost estimates are provided for future building improvements. For such structures as hangars or air cargo facilities, it is not known how the project might be financed whether private or a public/private venture. A trigger is given for each project identified during the ALP Report Update process.

At this time, the only planned future change in approach procedures is the installation of a CAT I instrument land system for Runway 25 at the time the runway is extended beyond 5,000-feet. No other navigational or equipment needs are foreseen. At the time both the threshold of Runway 7 is moved to the northeast or either one of the runways is extended, there will be the need to relocate//install runway lights. In addition, at the time of the runway decoupling project, runway extensions, or realignment of taxiway Hot Spots, taxiway lights for the associated portions of runways and the realigned taxiways will need to be relocated/extended.

7.1 PHASE I – CIP PROJECTS (2013-2020)

As mentioned above, brief project descriptors will be provided for projects identified during the update of the ALP sheets. Phase I has been identified as CIP projects developed by the GACRAA.

High priority CIP projects include terminal expansion (gates, TSA/Security/in-line Explosive Detection System (EDS, baggage make-up, and parking lot expansion within the existing land envelope.

There are five CIP projects in Phase I that were added as a result of this ALP Update Report study: three airport pavement strengthening projects, one site development project for future hangars, and an estimated cost for a focused Environmental Assessment that would be required in advance of construction of a new ATCT.

- General Aviation Apron Expansion. Project would fill-in sections of infield between apron edge and Taxiway 'A" in the vicinity of University Air Center. Estimated cost is $475,000.
- General Aviation Pavement Strengthening. Project would rehabilitate general aviation apron tie-down area. Estimated cost is $875,000.
- General Aviation Apron Strengthening. Project is apron west of general aviation tie-down area. Estimated cost is $1,075,000.
- Focused Environmental Assessment. Project would prepare environmental clearance documentation for construction of a new ATCT/ARFF. Estimated cost is $130,000.

7.2 PHASE II – INTERMEDIATE PROJECTS (2021-2025)

Phase II projects are those that were developed as part of the ALP update for which there is a need but not able to be funded until after 2020. Depending upon changing conditions and priorities, some of these projects may be moved up in subsequent years or delayed until Phase III (See Figure 17).

These projects are:

- **Terminal Area Improvements**
    - Terminal Apron Expansion, Phase 2A. Project would expand adjacent terminal apron to the west by approximately 250 feet and 80 feet to the south or 14,250 square yards. Estimated cost is $1,375,000. Triggering event is an additional aircraft at gate during the peak hour.

    - Terminal Apron Expansion, Phase 2B. Project would expand terminal adjacent to the terminal apron to the east of the terminal by approximately 250-feet to the east, 80 feet to the south and 100 feet to the north (27,100 square yards). Estimated cost is $2,400,000. Triggering events are future upgrades in aircraft fleet, an additional aircraft during peak hour, or a modification of the airport terminal.

- **Runway Improvements**

    - Runway Decoupling Project. Project would eliminate FAA Hot Spot by relocating the threshold of Runway 7 by 1,000 feet to the northeast. Project includes removal of existing pavement of Taxiway 'A" and the 1,000-feet of Runway 7 as well as the construction of three connector taxiways. These taxiways would be constructed in conformance with AC 150/5300-13A such that taxiway pavements intersect with runways at right angles. One portion of pavement would connect Taxiway 'A' with the threshold of Runway 7, another would connect Runway 7 threshold with Runway 11, and the last section would connect Runway 11 with Taxiway 'E. These taxiways provide a route from the general aviation area to the terminal area. Estimated cost is

$2,375,000. Triggering event is the FAA's priority and funding availability for addressing this Hot Spot.

- **Taxiway Improvements**
  - Run-Up Pad/Holding Bay. This project would construct a new run-up pad and holding bay east of the taxiway connector between Taxiway 'A' and the threshold to Runway 7. The project includes demolition of two existing non-standard run-up pads, one at the southeast end of Taxiway 'A' and the other located north of the threshold of existing Runway 25 between the threshold and Taxiway 'A'. In addition, non-standard taxiway connector 'A-1" will be removed in conformance with AC 150/5300-15A. Estimated cost is $300,000. As a needed project now, triggering event is addition of this project to the CIP list, pending funding availability.

- **Airport Roadway Improvements**
  - Bypass Road to ATCT East of Terminal Complex. Project would construct a new access road from approximately the midpoint of the current airport access road to the east and curve north intersecting with the east airport access road in the vicinity of the ATCT. Most of this new road would be constructed on property yet to be controlled by the airport southeast of the airport terminal. Estimated cost is $625,000. Triggering event would be gaining control of the land on which much of this roadway would be developed.
  - Parking lot for Building 27 (University Air Center). Project would construct expanded parking lot. Estimated cost is $225,000. Triggering event would be future facility expansion.

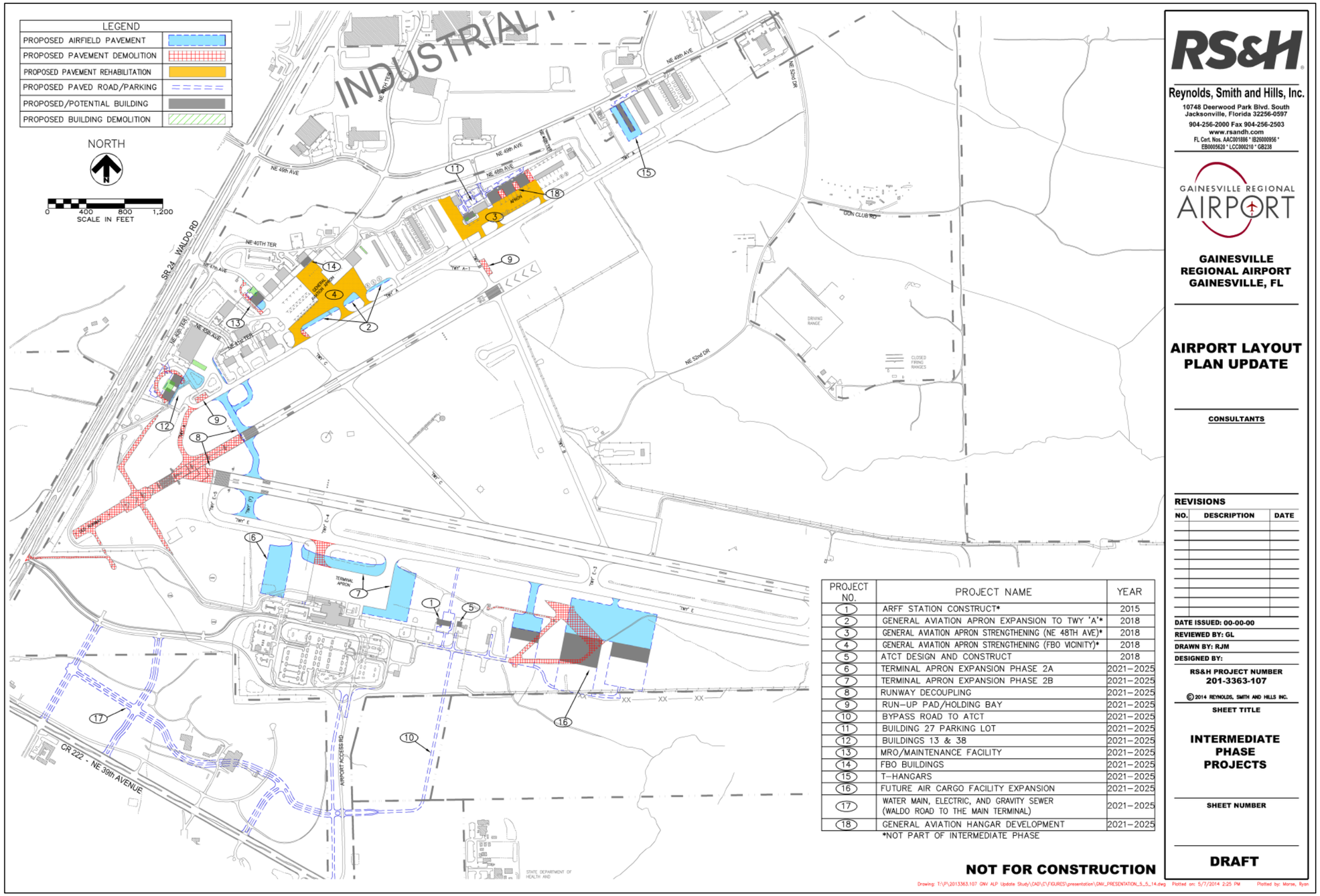
- **Site Preparation for Future Building Improvements**
  - Building #13 (Flight Service Station) and Building #38 (Silver Airways) site. Project would prepare site for future building expansion at the southwest end of the general aviation area. Project includes apron and taxiway expansion, parking lot, and construction of significant underground water retention improvements. Estimated cost is $1,650,000. Triggering event is availability of funding.
  - Maintenance, Repair, and Overhaul (MRO)/Maintenance Facility site. Project would develop adjacent site at Northeast 45th Avenue for future expansion. Project includes site preparation in the vicinity of the existing ARFF structure/parking lot and construction of underground water retention improvements. Estimated cost is $400,000. Triggering event is the availability of funding.
  - FBO Building site. Project would prepare FBO area for future site expansion. Project includes demolition of existing structures, and parking lot construction. Estimated cost is $175,000. Triggering event is accommodation of future demand.
  - T-Hangar site. Project located at northeast end of general aviation area. Project would construct parking lot, taxiway connector and approximately 5,300 square yards of apron expansion. Estimated cost is $750,000. Triggering event is accommodation of future demand.
  - Future Air Cargo Facility Expansion Site. Project includes construction of approximately 46,000 square yards of air cargo apron, vehicular parking lots for future buildings, extension of vehicular access road, and construction of security fencing. Estimated cost is $6,650,000. Triggering event is accommodation of future demand.
  - West Side Land Development Infrastructure. These three projects are derived from the concept development plan for non-aeronautical development west of the terminal. This area includes property both on airport and off airport (Fairgrounds property). Note that these cost estimates include the entire length (and total cost) of the utility

extensions, not just a proportionate share for the airport. It should be noted, however, that these utility improvements are necessary in order to support future development on both the airport and county properties and therefore, future opportunities may exist for a cost sharing arrangement between the two property owners.

- Priority 1: Loop the water main from Waldo Road to the Main Terminal. The estimated cost is approximately $350,000. This loop system (constructed entirely on airport property) will provide the necessary core infrastructure to serve entire study area, including both the airport and county properties in the study area. This will improve pressure and flow at the main terminal and will allow continuous service if the existing water main presents any problems and/or requires maintenance. Triggering event is City/County agreement to pursue property development in this area and availability of funds.
- Priority 2: Loop electric from Waldo Road to the Main Terminal. Loop electric from Waldo Road to the Main Terminal. Coordination with Gainesville Regional Utilities which provided a cost estimate of $165,000. Improvements associated with project will also occur entirely on airport property but will provide the core infrastructure to serve both the airport and county properties in the study area. This looped system will provide improved service reliability over the existing radial connection. This looped system will provide improved service reliability over the existing radial connection for the commercial terminal, security infrastructure, and potentially airfield lighting. Triggering event is City/County agreement to pursue property development in this area and availability of funds.
- Priority 3: Provide gravity sewer from NE 39th Avenue to the northernmost point of future development area (5.2 acres of aeronautical development area). The estimated cost is approximately $800,000. As indicated on the infrastructure exhibit, this extension would include extensive improvements outside of the airport property, including a potential crossing underneath NE 39th Avenue and an extension within the right of way approximately 800 linear feet and across the county property approximately 1,200 linear feet. Triggering event is City/County agreement to pursue property development in this area and availability of funds.

- Master Plan Update. This project would update the 2006 Airport Master Plan and this 2014 ALP Update Report. Estimate cost is $550,000. The triggering event is the need to update planning documents and the availability of funding.

Figure 17 – Intermediate Phase Projects



PROJECT NO.	PROJECT NAME	YEAR
1	ARFF STATION CONSTRUCT*	2015
2	GENERAL AVIATION APRON EXPANSION TO TWY 'A'*	2018
3	GENERAL AVIATION APRON STRENGTHENING (NE 48TH AVE)*	2018
4	GENERAL AVIATION APRON STRENGTHENING (FBO VICINITY)*	2018
5	ATCT DESIGN AND CONSTRUCT	2018
6	TERMINAL APRON EXPANSION PHASE 2A	2021–2025
7	TERMINAL APRON EXPANSION PHASE 2B	2021–2025
8	RUNWAY DECOUPLING	2021–2025
9	RUN-UP PAD/HOLDING BAY	2021–2025
10	BYPASS ROAD TO ATCT	2021–2025
11	BUILDING 27 PARKING LOT	2021–2025
12	BUILDINGS 13 & 38	2021–2025
13	MRO/MAINTENANCE FACILITY	2021–2025
14	FBO BUILDINGS	2021–2025
15	T-HANGARS	2021–2025
16	FUTURE AIR CARGO FACILITY EXPANSION	2021–2025
17	WATER MAIN, ELECTRIC, AND GRAVITY SEWER (WALDO ROAD TO THE MAIN TERMINAL)	2021–2025
18	GENERAL AVIATION HANGAR DEVELOPMENT	2021–2025

*NOT PART OF INTERMEDIATE PHASE

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\FIGURES\presentation\GNV_PRESENTATION_5_5_14.dwg Plotted on: 5/7/2014 2:25 PM Plotted by: Morse, Ryan

RS&H
Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

INTERMEDIATE PHASE PROJECTS

SHEET NUMBER

DRAFT

7.3 PHASE III – LONG-TERM PROJECTS (2026-2032)

Phase III projects are those that were developed as part of the ALP update for which there has not been identified an immediate or those for which justification is anticipated in the long-term. Like Phase II projects, depending upon changing conditions and priorities, some of these projects may be moved up in subsequent years (See Figure 18).

These projects are:

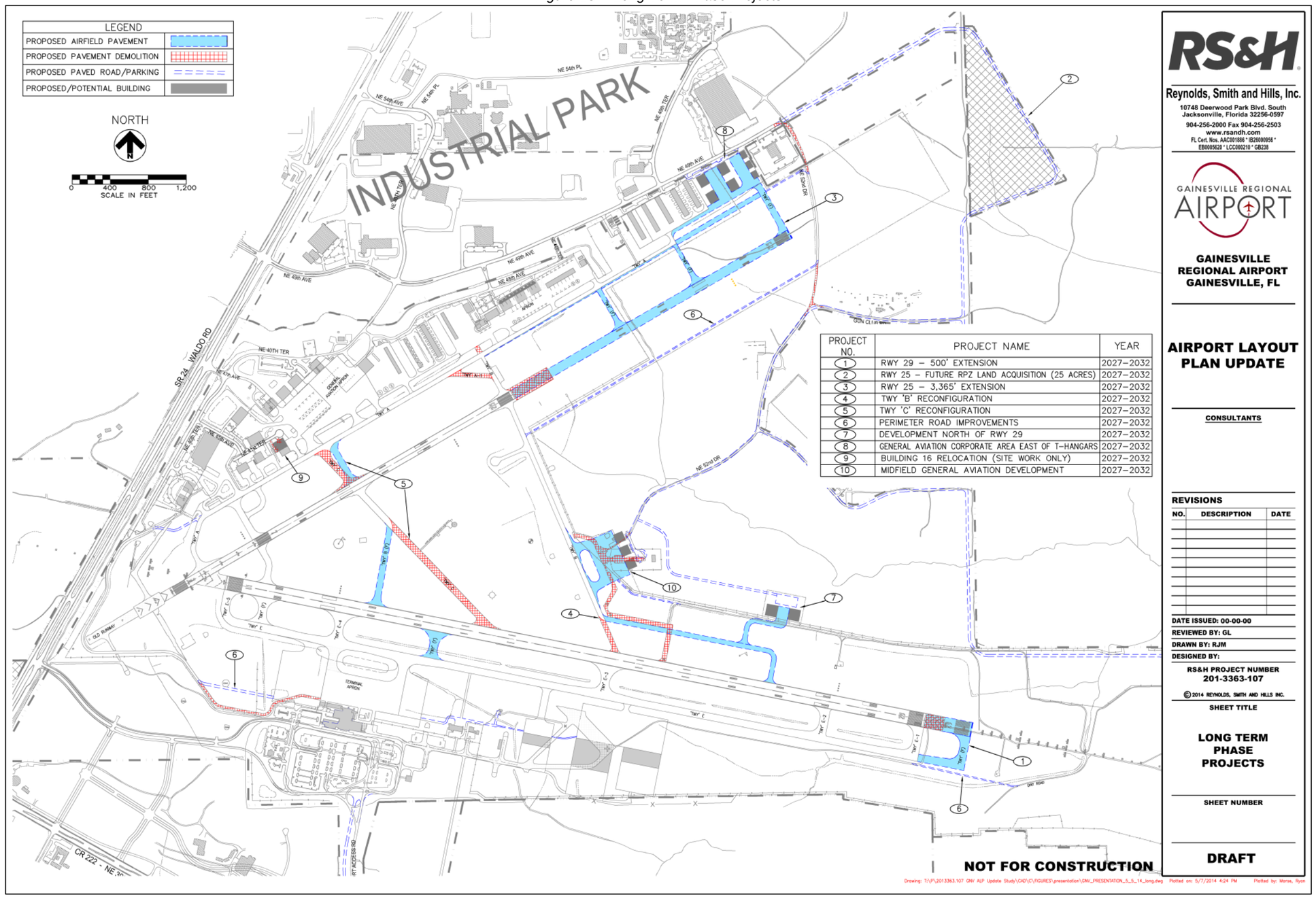
- **Runway Improvements**
  - Runway 29 extension to 8,000-feet. Project would extend Runway 29 by 500 feet and includes a 500-foot extension of Taxiway 'E'. Estimated cost is $4,870,000. Triggering event is 500 annual operations by aircraft whose takeoff characteristics exceed the ability to be accommodated by 7,500-feet.
  - Land Acquisition for Runway 25 Precision Approach Runway Protection Zone. Project would acquire approximately 21 acres northeast of the airport property. This property would complete the 66 acres needed to provide the Precision Instrument Runway Protection Zone for the future extension of Runway 25 to 6,500-feet. Estimated cost is approximately $100,000. The 21-acres are part of a 309 acre property that has an assessed value of $326,000 in 2013, or about $1,055/acre. However, for purposes of this exercise, it is assumed that the 21-acres, which exist at the edge of the property, could potentially be negotiated and purchased without needing to acquire the entire property. It is also anticipated that a higher average cost per acre will be negotiated. The estimated costs include appraisal and legal fees. Triggering event is beginning of the process to extend Runway 7-25 to a length greater than 5,000-feet and planning for a future CAT I approach for Runway 25.
  - Runway 25 extension to 6,500-feet. Project would extend Runway 25 by 3,365-feet. This includes recouping of the 1,000 feet from the movement of the Runway 7 threshold to the northeast. The project also includes Taxiway 'A' widening and extension to the new runway end. Estimated Cost is $7,300,000. Triggering event is 500 annual operations by aircraft whose takeoff characteristics require 6,500-feet and the availability of state and local funds. Currently, this project is not FAA eligible.

- **Taxiway Improvements**
  - Taxiway 'B' reconfiguration. As a result of an FAA Hot Spot, this project reconfigures the south end of Taxiway 'B' in conformance with AC 150/5300-13A. The current intersection of Taxiway 'B' with Runway 11/29 is within the middle third of the runway which is no longer permitted according to recent FAA guidance. The southern portion of Taxiway 'B' will be reconstructed to be parallel to Runway 11/29 and intersect outside the middle one-third of the runway. Estimated cost is $1,575,000. Triggering event is the FAA's priority and funding availability for addressing this Hot Spot.
  - Taxiway 'C" reconfiguration. As a result of an FAA Hot Spot, this project reconfigures Taxiway 'C' to conform to AC 150/5300-13A. Currently, Taxiway 'C' intersects with both Runway 11/29 and Runway 7/25 at other than a right angle. In addition, the taxiway intersects with the runway in the middle third of the runway which is no longer permitted according to recent FAA guidance. This project would be constructed in two pieces, one on the north at Runway 7/25 to Taxiway 'A' and the other on the south at Runway 11/29 to Taxiway 'E'. Estimated cost is $1,700,000. Triggering event is the FAA's priority and funding availability for addressing this Hot Spot.
- **Perimeter Road Improvements.** This project would complete a perimeter road in areas where it does not exist, including around extended Runway 7-25. In accordance with updated

guidance from the FAA, the perimeter road for extended Runway 7-25 will border the RPZ but not be located within it. The extended perimeter road will be paved and drained and include security fence relocation. Estimated cost is $775,000. Triggering event is the future extensions of Runway 29 and Runway 25.

- **Site Preparation for Building Improvements**
  - General Aviation Development north of Runway 29. This project would prepare a site for future general aviation expansion north of Runway 29 and to the east of the future midfield development. This area occupies one of the few areas to the northwest of Runway 29 that is not a wetland area. It would be located adjacent to the new parallel portion of reconfigured Taxiway 'B'. Estimated cost is $1,175,000. Triggering event is the accommodation of future demand.
  - General Aviation Corporate area east of T-Hangars. The project would develop a site for future corporate box hangars at the northeast end of the general aviation area. Estimated cost is $2,075,000. Triggering event is the accommodation of future demand.
  - Building 16 Relocation site (University of Florida Hangar). Once a Precision Instrument Approach is commission for Runway 7-25, the geometry associated with the width of the runway safety area is widened. As a result, the building restriction line (BRL), i.e., the closest point where structures can be constructed peripheral to the runway, becomes 745-feet from the centerline of the runway. As a consequence, a portion of Building 16 penetrates the new BRL. The project would relocate the hangar. Estimated replacement cost for a hangar of this magnitude is about $125 per square foot or approximately $1,625,000. Triggering event is the future commissioning of a Precision Instrument Approach for Runway 7-25.
  - Midfield General Aviation Development site. This project would redevelop the area between the runways and adjacent Taxiway 'B' as a future area for general aviation development. The project includes pavement demolition, new apron construction (approximately 21,000 square yards), parking lot, security fencing, and access road to the site from the east side of the airport. This new roadway access from north airfield would be constructed bordering and beyond the future RPZ for extended Runway 7-25 and back west to the general aviation development site. Estimated cost is $3,925,000. Triggering event is the accommodation of future demand.

Figure 18 – Long Term Phase Projects



PROJECT NO.	PROJECT NAME	YEAR
1	RWY 29 – 500' EXTENSION	2027–2032
2	RWY 25 – FUTURE RPZ LAND ACQUISITION (25 ACRES)	2027–2032
3	RWY 25 – 3,365' EXTENSION	2027–2032
4	TWY 'B' RECONFIGURATION	2027–2032
5	TWY 'C' RECONFIGURATION	2027–2032
6	PERIMETER ROAD IMPROVEMENTS	2027–2032
7	DEVELOPMENT NORTH OF RWY 29	2027–2032
8	GENERAL AVIATION CORPORATE AREA EAST OF T-HANGARS	2027–2032
9	BUILDING 16 RELOCATION (SITE WORK ONLY)	2027–2032
10	MIDFIELD GENERAL AVIATION DEVELOPMENT	2027–2032

RS&H
Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001856 * IB26000956 *
EB0005520 * LCC000210 * GB228

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

LONG TERM PHASE PROJECTS

SHEET NUMBER

DRAFT

NOT FOR CONSTRUCTION

Drawing: T:\P\201.3363.107 GNV ALP Update Study\CAD\C\FIGURES\presentation\GNV_PRESENTATION_5_5_14_long.dwg Plotted on: 5/7/2014 4:24 PM Plotted by: Morse, Ryan

7.4 SUMMARY

Tables 12, 13 and 14 on the following pages provide a list of projects that may be considered at the Gainesville Regional Airport over the next 20 years.

The estimate cost for the program is $97.7 million of which $47.3 million (48.4%) is CIP projects, $25.2 million (25.8%) is intermediate projects, and $25.1 million (25.7%) is long-term projects.

The program is anticipated to be funded largely by grants from the Federal Aviation Administration. Approximately 75.2% ($73.4 million) is anticipated to be from FAA grant funds, 13.9% ($13.6 million) from the Florida Department of Transportation, and 10.9% ($10.7 million) from the Gainesville/Alachua County Regional Airport Authority.

Table 12 – Phase I CIP Projects (2013-2020)

Project	Year	FAA Portion	State Portion	Local/Other Portion	Total	Source of Cost Estimate
2013						
General Aviation Terminal	2013	--	$195,000	$195,000	$390,000	Grant Award
Modification of Existing Buildings to Accommodate Aircraft Maintenance Facility and Equipment Maintenance Facility	2013	--	$22,500	$22,500	$45,000	Grant Award
Runway Safety Area Mowers	2013	--	$11,000	$12,861	$23,861	Grant Award
Taxiway E Pavement and Lighting Rehabilitation	2013	$4,277,876	$237,660	$237,660	$4,753,196	Grant Awards
Terminal Expansion Study	2013	--	$112,196	$7,000	$119,196	Grant Award
Subtotal 2013		**$4,277,876**	**$578,356**	**$475,021**	**$5,331,253**	
2014						
Ticket Counter Renovation	2014			$350,000	$350,000	PFC 3 Budget
Terminal Restroom Renovation/Expansion	2014			$200,000	$200,000	2012 CIP Estimate. PFC 3 Budget
Commercial Apron Expansion Design Only	2014	$158,099	$8,783	$8,783	$175,665	Bid
Rehabilitate Commercial Terminal Entrance Loop Road	2014	$804,658	$0	$89,406	$894,064	Bid
Preliminary Design to Rehab Airfield Drainage System	2014	$78,748	$4,375	$4,375	$87,498	Bid
Parking Lot Improvements - Phase I – Technology	2014	--	$107,000	$107,000	$214,000	Grant Award
Runway 7/25 Rehabilitation	2014	--	$3,472,000	--	$3,472,000	CIP Estimate
Subtotal 2014		**$1,041,505**	**$3,592,158**	**$759,564**	**$5,393,227**	
2015						
Commercial Apron Expansion Construction	2015	$2,070,000	$115,000	$115,000	$2,300,000	CIP Estimate
ARFF Station Design	2015	$135,000	$7,500	$7,500	$150,000	CIP Estimate
Focused Environmental Assessment ATCT and ARFF	2015	$117,000	$6,500	$6,500	$130,000	
Rehabilitate Runway 11-29 Edge Lights and Signs	2015	$585,000	$32,500	32500	$650,000	CIP Estimate
Parking Lot - Phase 2 - Technology	2015	--	$215,000	$215,000	$430,000	CIP Estimate
Subtotal 2015		**$2,907,000**	**$376,500**	**$376,500**	**$3,660,000**	

Project	Year	FAA Portion	State Portion	Local/Other Portion	Total	Source of Cost Estimate
2016						
Terminal Roof Resurface	2016	$796,500	$44,250	$44,250	$885,000	CIP Estimate
Taxiway A Drainage Improvements	2016	$1,644,992	$91,388	$91,388	$1,827,768	CIP Estimate
ARFF Station Construction	2016	$1,980,000	$110,000	$110,000	$2,200,000	CIP Estimate
Resurface WWII Hangar Roof	2016	--	$50,000	$50,000	$100,000	CIP Estimate
General aviation Access Road Rehabilitation	2016	--	$112,500	$112,500	$225,000	CIP Estimate
Parking Lot Expansion Phase 1	2016		$175,000	$175,000	$350,000	CIP Estimate
Terminal Expansion (Full Design and Bid Packages)	2016	$783,000		$87,000	$870,000	PFC 4?
Safety Management System	2016	$135,000	$7,500	$7,500	$150,000	CIP Estimate
Tractor and Mowing Attachments #2(Right of Way Mowers)	2016	--	$40,000	$40,000	$80,000	CIP Estimate
Subtotal 2016		**$5,339,492**	**$630,638**	**$717,638**	**$6,687,768**	
2017						
West Concourse Expansion	2017	$3,510,000	$195,000	$195,000	$3,900,000	2012 CIP Estimate
ARFF Personnel Protective and Rescue Equipment	2017	$45,000	$2,500	$2,500	$50,000	CIP Estimate
Acquire Index C Fire Fighting Vehicle	2017	$810,000	$90,000	$90,000	$990,000	CIP Estimate
Parking Lot Pavement Rehabilitation	2017		$350,000	$350,000	$700,000	
Crack Sealing Machine – Acquire	2017	--	$45,000	$45,000	$90,000	CIP Estimate
Subtotal 2017		**$4,365,000**	**$682,500**	**$682,500**	**$5,730,000**	
2018						
Airfield PAPI light and Beacon Replacement	2018	$158,850	$8,825	$8,825	$176,500	CIP Estimate
ATCT, Design and Construct	2018	$3,600,000	$200,000	$200,000	$4,000,000	CIP Estimate
Acquire Mobile Bird Deterrent System	2018	$49,500	$2,750	$2,750	$55,000	CIP Estimate
Wildlife Hazard Assessment (Field Study Update)	2018	$27,000	$1,500	$1,500	$30,000	Based on Former Study
Passenger Boarding Bridge Rehabilitation	2018	$315,000	$17,500	$17,500	$350,000	CIP Estimate
Construct Bulk Aircraft Storage Hangar	2018	--	$485,000	$485,000	$970,000	CIP Estimate
TSA Passenger Screening Expansion	2018	$720,000	$40,000	$40,000	$800,000	2012 CIP Estimate.

Project	Year	FAA Portion	State Portion	Local/Other Portion	Total	Source of Cost Estimate
General Aviation Access Road Rehabilitation - Phase 2	2018	--	$120,000	$30,000	$150,000	CIP Estimate
Subtotal 2018		**$4,870,350**	**$875,575**	**$785,575**	**$6,531,500**	
2019						
Runway 11/29 Remarking	2019	--	$40,000	$40,000	$80,000	CIP Estimate
Construct Bulk Aircraft Storage Hangar	2019		$400,000	$400,000	$800,000	CIP Estimate
Resurface T-Hangar Roofs	2019	--	$110,000	$110,000	$220,000	CIP Estimate
Acquire Tractor and Mowing Attachments	2019		$45,000	$45,000	$90,000	
Baggage Make-up Expansion	2019	$3,600,000	$200,000	$200,000	$4,000,000	2012 CIP Estimate.
Taxiway A Rehabilitation Phase 2	2019	$885,060	$49,170	$49,170	$983,400	CIP Estimate
Wildlife Hazard Management Plan (Plan Update)	2019	$27,000	$1,500	$1,500	$30,000	Based on Former Study
Taxiway C Lighting and Signage Rehabilitation	2019	$405,000	$22,500	$22,500	$450,000	CIP Estimate
General Aviation Apron Strengthening (NE 48th Ave)	2018	$787,500	$43,750	$43,750	$875,000	ALP Update Report Estimate (RS&H)
General Aviation Apron Strengthening (FBO Vicinity)	2018	$967,500	$53,750	$53,750	$1,075,000	ALP Update Report Estimate (RS&H)
Air Methods Resurface Hangar Roof	2019	--	$25,000	$25,000	$50,000	CIP Estimate
Parking Lot Expansion Phase 2	2019	--	$225,000	$225,000	$450,000	CIP Estimate
Fuel Farm Expansion	2019	--	$250,000	$250,000	$500,000	CIP Estimate
Runway 11/29 Safety Area Improvements	2019	$423,900	$23,500	$23,500	$470,900	CIP Estimate
Subtotal 2019		**$7,095,960**	**$1,489,170**	**$1,489,170**	**$10,074,300**	
2020						
Airport Maintenance Facility - Phase 2	2020	--	$250,000	$250,000	$500,000	CIP Estimate
Hangar # GA-25 Rehabilitate/Replace (JAU)	2020	--	$200,000	$200,000	$400,000	CIP Estimate
General Aviation Apron Extension to TXY A	2018	$427,500	$23,750	$23,750	$475,000	

Project	Year	FAA Portion	State Portion	Local/Other Portion	Total	Source of Cost Estimate
AFSS Rehabilitate into Commercial Multi-use Building	2020	--	$150,000	$150,000	$300,000	CIP Estimate
Expansion of Inter Airport Service Road	2020	$1,980,000	$110,000	$110,000	$2,200,000	
Runway Right Of Way Area Mowers	2020		$14,000	$14,000	$28,000	
Subtotal 2020		**$2,407,500**	**$747,750**	**$747,750**	**$3,903,000**	
SUBTOTAL - Phase I CIP PROJECTS		**$32,304,683**	**$8,972,647**	**$6,033,718**	**$47,311,048**	

Table 13 – Phase II Intermediate Phase Projects (2021-2025)

Project	FAA Portion	State Portion	Local/Other Portion	Total	Source of Cost Estimate
Terminal Area Improvements					
Terminal Apron Expansion Phase 2A	$1,237,500	$68,750	$68,750	$1,375,000	ALP Update Report Estimate (RS&H)
Terminal Apron Expansion Phase 2B	$2,160,000	$120,000	$120,000	$2,400,000	ALP Update Report Estimate (RS&H)
Ticketing Expansion/ATO	$1,820,000	$90,000	$90,000	$2,000,000	
Terminal Loop Road Relocation and Parking Lot Expansion	$1,000,000	$547,500	$547,500	$2,095,000	
Construct Bulk Hangar		$175,000	$175,000	$350,000	CIP Estimate
Subtotal	**$6,217,500**	**$1,001,250**	**$1,001,250**	**$8,220,000**	
Runway Improvements					
Runway Decoupling	$2,137,500	$118,750	$118,750	$2,375,000	ALP Update Report Estimate (RS&H)
Subtotal	**$2,137,500**	**$118,750**	**$118,750**	**$2,375,000**	
Taxiway Improvements					
Run Up Pad/Holding Bay	$270,000	$15,000	$15,000	$300,000	ALP Update Report Estimate (RS&H)
Subtotal	**$270,000**	**$15,000**	**$15,000**	**$300,000**	
General Aviation Apron Improvements					
Air Cargo Facility - Multi-tenant - Design and Construct	0	$1,000,000	$1,000,000	$2,000,000	CIP Estimate
Subtotal	**$0**	**$1,000,000**	**$1,000,000**	**$2,000,000**	
Airport Support Facilities					
None	**$0**	**$0**	**$0**	**$0**	
Airport Roadway Improvements					
Bypass Road to ATCT	$562,500	$31,250	$31,250	$625,000	ALP Update Report Estimate (RS&H)

Project	FAA Portion	State Portion	Local/Other Portion	Total	Source of Cost Estimate
Building 27 Parking Lot	$202,500	$11,250	$11,250	$225,000	ALP Update Report Estimate (RS&H)
Subtotal	**$765,000**	**$42,500**	**$42,500**	**$850,000**	
Site Preparation for Future Building Improvements					
Buildings #13 & #38	$1,485,000	$82,500	$82,500	$1,650,000	ALP Update Report Estimate (RS&H)
MRO/Maintenance Facility	$360,000	$20,000	$20,000	$400,000	ALP Update Report Estimate (RS&H)
FBO Building	$157,500	$8,750	$8,750	$175,000	ALP Update Report Estimate (RS&H)
T-Hangars	$675,000	$37,500	$37,500	$750,000	ALP Update Report Estimate (RS&H)
Future Air Cargo Facility Expansion	$5,985,000	$332,500	$332,500	$6,650,000	ALP Update Report Estimate (RS&H)
Water Main Loop _Waldo Road to the Main Terminal	--	$175,000	$175,000	$350,000	ALP Update Report Estimate (EDA)
Electric Loop_Waldo Road to the Main Terminal		$82,500	$82,500	$165,000	ALP Update Report Estimate by Gainesville Regional Utilities

Project	FAA Portion	State Portion	Local/Other Portion	Total	Source of Cost Estimate
Gravity sewer_ NE 39th Avenue to northernmost point of Airport future development area west of Terminal	--	$400,000	$400,000	$800,000	ALP Update Report Estimate (EDA)
Subtotal	**$8,662,500**	**$1,138,750**	**$1,138,750**	**$10,940,000**	
Other Projects					
Master Plan Update	$450,000	$50,000	$50,000	$550,000	RS&H Estimate
Subtotal	**$450,000**	**$50,000**	**$50,000**	**$550,000**	
SUBTOTAL - INTERMEDIATE PROJECTS	**$18,502,500**	**$3,366,250**	**$3,366,250**	**$25,235,000**	

Table 14 – Phase III Long Term Phase Projects (2026-2032)

Project	FAA Portion	State Portion	Local/Other Portion	Total	Source of Cost Estimate
Terminal Area Improvements					
None	**$0**	**$0**	**$0**	**$0**	
Runway Improvements					
RWY 29 -500' extension	$4,383,000	$243,500	$243,500	$4,870,000	ALP Update Report Estimate (RS&H)
RWY 25 – Future RPZ land acquisition (25 acres)	$90,000	$5,000	$5,000	$100,000	ALP Update Report Estimate (RS&H /EDA)
Runway 25 Extension (3,365')	$6,570,000	$365,000	$365,000	$7,300,000	ALP Update Report Estimate (RS&H)
Subtotal	**$11,043,000**	**$613,500**	**$613,500**	**$12,270,000**	
Taxiway Improvements					
Taxiway 'B" Reconfiguration	$1,417,500	$78,750	$78,750	$1,575,000	ALP Update Report Estimate (RS&H)
Taxiway 'C' Reconfiguration	$1,530,000	$85,000	$85,000	$1,700,000	ALP Update Report Estimate (RS&H)
Subtotal	**$2,947,500**	**$163,750**	**$163,750**	**$3,275,000**	
General Aviation Apron Improvements					
None	**$0**	**$0**	**$0**	**$0**	
Airport Support Facilities					
None	**$0**	**$0**	**$0**	**$0**	
Airport Roadway Improvements					
Perimeter Road Improvements	$697,500	$38,750	$38,750	$775,000	ALP Update Report Estimate (RS&H)
Subtotal	**$697,500**	**$38,750**	**$38,750**	**$775,000**	

Project	FAA Portion	State Portion	Local/Other Portion	Total	Source of Cost Estimate
Site Preparation for Building Improvements					
Development North of Runway 29	$1,057,500	$58,750	$58,750	$1,175,000	ALP Update Report Estimate (RS&H)
General Aviation Corporate Area East of T-Hangars	$1,867,500	$103,750	$103,750	$2,075,000	ALP Update Report Estimate (RS&H)
Building 16 Relocation	$1,462,500	$81,250	$81,250	$1,625,000	ALP Update Report Estimate (RS&H)
Midfield General Aviation Development	$3,532,500	$196,250	$196,250	$3,925,000	ALP Update Report Estimate (RS&H)
Subtotal	**$7,920,000**	**$440,000**	**$440,000**	**$8,800,000**	
SUBTOTAL - LONG-TERM PROJECTS	**$22,608,000**	**$1,256,000**	**$1,256,000**	**$25,120,000**	

Note: With the exception of an estimated cost for a focused EA for the construction of an airport traffic control tower in 2017, this list does not include environmental document costs for airfield projects. It is anticipated that at least a focused environmental assessment or more likely an environmental assessment (EA) will be required for the following: Runway 7/Runway 11 decoupling project; Runway 29 extension; Runway 7-25 extension to 6,500-feet; Runway 'B' Reconfiguration; Runway 'C' Reconfiguration; Perimeter Road; Midfield General Aviation Area; Air Cargo Facility Expansion Area. It is possible that more than one project could be assessed at the same time, e.g., the reconfiguration of Taxiway 'B' and Taxiway 'C'.

CHAPTER 8
AIRPORT LAYOUT PLAN

An Airport Layout Plan (ALP) graphically depicts the current and future facilities at an airport. This includes airport development as recommended by the facility requirements and preferred alternatives identified in the Master Plan. The ALP is an important document because it allows an airport and the FAA to anticipate the needs for future development. It also serves as a public document to demonstrate aeronautical requirements and as a community reference regarding airport development. Additionally, the ALP is a blueprint of airport development that serves as a working tool for the airport and maintenance staff. Due to its importance, keeping the ALP current is a legal requirement for any airport that receives federal assistance (United States Code 47107(a) and FAA Grant Assurance 29).

8.1 ALP DESCRIPTION

The following sections present the ALP for Gainesville Regional Airport (GNV) with a brief discussion of each sheet. The Airport Layout Plan set in Attachment D is provided in conjunction with this report document and has been prepared according to the design requirements set forth in this document, the Federal Aviation Administration Advisory Circulars, and the Florida Department of Transportation Guidebook for Airport Master Planning. The set of plans includes the following sheets:

- Sheet 1: Title Sheet
- Sheet 2: Airport Data Sheet
- Sheet 3: Facility Layout Plan
- Sheet 4: Airport Layout Plan
- Sheet 5: Airspace Drawing (1 of 2)
- Sheet 6: Airspace Drawing (2 of 2) (Extended Precision Instrument Approach)
- Sheet 7: Airport Airspace Profiles
- Sheet 8: Inner Portion of the Approach Surface – Runway 11
- Sheet 9: Inner Portion of the Approach Surface – Runway 29
- Sheet 10: Inner Portion of the Approach Surface – Runway 7
- Sheet 11: Inner Portion of the Approach Surface -- Runway 25
- Sheet 12: Departure Surface Runway 29
- Sheet 13: Terminal Area Plan
- Sheet 14: General Aviation Area Plan (1 of 2)
- Sheet 15: General Aviation Area Plan (2 of 2)
- Sheet 16: Land Use Drawing
- Sheet 17: Airport Property Map

The ALP also incorporates the development projects completed since the last ALP. For GNV, the last ALP was completed and approved by the FAA in 2009. The following developments have occurred at the Airport since 2009:

- Construction of the rental car facility and expanding vehicular parking area.

- Previous Future ALP Drawing identified a Precision Instrument Approach for Runway 7. Since Runway 7-25 is not eligible for federal funds, GNV reevaluated the need for a PI for Runway 7-25. The Airport determined that the highest and best use of land on the southwest side of the airport causes a reconsideration of which end of Runway 7-25 should be planned

for a future PI Approach and that Runway 25 is preferred. As a consequence, the future ALP drawing indicates a future PI Approach for Runway 25 and not Runway 7. See Section 5.3.2 for additional discussion.

Title Sheet - The cover sheet serves as an introduction to the Airport Layout Plan set. It includes the name of the Airport, location map, the FAA AIP number, an index of drawings, and other pertinent data.

Airport Data Sheet - The Airport Data Sheet contains detailed information regarding the existing and future facilities at an Airport. The information includes the following:

- Airport characteristics
- Design standards
- Modification to standards (when they exist)
- Runway characteristics
- Taxiway characteristics
- Wind coverage
- Navigational aids

Facility Layout Plan - The Facilities Layout Plan is a graphic representation, to scale, of the existing Airport facilities in their current configuration as of this writing. This drawing shows all existing Airport facilities, their location, pertinent dimensions, clearance information, and the runway and taxiway infrastructure. The existing facilities as well as other sheets in the ALP detail the Runway Protection Zone (RPZ). The RPZ is an imaginary trapezoidal area located at ground level prior to the runway ends. This area is designated for the protection and people on the ground.

Currently, the RPZ of Runway 7 and Runway 11 extend over the adjacent public roadway, Waldo Road, as well as the newly constructed airport access road (Runway 7 RPZ). No other manmade structures exist within either RPZ. In addition, there are no manmade structures within either the RPZ for Runway 29 or Runway 25 or for the future precision approach RPZs for the future runways after the potential extension of those runways. When the future Runway 7/Runway 11 decoupling project is complete, the Non-Precision Instrument Approach for Runway 7 will no longer cross Waldo Road or the new airport access road. Current land use guidance issued by the FAA details that public roadways are not compatible land uses within the RPZ.

Airport Layout Plan - The Airport Layout Plan (ALP) is a graphic representation, to scale, of existing and proposed airport facilities. This includes the infrastructure location, dimensional and clearance data, and the overall infrastructure of the airport including runways, taxiways and aprons.

The information and analysis presented in the Facility Requirements and Alternatives analysis details the design requirements that pertain to GNV which have been incorporated in the ALP. There are no Modification of Standards (MOS) required at GNV.

Airport Airspace Drawing (1 of 2) (Future) - Federal Aviation Regulation (FAR) Part 77, “Objects Affecting Navigable Airspace,” prescribes airspace standards, which establish criteria for evaluating navigable airspace. Airport Imaginary Surfaces are established relative to the Airport and runways. The size of each imaginary surface is based on the runway category with respect to the existing and proposed visual, non-precision or precision approaches for that runway. The slope and dimensions of the respective approach surfaces are determined by the most demanding (existing or proposed) approach for each runway. The imaginary surfaces definitions include:

- **Primary Surface** – A rectangular area symmetrically located about the runway centerline and extending a distance of 200 feet beyond each runway threshold. Its elevation is the same as that of the runway.

- **Horizontal Surface** – An oval shaped, flat area situated 150 feet above the published airport elevation. Its dimensions are determined by using a 10,000-foot arc, which is centered 200 feet beyond each runway end, then connecting the arcs with a line tangent to those arcs. The horizontal surface elevation for GNV is 302 feet above mean sea level (MSL), given an Airport elevation of 152 feet MSL.

- **Conical Surface** – A sloping area whose inner perimeter conforms to the shape of the horizontal surface. It extends outward for a distance of 4,000 feet measured horizontally, and slopes upward at 20:1.

- **Transitional Surface** – There are three different Transitional Surfaces. The first is off the sides of the Primary Surface, the second is off the sides of the Approach Surface, and the last is outside the Conical Surface and pertains to precision runways only. All Transitional Surfaces have slopes of 7:1 that are measured perpendicular to the runway centerline.

- **Approach Surface** – This surface begins at the ends of the primary surface and slopes upward at a predetermined ratio while at the same time flaring out horizontally. The width and elevation of the inner ends conform to that of the primary surface, while the type of approach to each runway end determines the slope, length and outer width.

The Airport Airspace Drawing also depicts the Threshold Siting Surface. As the name implies, this surface guides in the siting of the threshold location on the runway. The threshold siting surface is an imaginary polygon with two segments and a specified slope. The inner segment is an elongated trapezoid; the outer segment is a long rectangle. The size of the segments and the slope varies based on the existing and future approach type, visibility minimums, and size of aircraft.

As mentioned above in the identification of changes between the last ALP (2009) and this one, the future approach surface for Runway 7-25 has changed from Runway 7 (Precision)/Runway 25 (Non-Precision) to Runway 7 (Non-Precision)/Runway 25 (Precision).

Airport Airspace Drawing (2 of 2) (Extended Precision Instrument Approach) - The extended Precision Instrument Approach sheet depicts the limits of approach surface for the precision instrument approach for Runway 11, Runway 29, and Runway 25. All other information depicted is the same as in the Airport Airspace drawing sheet.

Airport Airspace Profiles - The airport airspace profile drawing identifies the airport elevation, which is the highest point on an active runway at the airport. It shows each runway's ground profile along its centerline based on the highest terrain across the width and along the length of the approach surface, including existing, future, and ultimate runway ends and approach slopes. Significant natural and manmade objects are identified within the approach surfaces, regardless of whether or not they are obstructions.

Inner Portion of Approach Surface - Runway 11 - The inner portion of the approach surface drawing is a required and critical drawing that depicts the trapezoidal Runway Protection Zones (RPZ) and the approach profiles of each runway. The Runway 11 drawing depicts the 34:1 approach

slope for the current and the 50:1 future non-precision instrument approach. The RPZ dimensions are based on the current and future critical aircraft for the Airport. Existing and potential obstructions to runway approach surfaces and air navigation are depicted and identified, as applicable.

Inner Portion of Approach Surface - Runway 29 - The inner portion of the approach surface drawing is a required and critical drawing that depicts the trapezoidal Runway Protection Zones (RPZ) and the approach profiles of each runway. The Runway 29 drawing depicts the current and future 50:1 approach slope for the future precision instrument approach. The RPZ dimensions are based on the current and future critical aircraft for the Airport. Existing and potential obstructions to runway approach surfaces and air navigation are depicted and identified, as applicable.

Inner Portion of Approach Surface - Runway 7 - The inner portion of the approach surface drawing is a required and critical drawing that depicts the trapezoidal Runway Protection Zones (RPZ) and the approach profiles of each runway. The Runway 7 drawing depicts the current and future 34:1 non-precision approach slope. The RPZ dimensions are based on the current and future critical aircraft for the Airport. Existing and potential obstructions to runway approach surfaces and air navigation are depicted and identified, as applicable.

Inner Portion of Approach Surface - Runway 25 - The inner portion of the approach surface drawing is a required and critical drawing that depicts the trapezoidal Runway Protection Zones (RPZ) and the approach profiles of each runway. The Runway 25 drawing depicts the current 34:1 non-precision approach slope and the future 50:1 precision instrument approach. The RPZ dimensions are based on the current and future critical aircraft for the Airport. Existing and potential obstructions to runway approach surfaces and air navigation are depicted and identified, as applicable.

Departure Surface – Runway 29 - The departure surface drawing for Runway 29 depicts the 62.5:1 profile along the centerline of Runway 11-29 in accordance in with the Airport Airspace Drawing. This sheet is provided as an illustration for the City of Gainesville and Alachua County in their consideration of whether or not to protect the One Engine Inoperative (OEI) Surface when each jurisdiction next updates their land use regulations (See Attachment D – ALP Update set).

Terminal Area Plan - The Terminal Area Plan presents a large-scale depiction of the terminal areas of the Airport. This plan is an enlargement of the respective areas found on the ALP sheet. Specifically, it demonstrates the proposed terminal expansion east of the current facility, apron expansions east and west of the terminal, and parking lot expansions to the east and west. The plan also shows the portion of the airport east of the terminal complex inclusive of the proposed sites for a new ATCT/ARFF complex and cargo expansion areas.

General Aviation Area Plan (1 of 2) - The General Aviation Area Plan presents a large-scale depiction of the general aviation areas of the Airport. This plan is an enlargement of the respective areas found on the ALP sheet. Sheet 1 is the general aviation corporate area from Waldo Road northeast to Security Gate #6, including the University Air Terminal Building. Specifically, it demonstrates the proposed general aviation facilities and future expansion of general aviation from the midpoint of Runway 7-25 southwest.

General Aviation Area Plan (2 of 2) - The General Aviation Area Plan presents a large-scale depiction of the general aviation areas of the Airport. This plan is an enlargement of the respective areas found on the ALP sheet. Sheet 2 is primarily general aviation based aircraft and hangar areas, including the future expansion of corporate hangars. Specifically, it demonstrates the proposed

general aviation facilities and future expansion of general aviation from the midpoint of Runway 7-25 northeast.

Land Use Drawing - The Airport land use compatibility drawing depicts the existing and future land use of all land in and within the vicinity of the Airport. The utilization of this land is represented by several use categories, different for the City and County, which are labeled in the legend. The land use plans have been developed through coordination with both the City of Gainesville and Alachua County to include existing city plans and ensure accuracy. Additionally, the most current Airport noise contours have been superimposed on the appropriate drawing. This will give local authorities guidance and help ensure appropriate aviation-compatible zoning in the future (See also Chapter 3).

Airport Property Map - The Airport Property Map presents the Airport property line and a history of Airport land purchases and acquisitions. Bearings and approximate distances from cardinal points define the airport property line. The types of property acquisitions or transactions are presented in a table on the map and include the date of each property acquisition and the federal project number where applicable.

8.2 PRELIMINARY IDENTIFICATION OF ENVIRONMENTAL FEATURES

The section of the ALP Update Report incorporates a summary of the environmental overview as prepared by the 2006 Airport Master Plan, focusing on four environmental categories for which impacts are likely to be studied in future environmental actions at GNV in accordance with FAA Order 5050.4B *Airport Environmental Handbook.* The categories considered by the *Airport Environmental Handbook* are summarized below in terms of potential for impacts at GNV.

- No environmental impacts are anticipated in the following categories:
  - DOT Section 4(f) Lands;
  - Historic, Archaeological and Cultural Resources;
  - Floodplains;
  - Coastal Barriers;
  - Wild and Scenic Rivers;
  - Prime and Unique Farmland;
  - Energy Supply and Natural Resources;
  - Air Quality;
  - Coastal Zone Management;
  - Light Emissions;
  - Solid Waste Impacts; and,
  - Other Considerations.

- Potential environmental impacts are anticipated in the following categories:
  - Compatible Land Use;
  - Social Impacts;
  - Induced Social Impacts;
  - Water Quality;
  - Endangered and Threatened Species;

- Likely environmental impacts are anticipated in the following categories:
  - Noise;
  - Biotic communities;
  - Wetlands;
  - Construction

Four the four categories for which environmental impacts are likely to be studied within future studies of environmental actions are:

Noise – The most recent noise contours for developed for GNV for the year 2027 are shown on the Land Use Drawing (see discussion Section 8.1.16). With the exception of a small area to the northwest of the approach to Runway 11 which is in the jurisdiction of the City of Gainesville, the entire DNL 65 contour exists on airport or on land to be acquired by GNV in the future. The existing land-use surrounding GNV is considered compatible according to the standards outlined in FAR Part 150. The FAA encourages Airport's to acquire land within the 65 DNL to discourage incompatible development. In addition, the FAA encourages control of land beyond 65 DNL as a buffer zone since any future growth in aircraft noise would impact the buffer area.

It is important to note that the City of Gainesville and Alachua County have airport regulations which also govern land use. Gainesville has long recognized the issue of community noise as an important quality of life issue. In addition, the state of Florida has long been known for its leadership in land use planning in anticipation of significant growth. As a result, many Florida communities, like Gainesville, have made quality of life a significant part of its general planning process, including noise.

The City of Gainesville is aware there have been an increasing number of noise complaints across the country due to aircraft sightings on approaches to airports. It is common for airports that are not considered to noise issues beyond DNL 65 have significant noise complaints. With new generation aircraft being much quieter, noise complaints for many airports are more likely to be associated with persons who are seeing aircraft overflights above their neighborhoods in approaches to airports. Subsequent noise complaints actually are more of a statement to perceived quality of life as opposed to those persons being located within a very high noise area. As a result, communities that wish to be more proactive are often too late. Merely addressing noise issues is not always sufficient when also having to attend to the perception of noise problems due to aircraft overflights.

The comparatively small size of GNV's noise zones and the correspondingly short distance from their outer limits to the runway ends means that aircraft on a standard approach over GNV's 60 and 65 DNL noise zone will be operating at significantly lower altitudes within these zones, than aircraft on a similar approach to busier (noisier) commercial airports. Low overflights in these areas may be viewed as a nuisance or safety concern to persons on the ground.

Gainesville has long had measures in place that deal with significant aircraft noise as well as measures that consider transition areas to the significant noise zone that also serves to protect those closer in areas where there are actually lower overflights. In evaluating these land use regulations, the steps taken by GNV to address airport noise are considered to be good advance planning.

In the city's airport regulations, noise is addressed by three noise zones. Noise Zone A addresses sound levels generated by the routine operation of the Airport, i.e., primarily the FAA identification of a level of sound of DNL 65 and greater. Noise Zone B generally approximates a level of sound identified by the FAA as DNL 60 and Noise Zone C generally approximates DNL 55. Zone B and Zone C are transition zones. Because of the absolute size of the Zone A not being large, noise consideration of lesser noise transition areas, also small themselves, is prudent planning, especially for the long-term.

- Noise Zone A prohibits new residences, places of assembly, hospitals, correctional institutions, nursing homes, public and private schools and daycare centers, and outdoor sports arenas and amphitheaters.

- Noise Zone B restricts development to "infill development lots" for neighborhoods or developments constructed prior to December 3, 2009. "Any such development that is allowed shall provide a minimum of 25 dB of exterior-to-interior noise level reduction and the property owner shall provide the City and the Gainesville Regional Airport with a permanent aviation easement.[2]" Noise Zone B does prohibit hospitals but permits outdoors sports theaters and amphitheaters.
- Noise Zone C permits all the uses discussed in Noise Zone A.

Biotic communities – Biotic communities are defined as areas where plants (flora) and animals (fauna) share a mutual habitat necessary for sustenance and propagation. The level of anticipated impacts determines the level of biotic assessment needed.

Previous studies have documented the rich biotic communities for GNV whose habitats include uplands and wetlands. There are mesic flatwoods, forested wetlands, scrub-shrub wetland, emergent wetlands, and riverine communities on GNV property. Upland habitat types at GNV include the majority of the maintained airport field, silvicultural stands of planted pine forests and mixed mesic flatwoods. Wetland systems identified on the GNV site included palustrine forested, palustrine scrubshrub, palustrine emergent (inundated for 200 or more days per year) and riverine systems. Mesic flatwoods are characterized as having a relatively open pine canopy, sparse understory and dense ground cover and were once a dominant community throughout Alachua County but largely have been converted to pine plantations in many areas. Periodic fires through the county (one to eight years) restricts the encroachment of hardwoods and provides a suitable substrate for the regeneration of pines.

Riverine systems in Alachua County include both large rivers and small creek tributaries of variable size. The riverine communities on the airport site consist of small ditches and a perennial stream approximately 20 feet wide, which enters the site through a forty foot culvert on the northwest side of the Runway 7-25, traverses the northern margin of the runway and discharges to the forested area on the east side of the runway.

Wildlife species typically supported by these communities can include black bear, white-tailed deer, a variety of small rodents, numerous species of birds, frogs, and several species of snakes.

Wetlands - Wetlands are defined as those areas that are inundated by surface or ground water with a frequency sufficient to support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, natural ponds, estuarine areas, tidal overflows and shallow lakes and ponds with emergent vegetation. Wetland areas provide several functions: 1) as a wildlife habitat to a variety of wildlife; 2) as important water quality functions in an agricultural area; and 3) provide flood retention benefits during high runoff events. The regulatory definition of wetlands varies by federal, state or local jurisdiction in the United States.

Under Section 404 of the Clean Water Act "jurisdictional waters of the United States, including wetlands" are protected. The term "Waters of the United States" is used to refer to open water or watercourses that are un-vegetated. The United States Army Corps of Engineers (USACE) defines wetlands as: An area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of

[2] Part II – Code of Ordinances, Chapter 30 – Land Development Code – Appendix F – Airport Hazard Zone Regulations, Section 2(C) Airport Noise Zone and Regulations, pp. 8-11.

vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation. The state of Florida defines "wetlands," in Chapter 373, F.S. as those areas that are inundated or saturated by surface water or ground water at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas.

From previous environmental studies of GNV, it is anticipated that some capital development projects proposed on the Airport Layout Plan would impact wetlands. In particular, the planned extension to Runway 7-25 would impact wetlands in the northeast portion of airport property. Other projects that may have wetland impacts include future expansion of the Airport Loop Access Road, the Air Cargo expansion area, the midfield general aviation location adjacent Taxiway 'B, any future perimeter road expansion. Wetland areas also exist within the approaches to most runway ends. The area within the approach to Runway 29 has been permitted by the St Johns River Water Management District (SJRWMD) to allow continuous clearing of the area within this approach. Any future tree clearing or obstruction removal outside of this area which falls within any of the wetland areas shown on the map should be coordinated with the SJRWMD.

Construction – Potential construction impacts likely would include temporary impacts from noise, dust, air emissions from construction vehicles, and erosion. These potential impacts would be quantified within environmental documentation.

8.3 WILDLIFE HAZARD MANAGEMENT ISSUES REVIEW

GNV has an FAA approved Wildlife Hazard Management Plan (2010) which is now part of GNV's Airport Certification Manual. Table 15 summaries the actions identified in the ecological study undertaken for the GNV Wildlife Hazard Management Plan and target dates.

Table 15 – Wildlife Hazard Management Plan Action Plan

Wildlife Population Management	Target Date	Frequency
Manage wildlife hazards within the Airport Operations Area (AOA) through daily wildlife sweeps and runway checks	Continuous	Daily
Maintain U.S. Fish & Wildlife Service Migratory Depredation Permit	March	Annually
Aggressively harass vultures, turkeys, cattle egrets, doves, sandhill cranes, coyotes, deer, and blackbirds from the AOA.	Continuous	Ongoing
Continue use when necessary of audio deterrents such as the propane cannon and pyrotechnics to disperse wildlife	Continuous	Ongoing
continued use of visual deterrents such as display of vulture effigy from VOR reinforced with pyrotechnics as necessary	Continuous	Ongoing/replace effigy as needed
Remove any habitat/structures observed being used for bird nesting	March-June (nesting season)	Annual
Continue to properly dispose of all wildlife carcasses	Continuous	Ongoing
Relocate gopher tortoises from AOA after obtaining Florida Fish & Wildlife Conservation Commission permit	April-October (desirable temperatures)	As needed
Work with FBO and tenants to manage wildlife hazards	Continuous	Ongoing
Visually monitor rodent populations	Continuous	As needed
Use electronic record keeping system (Excel) for tracking wildlife strikes and harassing efforts	Continuous	Ongoing

Habitat Modification		
Maintain an intermediate grass height throughout the AOA	Continuous	Ongoing
Remove brush piles, regeneration areas, etc. within the AOA	Continuous	Ongoing
Manage ditches and culverts throughout airfield to maintain proper drainage	Continuous	Ongoing
Modify and maintain wildlife fencing around airfield to exclude tortoises and mammals	Spring 2012	When funds are available
Keep perimeter fence free of vegetation	Continuous	Ongoing
Assess status of low areas of standing water within the AOA that remain saturated for more than 48 hours for wetland status, obtain permit, and fill	Continuous	As needed
Address future detention/retention ponds on airport for wildlife hazards and drainage efficiency	Continuous	As needed
Establish suitable turf in bare areas	Continuous	When funds are available
Install exclusionary devices (e.g., bird strikes deterrent) on any structure within the airfield identified as an active perching platform (e.g., baggage area or general aviation apron lights)	Continuous	Ongoing
Maintain or eliminate landscaping trees that attract roosting birds	Continuous	Ongoing
Land Use Changes		
Involve the Wildlife Coordinator/Qualified Airport Wildlife Biologist in initial phase of building projects	Continuous	Ongoing
Strongly discourage proposed community projects likely to increase bird numbers within five miles of GNV	Continuous	Ongoing

As part of annual reviews, Wildlife Hazard Training is conducted for GNV staff and tenants in accordance with 14 CFR 139.337, *Wildlife Hazard Management.* Other key items of the Plan's annual review include:

- Summary of results of annual data analysis;
- Summary of progress and challenges in management of the most significant wildlife attractants and/or habitats on or near the airport;
- Summary of progress and challenges in direct wildlife hazard management on the airfield;
- Changes to identified management strategies and documentation;
- Changes/updates to the Wildlife Hazard Management Plan.

ATTACHMENT A
ATCT SAFETY RISK MANAGEMENT DOCUMENT

AIRPORT TRAFFIC CONTROL TOWER SAFETY RISK MANAGEMENT DOCUMENT



Gainesville Regional Airport (GNV)

Gainesville, Florida

Department of Transportation Federal Aviation Administration

Version 1.0
May 22, 2014

TABLE OF CONTENTS

Section 1 Executive Summary 1-1
Section 2 initial Sites Considered 2-1
2.1 Background 2-1
2.2 The Existing Site 2-2
2.3 Site Determinations 2-3
Section 3 The Preferred Sites 3-1
3.1 SITE 1 3-1
3.1.1 Description 3-1
3.1.2 Site Reference Data 3-1
3.1.3 Siting Criteria 3-1
3.1.4 Conclusions 3-6
3.1.5 Estimated Construction Cost 3-6
3.1.6 NASWatch Summary 3-6
3.2 SITE 2 3-7
3.2.1 Description 3-7
3.2.2 Site Reference Data 3-7
3.2.3 Siting Criteria 3-7
3.2.4 Conclusions 3-11
3.2.5 Estimated Construction Cost 3-11
3.2.6 NASWatch Summary 3-11
3.3 SITE 3 3-12
3.3.1 Description 3-12
3.3.2 Site Reference Data 3-12
3.3.3 Siting Criteria 3-12
3.3.4 Conclusions 3-17
3.3.5 Estimated Construction Cost 3-17
3.3.6 NASWatch Summary 3-17
Section 4 Site Comparison Chart 4-1
Section 5 Final Site REcommendation and Approval 5-1
Appendix A Contacts and Sign-In Sheets
Appendix B Panoramic Photographs
Appendix C TERPS Calculations
Appendix D NASWATCH Report
Appendix E Comparative Safety Assessment
Appendix F Preliminary Hazard Assessment

Appendix G Form 7460-1

Appendix H Results From AFTIL Trip #2

Appendix I ATCVAT Printouts

Appendix J Environmental Information

Appendix K Airport Concurrence Form

Appendix L Construction Cost Estimates

Appendix M Drawings

LIST OF FIGURES

Figure 2-1 Gainesville Regional Airport Location.....2-1
Figure 2-2 Existing ATCT Facility.....2-2
Figure 2-3 ATCT Site Determinations.....2-4

LIST OF TABLES

Table 2-1 Potential Runway Development Scenarios.....2-3
Table 3-1 Site 1 ATCVAT Analysis Summary.....3-2
Table 3-2 Site 1 Low Weather ASOS Observations (# Hours Reporting).....3-5
Table 3-3 Site 1 Preliminary Cost Estimates.....3-6
Table 3-4 Site 2 ATCVAT Analysis Summary.....3-7
Table 3-5 Site 2 Low Weather ASOS Observations (# Hours Reporting).....3-10
Table 3-6 Site 2 Preliminary Cost Estimates.....3-11
Table 3-7 Site 3 ATCVAT Analysis Summary.....3-12
Table 3-8 Site 3 Low Weather ASOS Observations (# Hours Reporting).....3-16
Table 3-9 Site 3 Preliminary Cost Estimates.....3-17

Section 1
EXECUTIVE SUMMARY

A new Air Traffic Control Tower (ATCT) facility is proposed for the Gainesville Regional Airport (GNV). The airport wishes to replace its existing Air Traffic Control Tower, which operates as part of the Federal Aviation Administration (FAA) Contract Tower Program. The existing ATCT facility does not have sufficient height to provide controllers with proper Line-of-Sight (LOS) to all movement areas of the airfield, rendering it functionally obsolescent.

The Gainesville Regional Airport proposes to site, design, and construct an ATCT suitable for a Part 139 Class I Airport that sees approximately 75,000 tower operations annually. Intended design is a control cab on top of a functional shaft. An adjacent building may contain equipment and other facilities, but the presence of this building will not affect cab height. The controlling factors on cab height are site topography and ATCT LOS to ultimate airfield development.

After preliminary ATCT replacement sites were identified by the project team, three sites were selected for further evaluation in accordance with criteria in the August 16, 2011, draft version of FAA Order 6480.4B *Airport Traffic Control Tower Siting Criteria*, Chapter 8 – Alternative Siting Process.

Site 1 is located on the southwest quadrant of airport property approximately 570 feet north of the new airport access road and approximately 280 feet south of the airfield perimeter road. Site 1 makes use of some of the highest ground elevation on airport property. The new entrance road would provide access to the site.

Site 2 is located immediately adjacent to the existing ATCT facility. It would be located approximately 150 feet west of the current structure as to not represent a LOS obstruction to the existing ATCT during construction, and that the existing ATCT would not represent a LOS obstruction to the new ATCT prior to demolition.

Site 3 is located 200 feet northwest from the approximate midpoint of Taxiway Bravo. This location avoids the wetlands areas in the vicinity and is located outside of the taxiway object free area. This site would be accessed via NE 52nd Drive, and would command an excellent view of all areas of the airfield.

The evaluation process identified Site 2 as the recommended location for a replacement ATCT at Gainesville Regional Airport. The proposed cab eye height is 98 ft. AGL with an overall tower height of 123 ft. AGL. Considering future airport development, the overall height is the lowest possible height at this location to meet all of the siting criteria in FAA Order 6480.4B. With appropriate site preparation, the ATCT will provide completely unobstructed views of all movement areas of the airport and suitable visibility of airborne traffic. The cab will initially accommodate two (2) Air Traffic Control controller positions, but will have space for up to two (2) more working or supervisory positions. The cab will have a minimum of 230 square feet of walkable floor area (subtracting out the console surfaces, stairwell, and small convenience center).

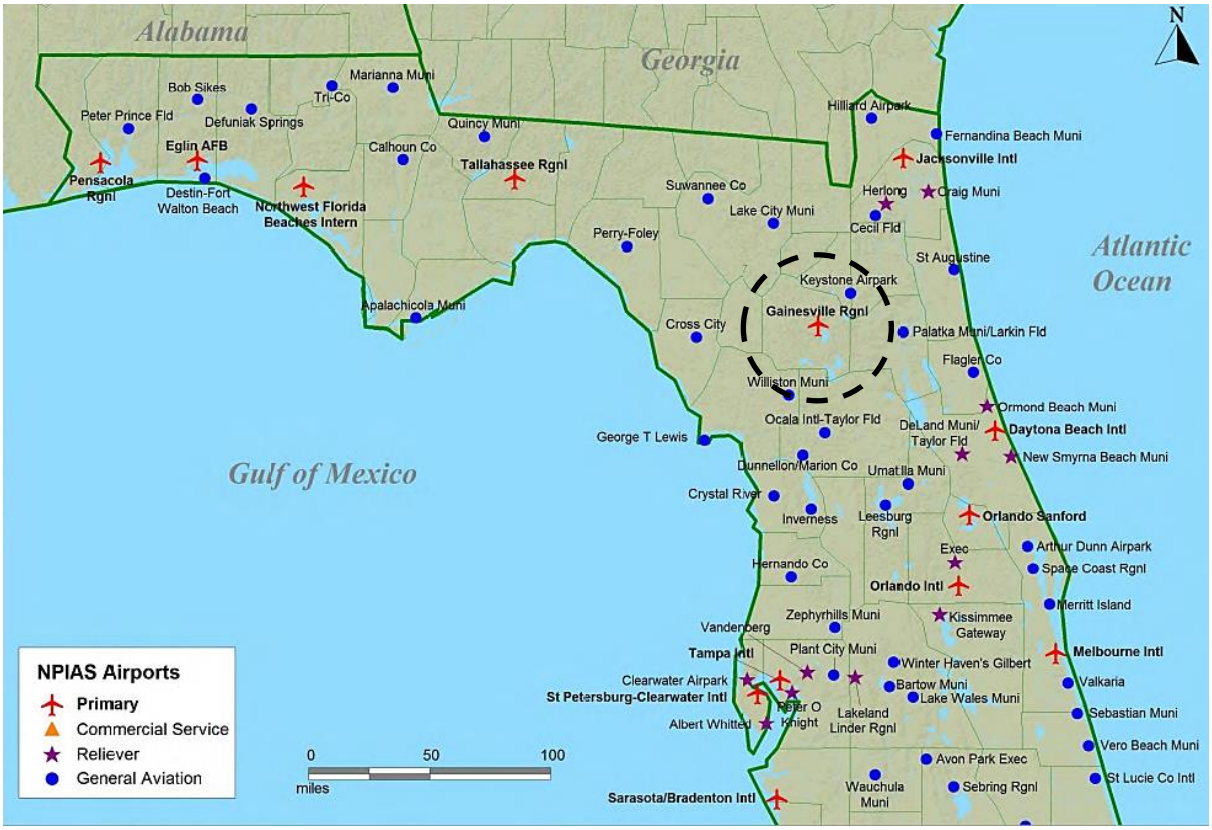
The proposed tower at Site 2 will penetrate the Part 77 transitional surface. However, The ATCT is considered fundamental airport development. The impact to the transitional surface would be appropriately mitigated through obstruction lighting. There are no other known impacts in terms of TERPS, line of sight, future airport development, and local weather phenomena with the potential to impair visibility.

Section 2
INITIAL SITES CONSIDERED

2.1 BACKGROUND

Gainesville Regional Airport (GNV) is owned by the City of Gainesville and operated by the Gainesville-Alachua County Regional Airport Authority. The Airport occupies 1,870 acres approximately 5 miles northeast from the City of Gainesville. The Airport is categorized in the National Plan of Integrated Airport Systems (NPAIS) as a Primary commercial service airport. The Airport maintains a 14 CFR Part 139 Class I Airport Operations Certificate (AOC), meaning that it can accommodate scheduled and unscheduled large air carrier aircraft with 30 or more seats. The FAA's Terminal Area Forecast (TAF), the official aviation activity forecast for NPIAS airports, reports 146,772 passenger enplanements, 72,256 total operations, and 160 based aircraft at GNV in 2010. Figure 2-1 presents the location of the Gainesville Regional Airport.

Figure 2-1 Gainesville Regional Airport Location



Source: 2013 National Plan of Integrated Airport Systems

2.2 THE EXISTING SITE

The existing ATCT facility, constructed in the 1970s, consists of a tower and associated base building housing offices and equipment. Controller eye height is approximately 25 ft. above ground level (AGL) with an overall tower height of approximately 40 ft. AGL. The existing ATCT facility does not have the appropriate height to provide controllers with proper Line-of-Sight (LOS) Angle of Incidence to all functional areas of the airfield, rendering it functionally obsolescent.

The current ATCT is operated under the Federal Contract Tower program, and plans call for that arrangement to continue. According to the FAA's Air Traffic Activity Data System (ATADS), the existing ATCT conducted 75,277 tower operations in 2010. The facility is located to the southern side of the airport property approximately 1,050 feet from the centerline of Runway 11-29 and approximately 2800 feet from the approach end of Runway 11. The coordinates are Latitude 29° 41' 9.99" N; Longitude 82° 16' 6.55" W. The existing tower is shown in Figure 2-2.

Figure 2-2 Existing ATCT Facility



Source: RS&H 2013

2.3 SITE DETERMINATIONS

To determine potential site locations for a proposed ATCT at GNV, the project team met on-site with airport management and air traffic control representatives to discuss and observe several potential site locations. Once these initial sites were identified, the current Master Plan and the Airport Layout Plan were examined to obtain information on current and proposed airport development, as well as topographical information. Other planned developments and environmental information were derived from other sources. No field surveys or geotechnical investigations were conducted as part of this study.

Topographical information and consideration of potential future runway extensions were crucial to the preliminary identification and analysis of potential ATCT locations. The ground elevation on Airport property varies from approximately 95 feet MSL to 160 feet MSL. This fact, paired with the proposed future expansion of runways, ultimately affects the LOS angle of incidence and the overall tower height for potential ATCT locations. Proper planning of the overall tower height is crucial as it ensures the proposed ATCT will be operationally sufficient throughout facility lifespan.

To ensure best planning practices, the site determination process considered both existing runway configuration and potential ultimate runway length scenarios. Table 2-1 details the runway development scenarios considered.

Table 2-1 Potential Runway Development Scenarios

Runway Development Scenario	Runway 7-25 Length	Runway 11-29 Length
Existing	4158’	7504’
Ultimate	6500’ (with 1,000 foot threshold shift to northeast)	8000’

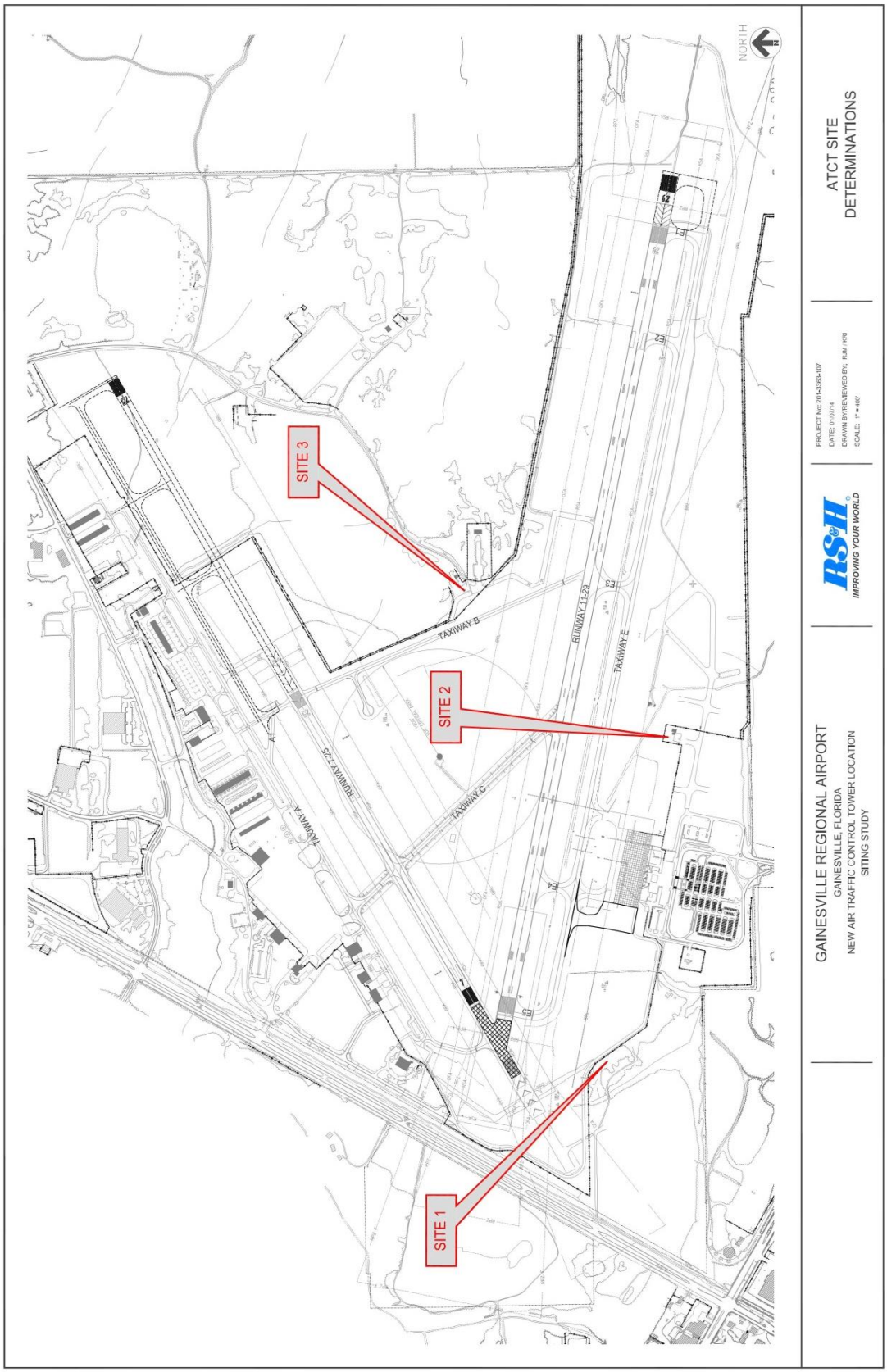
After consideration of preliminary line-of-site and object discrimination trials using the FAA’s Air Traffic Control Visibility Tool (ACTVAT), three sites carried forward for further consideration as described below and identified in Figure 2-3.

Site 1 is located on the southwest quadrant of airport property approximately 570 feet north of the new airport access road and approximately 280 feet south of the airfield perimeter road. Site 1 makes use of some of the highest ground elevation on airport property. The new entrance road would provide access to the site.

Site 2 is located immediately adjacent to the existing ATCT facility. It would be located approximately 150 feet west of the current structure as to not represent a LOS obstruction to the existing ATCT during construction, and that the existing ATCT would not represent a LOS obstruction to the new ATCT prior to demolition.

Site 3 is located 200 feet northwest from the approximate midpoint of Taxiway Bravo. This location avoids the wetlands areas in the vicinity and is located outside of the taxiway object free area. This site would be accessed via NE 52nd Drive, and would command an excellent view of all areas of the airfield.

Figure 2-3 ATCT Site Determinations



Section 3
THE PREFERRED SITES

The potential ATCT locations that warranted further consideration after preliminary evaluation are detailed in this section. They are identified, in no particular order, as Site 1, Site 2, and Site 3. All siting criteria presented in this chapter are from Chapter 8 – Alternative Siting Process in the August 16, 2011, draft version of FAA Order 6480.4B *Airport Traffic Control Tower Siting Criteria*.

3.1 SITE 1

3.1.1 Description

Site 1 is located on the southwest quadrant of airport property approximately 570 feet to the north of the new access road and approximate 280 feet to the south of the airfield perimeter road. It is approximately 950 feet south of the approach end of Runway 07 and approximately 1,175 feet south of the approach end of Runway 11 as measured from the centerline.

Site 1 is currently occupied by a sparse bank of trees, which would be required to be cleared for ATCT construction. Once constructed, the ATCT cab will have northerly, easterly, and westerly views of the airfield. The Site will provide unobstructed lines of sight to all runways, taxiway, and aircraft aprons, as well as the airport traffic pattern without additional site preparation.

3.1.2 Site Reference Data

Site 1 is located at Latitude 29° 41' 16.247" N; Longitude 82° 16' 56.209" W.

3.1.3 Siting Criteria

3.1.3.1 Criteria 1 – Visual Performance

Angle of Incidence: Analysis using the FAA's Air Traffic Control Visibility Analysis Tool (ATCVAT) evaluated the Line of Sight (LOS) angle of incidence from the controller eye height to an object at the farthest point of the movement area. Iterative ACTVAT analysis determined the required observer eye height necessary to achieve proper LOS.

The key point from Site 1 is the future north hangar complex to the west of the future ultimate end of Runway 25, which is 7,927 feet from Site 1. Utilizing Site 1 ground elevation of 150 feet msl and the key point ground elevation of 140 feet msl, a required observer eye height was determined from ATCVAT analysis to be 100 feet AGL. This controller eye height satisfies the LOS Angle of Incidence threshold and provides a 'passing' result of 0.80 degrees. The ATCVAT analysis outputs are included for reference in Appendix I.

It should be noted that all ground elevations in this study were derived from aerial mapping. It is the recognized that the site elevation may vary one to two feet for fill activities during tower construction. For planning purposes, the overall tower height at Site 1 (including antennas and lightning rods) is 125 feet AGL.

Table 3-1 Site 1 ATCVAT Analysis Summary

Key Point	Key Point Distance (feet)	Key Point Elevation (feet MSL)	Site Ground Elevation (feet MSL)	ATCVAT Observer Eye Height (feet AGL)	Required Observer Eye Height (feet AGL)
N. T-Hangar pvmt. end	7,927	140	150	100	100
RWY 25 end	7,947	138	150	99	100
RWY 29 end	8,390	104	150	72	98

Object Discrimination Analysis: The proposed observer eye height of 100 feet AGL produced a 'passing' result for ATCVAT object discrimination for key point distance of 7,927 feet. Probability of detection and recognition of a target object was determined to be 96.6%, and 13.4% respectively (See Appendix I).

Shadow Study: FAA Order 6480.4B *Airport Traffic Control Tower Siting Process*, requires documentation indicating that no shadows obscure any portion of the movement area. A preliminary line of sight study was conducted to identify areas where a shadow study should be conducted. Currently, as viewed from Site 1, no structures exist that shadow on any portion of the movement area; therefore no shadow study was necessary.

3.1.3.2 Criteria 2 – TERPS

Form 7460-1 *Notice of Proposed Construction or Alteration* for Site 1 was filed with the FAA to perform an Obstruction Evaluation/Airport Airspace Analysis (OE/AAA). This analysis, in part, serves to evaluate any impact of the proposed ATCT structure to the terminal instrument approach procedures (TERPS). The OE/AAA determined that the proposed ATCT structure at Site 1 would have future IFR effects for Runway 7-25. Specifically, the proposed ATCT structure at Site 1 would penetrate the future Runway 25 40:1 departure surface. Additionally, it would result in an increasing decision altitude for the Runway 07 RNAV (GPS) approach. The full OE/AAA report is found in Appendix C.

3.1.3.3 Criteria 3 – Part 77

Part 77 of the Federal Aviation Regulations sets forth the civil airport imaginary airspace surfaces used for determining obstructions to air navigation. FAA Order 6480.4B *Airport Traffic Control Tower Siting Process*, requires documentation that these surfaces are not impacted or, if impacted, can be properly mitigated. As discussed in Section 3.1.3.1, the proposed overall height of the ATCT at Site 1 is 125 feet AGL. The corresponding civil airport imaginary surface at the proposed location, known as the transitional surface, is at approximately 91' AGL. Therefore, the proposed ATCT impacts the transitional surface. However, The ATCT is considered fundamental airport development. The impact to the transitional surface would be appropriately mitigated through obstruction lighting in accordance with FAA Advisory Circular (AC) 70/7460-1K.

3.1.3.4 Criteria 4 – Sunlight/Daylight

FAA Order 6480.4B *Airport Traffic Control Tower Siting Process*, requires documentation that sun glare off natural and manmade surfaces, thermal distortion, etc. do not impact the operation of the ATCT. Each of the alternative sites was evaluated at controller eye height at sunrise, midday and

sunset. A helicopter operation at 100 feet AGL was used to replicate the proposed controller eye height for Site 1. Panoramic photographs of Site 1 at each time of day are found in Appendix B.

To evaluate Sunlight/Daylight effects at Site 1, all key points of the standard left-hand traffic patterns to both runways – crosswind to downwind, midfield downwind, downwind to base – as well as runway, taxiway, and apron intersections were assessed for the potential of glare. Sunrise, midday, and sunset sun do not present any glare or other issue that represents a significant hazard to visibility. No visibility limitations were identified to any part of the standard left-hand traffic patterns to any runway that could not be mitigated with appropriate sun shades in the cab.

3.1.3.5 Criteria 5 – Artificial Lighting

FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, requires documentation that any impacts to night-time ground and airborne operations caused by airport lighting, background clutter, and municipal and industrial lighting be identified, with appropriate mitigations described. Each of the alternative sites was evaluated at controller eye height at night. A helicopter operation at 100 feet AGL was used to replicate the proposed controller eye height for Site 1. Panoramic photographs of each site at each time of day are found in Appendix B.

Several steady-lit and strobe-lit towers were found to exist located between approximately 3.5 miles north and 7 miles northwest from the airport that produce elevated sources of light in the line of sight of the traffic pattern. These light sources can be appropriately mitigated through proper training and awareness of ATCT personnel. No other visibility issues associated with artificial lighting at Site 1 were detected.

3.1.3.6 Criteria 6 – Atmospheric Conditions

FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, requires documentation on any naturally occurring atmospheric conditions that create site limitations from any proposed ATCT site.

To determine the local atmospheric conditions at GNV, the analysis reviewed a total of 102,406 hourly reports from the Airport's Automated Surface Observation System dating from January 1, 2002 through December 31, 2011. This included assessing the number of hours during which reported visibility was less than the distance from the proposed tower location to the farthest point on the Airport, and the number of hours during which the reported ceilings were less than the lowest published approach altitude. A summary of the weather data is found in

Table 3-2.

For the purposes of this analysis, the visibility requirement was defined to be the distance from Site 1 to the key point, 9,358 feet (1.77 miles) away. Visibility reported as 1.8 mile or less in the hourly ASOS readings occurred an average of 303 times per year from 2002 to 2011. The number of hourly reports showing visibility of less than 1.8 miles ranged from a low of 176 reports in 2010 to a high of 435 reports in 2007.

The Airport is served by an ILS approach to Runway 29 and RNAV (GPS) and VOR instrument approaches to Runways 7-25 and 11-29. The lowest published decision height is 200 feet AGL for Runway 29 ILS. The proposed overall tower height is below instrument approach minimums for any standardized instrument approach. Therefore, 200-foot ceilings were selected as the most demanding criteria for purposes of the atmospheric analysis. Ceilings of 200 feet or less were reported an average of 258 times per year from 2002-2011. The number of hourly reports showing ceilings of 200 feet or less ranged from a low of 137 reports in 2010 to a high of 337 in 2007.

Table 3-2 Site 1 Low Weather ASOS Observations (# Hours Reporting)

Year	Ceiling ≤ 200 feet	Visibility ≤ 1.8 miles
2002	302	323
2003	294	294
2004	219	270
2005	252	253
2006	199	261
2007	337	435
2008	312	375
2009	284	310
2010	137	176
2011	246	330
Average	**258**	**303**

3.1.3.7 Criteria 7 – Industrial Municipal Discharge

FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, requires documentation of any municipal or industrial discharges that create site limitations from any proposed ATCT sites. Currently an unknown industrial or municipal source was observed to produce a discharge approximately 3.5 miles northeast of the Airport along the approach path to Runway 25. This discharge is not anticipated to create any site limitations. No other industrial or municipal discharges were observed or are known in the area surrounding the Airport.

3.1.3.8 Criteria 8 – Site Access

Ground access to Site 1 would be accommodated via the new airport access road. A short segment of roadway would be constructed to connect the access road to the ATCT facility. Parking facilities for the ATCT would also be required to be constructed.

3.1.3.9 Criteria 9 – Interior Physical Barriers

FAA Order 6480.4B, Airport Traffic Control Tower Siting Process, requires identification of any interior physical barriers of an ATCT that create site limitations. Specifically, mullions and cab equipment cannot affect the line of sight from the proposed ATCT to any critical movement areas, including runway approach and departure ends and runway/taxiway intersections. Using a generic design of an 8-sided tower cab, sight lines were analyzed for interference by mullions/equipment with critical areas of the airfield. Analysis did not reveal any site limitations due to interior physical barriers.

3.1.3.10 Criteria 10 – Security

According to FAA Order 1600.69B – *Implementation Guidance for Sponsor-Owned/Leased Federal Contract Towers*, dated July 1, 2011, the physical security requirements of the ATCT facility are the responsibility of the contractor, with the only requirement being the ability to lock doors and secure access to the tower cab. Therefore, the site has no special physical security requirements at this time.

3.1.4 Conclusions

The physical location of Site 1 makes use of natural elevation to aid in air traffic controller visual performance. Site 1 presents adequate views of the airfield, but is located more than 7,700 feet from the ultimate runway end. The proposed overall tower height of 125 ft. AGL is driven by the need to provide the appropriate lines of sight to all aircraft movement areas. At this location, as described in Section 3.1.3.2, the overall tower height results in interference to instrument operations for Runway 7-25, and the FAA determined the proposed ATCT would represent a hazard to air navigation without mitigation. Such mitigation could include shortening of the runway, elimination of some instrument capabilities, or declared distances.

3.1.5 Estimated Construction Cost

The preliminary construction cost estimates for Site 1 were developed in January 2013 from comparisons to recently bid ATCT projects. The cost estimates were evaluated for the proposed development scenarios in Section 2.3. The estimates presented in Table 3-3 are for budgeting purposes only. They are not based on a completed design and are subject to change. Additionally, the construction market may continue to be volatile depending on materials availability and labor resources, thereby affecting construction costs.

Table 3-3 Site 1 Preliminary Cost Estimates

Cost Function	
Tower & Cab	$1,500,000
Federal Contract Tower Controllers Equipment	$180,000
Site Improvements and Clearing ($7,500/AC)	$15,000
Access Road Improvements ($100/LF Access Road)	$0
Utilities Extensions	$25,000
Engineering Services	$850,000
Total	**$2,570,000**

3.1.6 NASWatch Summary

An FAA review of Form 7460-1 resulted in a Final Determination Letter citing a hazard to air navigation due to the future IFR effects for Runway 7-25. A copy of the Technical Operations NASWATCH Report is included in Appendix D.

3.2 SITE 2

3.2.1 Description

Site 2 is located immediately adjacent to the existing ATCT facility. The proposed ATCT is located approximately 150 feet west of the current structure so as to not present a LOS obstruction to the existing ATCT during construction, and provide that the existing ATCT does not represent a LOS obstruction to the proposed ATCT. Once constructed, the ATCT cab will have northerly, easterly, and westerly views of the airfield. The proposed tower would offer unobstructed lines of sight to all runways, taxiway, and aircraft aprons, as well of the airport traffic pattern without additional site preparation beyond tower construction.

3.2.2 Site Reference Data

Site 2 is located at Latitude 29° 41' 9.889" N; Longitude 82° 16' 22.741" W.

3.2.3 Siting Criteria

3.2.3.1 Criteria 1 – Visual Performance

Angle of Incidence: Analysis using the FAA's Air Traffic Control Visibility Analysis Tool (ATCVAT) evaluated the Line of Sight (LOS) angle of incidence from the controller eye height to an object at the farthest point of the movement area. As summarized in Table 3-4, iterative ATCVAT analysis determined the required observer eye height necessary to achieve proper LOS given the runway development scenarios presented in Table 2.1, and the varying Airport topography.

Table 3-4 Site 2 ATCVAT Analysis Summary

Key Point	Key Point Distance (feet)	Key Point Elevation (feet MSL)	Site Ground Elevation (feet MSL)	ATCVAT Observer Eye Height (feet AGL)	Required Observer Eye Height (feet AGL)
N. T-Hangar pvmt. end	6,125	140	128	98	98
RWY 25 end	6,082	138	128	95	98
RWY 29 end	5,400	104	128	51	98

As Table 3-4 demonstrates, the farthest point on the airfield from Site 2 is the north T-hangar complex, a distance of 6,125 feet. The required observer eye height was determined from ATCVAT analysis to be 98 feet AGL. This controller eye height satisfies the LOS Angle of Incidence threshold giving Site 2 a 'passing' result of 0.8 degrees The ACTVAT analysis outputs are included for reference in Appendix I.

It should be noted that all ground elevations in this study were taken from recent aerial mapping. It is the assumption that the site elevation may vary one to two feet for fill activities during tower construction. For planning purposes, the overall tower height at Site 2 (including antennas and lightning rods) is 123 feet AGL.

Object Discrimination Analysis Results: The proposed observer eye height of 98 feet AGL produced a 'passing' result for ATCVAT object discrimination for the longest key point distance of 6,125 feet. Probability of detection and recognition of a target object was determined to be 98.9%, and 32.7% respectively (See Appendix I).

Shadow Study: FAA Order 6480.4B, Airport Traffic Control Tower Siting Process, requires documentation indicating that no shadows obscure any portion of any movement area. A preliminary line of sight study was conducted to identify areas where a shadow study should be conducted. Currently, as viewed from Site 2, no structures exist that shadow on any portion of the movement area; therefore no shadow study was necessary.

3.2.3.2 Criteria 2 – TERPS

Form 7460-1 *Notice of Proposed Construction or Alteration* for Site 2 was filed with the FAA to perform an Obstruction Evaluation/Airport Airspace Analysis (OE/AAA). This analysis serves to evaluate any impact of the proposed ATCT structure to the terminal instrument approach procedures (TERPS). The OE/AAA determined that the proposed ATCT has no impact to any of the existing or planned approaches with vertical guidance or any of the instrument approaches for the Airport. The full OE/AAA report is found in Appendix C.

3.2.3.3 Criteria 3 – Part 77

Part 77 of the Federal Aviation Regulations sets forth the civil airport imaginary airspace surfaces used for determining obstructions to air navigation. FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, requires documentation that these surfaces are not impacted or, if impacted, can be properly mitigated. As discussed in Section 3.2.3.1, the proposed overall height of the ATCT at Site 2 is 123 feet AGL. The corresponding civil airport imaginary surface at the proposed location, known as the transitional surface, is at approximately 82' AGL. Therefore, the proposed ATCT impacts the transitional surface. However, The ATCT is considered fundamental airport development. The impact to the transitional surface would be appropriately mitigated through obstruction lighting in accordance with FAA Advisory Circular (AC) 70/7460-1K.

3.2.3.4 Criteria 4 – Sunlight/Daylight

FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, requires documentation that sun glare off natural and manmade surfaces, thermal distortion, etc. do not impact the operation of the ATCT. Each of the alternative sites was evaluated at controller eye height at sunrise, midday and sunset. A helicopter operation at 98 feet AGL was used to replicate the proposed controller eye height for Site 2. Panoramic photographs of each site at each time of day are found in Appendix B.

To evaluate Sunlight/Daylight effects at Site 2, all key points of the standard left-hand traffic patterns to both runways – crosswind to downwind, midfield downwind, downwind to base – were assessed for the potential of glare, as well as runway, taxiway, and apron intersections. Sunrise, midday, and sunset sun do not present any glare or other issue that represents a significant hazard to visibility. No visibility limitations were identified to any part of the standard left-hand traffic patterns to any runway that could not be mitigated with appropriate sun shades in the cab.

3.2.3.5 Criteria 5 – Artificial Lighting

FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, requires documentation that any impacts to night-time ground and airborne operations caused by airport lighting, background clutter, and municipal and industrial lighting be identified, with appropriate mitigations described.

Each of the alternative sites was evaluated at controller eye height at night. A helicopter operation at 98 feet AGL was used to replicate the proposed controller eye height for Site 2. Panoramic photographs of each site at each time of day are found in Appendix B.

Several steady-lit and strobe-lit towers were found to exist located between approximately 3.5 miles north and 7 miles northwest from the airport that produce elevated sources of light in the line of sight of the traffic pattern. These light sources can be appropriately mitigated through proper training and awareness of ATCT personnel. No other visibility issues associated with artificial lighting at Site 2 were detected.

3.2.3.6 Criteria 6 – Atmospheric Conditions

FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, requires documentation on any naturally occurring atmospheric conditions that create site limitations from any proposed ATCT site.

To determine the local atmospheric conditions at GNV, the analysis reviewed a total of 102,406 hourly reports from the Airport's Automated Surface Observation System dating from January 1, 2002 through December 31, 2011. This included assessing the number of hours during which reported visibility was less than the distance from the proposed tower location to the farthest point on the Airport, and the number of hours during which the reported ceilings were less than the lowest published approach altitude. A summary of the weather data is found in Table 3-5.

For the purpose of this analysis, the visibility requirement was defined to be the distance from Site 2 to the key point, 6,125 feet (1.16 miles). Visibility reported as 1.3 mile or less in the hourly on-site ASOS readings occurred an average of 240 times per year from 2002 to 2011. The number of hourly reports showing visibility of less than 1.3 miles ranged from a low of 136 reports in 2010 to a high of 336 reports in 2007.

The Airport is served by an ILS approach to Runway 29 and RNAV (GPS) and VOR instrument approaches to Runways 7-25 and 11-29. The lowest published decision height is 200 feet AGL for the Runway 29 ILS. The proposed overall tower height of 123 feet AGL (including antennas) will be below instrument approach minimums for any standardized instrument approach, regardless of whether visibility of the runway end from the tower is obscured. Therefore, 200-foot ceilings were selected as the most demanding criteria for purposes of the atmospheric analysis. Ceilings of 200 feet or less were reported an average of 258 times per year during the last 10 years. The number of hourly reports showing ceilings of 200 feet or less ranged from a low of 137 reports in 2010 to a high of 337 in 2007.

Table 3-5 Site 2 Low Weather ASOS Observations (# Hours Reporting)

Year	Ceiling ≤ 200 feet	Visibility ≤ 1.3 miles
2002	302	270
2003	294	226
2004	219	222
2005	252	203
2006	199	192
2007	337	336
2008	312	310
2009	284	250
2010	137	136
2011	246	250
Average	**258**	**240**

3.2.3.7 Criteria 7 – Industrial Municipal Discharge

FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, requires documentation of any municipal or industrial discharges that create site limitations from any proposed ATCT sites. An unknown industrial or municipal source was observed through visual analysis was seen to produce a discharge approximately 3.5 miles northeast of the Airport along the approach path to Runway 25. This discharge is not anticipated to create any site limitations. No other industrial or municipal discharges were observed or are known in the area surrounding the Airport.

3.2.3.8 Criteria 8 – Site Access

Ground access to Site 2 would be provided by the same infrastructure service the existing ATCT facilities.

3.2.3.9 Criteria 9 – Interior Physical Barriers

FAA Order 6480.4B, Airport Traffic Control Tower Siting Process, requires identification of any interior physical barriers of an ATCT that create site limitations. Specifically, mullions and cab equipment cannot affect the line of sight from the proposed ATCT to any critical movement areas, including runway approach and departure ends and runway/taxiway intersections. Using a generic design of an 8-sided tower cab, sight lines were analyzed for interference by mullions/equipment with critical areas of the airfield. Analysis did not reveal any site limitations due to interior physical barriers.

3.2.3.10 Criteria 10 – Security

According to FAA Order 1600.69B – *Implementation Guidance for Sponsor-Owned/Leased Federal Contract Towers*, dated July 1, 2011, the physical security requirements of the facility are the responsibility of the contractor, with the only requirement being the ability to lock doors and secure access to the tower cab. Therefore, the site has no physical security requirements at this time.

3.2.4 Conclusions

The physical location of Site 2 makes use of existing physical infrastructure to provide a suitable ATCT location. Due to naturally varying terrain, the proposed tower height of 123 ft. AGL is driven by the need to provide the appropriate lines of sight to all aircraft movement areas. As described in Appendix G, approximately 5.5 acres of trees would have to be removed near the on-airport wetland area to provide a clear line of sight to the future end of Runway 25. Permits associated with wetland construction would need to be acquired and Best Management Practices (BMPs) could be used to minimize harm to the rest of the on-airport wetland area. The FAA considers the proposed ATCT at Site 2 suitable to provide ATC services. Therefore, considering airspace determination, cost, and low environmental impact, Site 2 is recommended as the replacement site for the ATCT at GNV.

3.2.5 Estimated Construction Cost

The preliminary construction cost estimates for Site 2 were developed in January 2013 for budgeting purposes only. The cost estimates were evaluated for the proposed development scenarios in Section 2.3. The estimates presented in Table 3-6 have not been based on a completed design and are subject to change. The construction market may continue to be volatile depending on materials availability and labor resources. Costs have been developed from correlation to recently bid ATCT projects.

Table 3-6 Site 2 Preliminary Cost Estimates

Cost Function	
Tower & Cab	$1,500,000
Federal Contract Tower Controller Equipment	$180,000
Site Improvements and Clearing ($7,500/AC)	$300,000
Access Road Improvements ($100/LF Access Road)	$0
Utilities Extensions	$0
Engineering Services	$800,000
Total	**$2,780,000**

3.2.6 NASWatch Summary

An FAA review of Form 7460-1 resulted in a Final Determination Letter citing no objection, provided compliance with applicable operational guidelines during construction, approved obstruction lighting is in place, and a safety phasing planning with FAA Tech Ops is accomplished prior to construction. The site was considered suitable, but not the best location for providing ATC services due to the future extension of Runway 7-25, according to the NASWATCH report. A copy of the NASWATCH Report for Site 2 is included in Appendix D.

3.3 SITE 3

3.3.1 Description

Site 3 is located 200 feet northwest from the approximate midpoint of Taxiway Bravo. It is approximately 1,760 feet southeast of the approach end of Runway 25 and approximately 3,980 feet northwest of the approach end of Runway 29 measured from the centerline. Site 3 is positioned to avoid the wetlands areas in the vicinity and is located outside of the taxiway object free area for future critical aircraft B-737. Once constructed, the ATCT cab will have northerly, southerly, easterly, and westerly views of the airfield. Site 3 provides the shortest key point distances as compared to Sites 1 and 2. However, significant site preparation is required for ground access, and tree topping/clearing is necessary to gain an unobstructed view of runway ends for the runway scenarios detailed in Table 2-1. Preliminary costs and potential environmental impacts associated with Site 3 are detailed in Section 3.3.5 and Appendix J respectively.

3.3.2 Site Reference Data

Site 3 is located at Latitude 29° 41' 29.484" N; Longitude 82° 16' 6.577" W.

3.3.3 Siting Criteria

3.3.3.1 Criteria 1 – Visual Performance

Angle of Incidence: Analysis using the FAA's Air Traffic Control Visibility Analysis Tool (ATCVAT) evaluated the Line of Sight (LOS) angle of incidence from the controller eye height to an object at the farthest point of the movement area. As summarized in Table 3-7, iterative ATCVAT analysis determined the required observer eye height necessary to achieve proper LOS given the runway development scenarios presented in Table 2.1, and the varying Airport topography.

Table 3-7 Site 3 ATCVAT Analysis Summary

Key Point	Key Point Distance (feet)	Key Point Elevation (feet MSL)	Site Ground Elevation (feet MSL)	ATCVAT Observer Eye Height (feet AGL)	Required Observer Eye Height (feet AGL)
RWY 7 end	4,439	152	118	96	96
TWY E end (west)	3,896	145	118	82	96
TWY E end (east)	4,598	104	118	48	96

As demonstrated in Table 3-7, the farthest point on the airfield from Site 3 is the future end of Taxiway E, a distance of 4,598 feet. However, the controlling 'key point' yielding the highest observer eye height is to the Runway 7 end, a distance of 4,439 feet.

Utilizing this information, key point ground elevation, and the Site 3 ground elevation, a required observer eye height was determined from ATCVAT analysis to be 96 feet AGL. This controller eye height satisfies the LOS Angle of Incidence threshold giving Site 3 a 'passing' result of 0.8 degrees. The ATCVAT analysis outputs are included for reference in Appendix I.

It should be noted that all ground elevations in this study were taken from recent aerial mapping. It is the assumption that the site elevation may vary one to two feet for fill activities during tower

construction. For planning purposes, the overall tower height at Site 3 (including antennas and lightning rods) is 121 feet AGL.

Object Discrimination Analysis Results: The proposed observer eye height of 96 feet AGL produced a 'passing' result for ATCVAT object discrimination for the key point distance of 4,439 feet. Probability of detection and recognition of a target object was determined to be 99.7%, and 65.8% respectively. (See Appendix I)

Shadow Study: FAA Order 6480.4B, Airport Traffic Control Tower Siting Process, requires documentation indicating that no shadows obscure any portion of any movement area. A preliminary line of sight study was conducted to identify areas where a shadow study should be conducted. Currently, as viewed from Site 3, no structures exist that shadow on any portion of the movement area; therefore no shadow study was necessary.

3.3.3.2 Criteria 2 – TERPS

Form 7460-1 *Notice of Proposed Construction or Alteration* for Site 3 was filed with the FAA to perform an Obstruction Evaluation/Airport Airspace Analysis (OE/AAA). This analysis serves to evaluate any impact of the proposed ATCT structure to the terminal instrument approach procedures (TERPS). The OE/AAA determined that the proposed ATCT has no impact to any of the existing or planned approaches with vertical guidance or any of the instrument approaches for the Airport. The full OE/AAA report is found in Appendix C.

3.3.3.3 Criteria 3 – Part 77

Part 77 of the Federal Aviation Regulations sets forth the civil airport imaginary airspace surfaces used for determining obstructions to air navigation. FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, requires documentation that these surfaces are not impacted or, if impacted, can be properly mitigated. As discussed in Section 3.3.3.1, the proposed overall height of the ATCT at Site 2 is 123 feet AGL. The corresponding civil airport imaginary surface at the proposed location, known as the transitional surface, is at approximately 93 feet AGL. Therefore, the proposed ATCT impacts the transitional surface. However, The ATCT is considered fundamental airport development. The impact to the transitional surface would be appropriately mitigated through obstruction lighting in accordance with FAA Advisory Circular (AC) 70/7460-1K.

3.3.3.4 Criteria 4 – Sunlight/Daylight

FAA Order 6480.4B, Airport Traffic Control Tower Siting Process, requires documentation that sun glare off natural and manmade surfaces, thermal distortion, etc. do not impact the operation of the ATCT. Each of the alternative sites was evaluated at controller eye height at sunrise, midday and sunset. A helicopter operation at 96 feet AGL was used to replicate the proposed controller eye height for Site 3. Panoramic photographs of each site at each time of day are found in Appendix B.

To evaluate Sunlight/Daylight effects at Site 3, all key points of the standard left-hand traffic patterns to both runways – crosswind to downwind, midfield downwind, downwind to base – were assessed for the potential of glare, as well as runway, taxiway, and apron intersections.

Sunrise and early morning sun glare was found to exist for the approach and traffic pattern for Runway 29. Midday sun presents no issues that represent a significant hazard to visibility. Sunset and late day sun glare was found to exist. However, no limitations were identified to any part of the

standard left-hand traffic patterns to any runway that could not be mitigated with appropriate sun shades in the cab.

3.3.3.5 Criteria 5 – Artificial Lighting

FAA Order 6480.4B, Airport Traffic Control Tower Siting Process, requires documentation that any impacts to night-time ground and airborne operations caused by airport lighting, background clutter, and municipal and industrial lighting be identified, with appropriate mitigations described.

Each of the alternative sites was evaluated at controller eye height at night. A helicopter operation at 96 feet AGL was used to replicate the proposed controller eye height for Site 3. Panoramic photographs of each site at each time of day are found in Appendix B.

Several steady-lit and strobe-lit towers were found to exist located between approximately 3,000 feet south, 3.5 miles north, and 7 miles northwest from the airport that produce elevated sources of light in the line of sight of the traffic pattern. These light sources can be appropriately mitigated through proper training and awareness of ATCT personnel. No other visibility issues associated with artificial lighting at Site 3 were detected.

3.3.3.6 Criteria 6 – Atmospheric Conditions

FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, requires documentation on any naturally occurring atmospheric conditions that create site limitations from any proposed ATCT site.

A total of 102,406 hourly reports from the Airport's Automated Surface Observation System dating from January 1, 2002 through December 31, 2011 were reviewed to assess the number of hours during which reported visibility was less than the distance from the proposed tower location to the farthest point on the Airport and the number of hours during which the reported ceilings were less than the lowest published approach altitude of 200 feet AGL. A summary of the weather data is found in

Table 3-8.

For the purpose of this analysis, the visibility requirement was defined to be the distance from Site 3 to the key point at 4,439 feet (0.84 miles). Visibility reported as 1 mile or less in the hourly on-site ASOS readings occurred an average of 216 times per year from 2002 to 2011. The number of hourly reports showing visibility of less than 1 mile ranged from a low of 120 reports in 2010 to a high of 296 reports in 2007.

Ceilings in the hourly ASOS readings are reported as feet above ground level (AGL) to the nearest 100 feet.

The Airport is served by an ILS approach to Runway 29 and RNAV (GPS) and VOR instrument approaches to Runways 7-25 and 11-29. The lowest published decision height is 200 feet AGL for the Runway 29 ILS. The proposed overall tower height will be below instrument approach minimums for any standardized instrument approach, regardless of whether visibility of the runway end from the tower is obscured. Therefore, 200-foot ceilings were selected as the most demanding criteria for purposes of the atmospheric analysis. Ceilings of 200 feet or less were reported an average of 258 times per year during the last 10 years. The number of hourly reports showing ceilings of 200 feet or less ranged from a low of 137 reports in 2010 to a high of 337 in 2007.

Table 3-8 Site 3 Low Weather ASOS Observations (# Hours Reporting)

Year	Ceiling ≤ 200 feet	Visibility ≤ 1 mile
2002	302	245
2003	294	206
2004	219	201
2005	252	186
2006	199	168
2007	337	296
2008	312	282
2009	284	233
2010	137	120
2011	246	222
Average	**258**	**216**

3.3.3.7 Criteria 7 – Industrial Municipal Discharge.

FAA Order 6480.4B, *Airport Traffic Control Tower Siting Process*, requires documentation of any municipal or industrial discharges that create site limitations from any proposed ATCT sites.

An unknown industrial or municipal source observed on one occasion through visual analysis was seen to produce a discharge approximately 3.5 miles northeast of the Airport along the approach path to Runway 25. This discharge is not anticipated to create any site limitations. No other industrial or municipal discharges were observed or are known in the area surrounding the Airport.

3.3.3.8 Criteria 8 – Site Access

Ground access to Site 3 would be accommodated by NE 52nd drive. Utilities are currently in place along this road, however substantial road improvements would be necessary to enable adequate access. Additionally, Site 3 requires the construction of parking facilities.

3.3.3.9 Criteria 9 – Interior Physical Barriers

FAA Order 6480.4B, Airport Traffic Control Tower Siting Process, requires identification of any interior physical barriers of an ATCT that create site limitations. Specifically, mullions and cab equipment cannot affect the line of sight from the proposed ATCT to any critical movement areas, including runway approach and departure ends and runway/taxiway intersections. Using a generic design of an 8-sided tower cab, sight lines were analyzed for interference by mullions/equipment with critical areas of the airfield. Analysis did not reveal any site limitations due to interior physical barriers.

3.3.3.10 Criteria 10 – Security

According to FAA Order 1600.69B – *Implementation Guidance for Sponsor-Owned/Leased Federal Contract Towers*, dated July 1, 2011, the physical security requirements of the facility are the responsibility of the contractor, with the only requirement being the ability to lock doors and secure access to the tower cab. Therefore, the site has no physical security requirements at this time.

3.3.4 Conclusions

The physical location of Site 3 represents a strategic location that would provide an excellent vantage point for ATC services at GNV. However, Site 3's central location is offset by the fact that it is located on a low point of airport property, and so the central location does not afford a lower tower. Furthermore, significant site improvements would be required for Site 3. As described in Appendix J, approximately 6.5 acres of trees of the on-airport wetland area would have to be removed to provide a clear line of sight with the future end of Runway 25. Permits associated with wetland construction would need to be acquired and Best Management Practices (BMPs) could be used to minimize harm to the rest of the on-airport wetland area. As a result of terrain, site improvements, and environmental impacts, Site 3 is not recommended as the replacement site for the ATCT at GNV.

3.3.5 Estimated Construction Cost

The preliminary construction cost estimates for Site 3 were developed in January 2013 for budgeting purposes only. The cost estimates were evaluated for the proposed development scenarios in Section 2.3. The estimates presented in Table 3-9 have not been based on a completed design and are subject to change. The construction market may continue to be volatile depending on materials availability and labor resources. Costs have been developed from correlation to recently bid ATCT projects.

Table 3-9 Site 3 Preliminary Cost Estimates

Cost Function	
Tower & Cab	$1,500,000
Federal Contract Tower Controllers Equipment	$180,000
Site Improvements and Clearing ($7,500/AC)	$360,000
Access Road Improvements ($100/LF Access Road)	$220,000
Utilities Extensions	$50,000
Engineering Services	$850,000
Total	**$3,160,000**

3.3.6 NASWatch Summary

An FAA review of Form 7460-1 resulted in a Final Determination Letter citing no objection, provided compliance with applicable operational guidelines during construction, approved obstruction lighting is in place, and a safety phasing planning with FAA Tech Ops is accomplished prior to construction. The site was considered the best location of the three proposed sites for providing ATC services. A copy of the NASWATCH Report for Site 3 is included in Appendix D.

Section 4
SITE COMPARISON CHART

Item Description	Site 1			Site 2			Site 3		
Preferred Site	No			Yes			No		
Eye Level	100 ft. AGL, 250 ft. MSL			98 ft. AGL, 226 ft. MSL			96 ft. AGL, 214 ft. MSL		
Latitude / Longitude	29°-41'-16.247" N 82°-16'-56.209" W			29°-41'-9.889" N 82°-16'-22.741" W			29°-41'-29.484" N 82°-16'-6.577" W		
ATCT Height (incl. antennas)	125 ft. AGL, 275 ft. MSL			123 ft. AGL, 251 ft. MSL			121 ft. AGL, 239 ft. MSL		
Maximum Distance (to farthest point, Key Point, on all runways and taxiways)	7,927 ft. (Future North Hangar Complex)			6,125 ft. (Future North Hangar Complex)			4,439 ft. (Runway 7 end)		
Object Discrimination, Pass/Fail, Front View, Dodge Caravan (FAA ATCVAT)	Pass Detection: 97.0% Recognition: 15.1%			Pass Detection: 98.9% Recognition: 32.7%			Pass Detection: 99.7% Recognition: 65.8%		
Line of Sight Angle of Incidence	Pass 0.83°			Pass 0.80°			Pass 0.80°		
ATCT Orientation Direction	NE			N			SW		
Access to ATCT Site	Yes			Yes			Needs Improvement		
Environmental Issues	No significant Impacts			5.5 ac. wetlands No significant Impacts			6.5 ac. wetlands No significant Impacts		
Potential Impacts to NAVAIDs	--			--			--		
TERPS Impacts	Yes			No			No		
Part 77 Impacts	7:1 Surface Penetrated. Obstruction. Ltg. Required			7:1 Surface Penetrated. Obstruction. Ltg. Required			7:1 Surface Penetrated. Obstruction. Ltg. Required		
Total Construction Cost Estimates (incl. ATC equipment)	$2,570,000			$2,780,000			$3,160,000		
Safety Assessment Initial Risk Ranking	H	M	L	H	M	L	H	M	L
	0	0	1	0	0	0	0	0	2
Safety Assessment Predicted Residual Risk Ranking	H	M	L	H	M	L	H	M	L
	0	0	1	0	0	0	0	0	2

Section 5
FINAL SITE RECOMMENDATION AND APPROVAL

ATCT Site Recommendation
GNV Airport Traffic Control Tower

This Agreement is made by and between ATO Terminal Program Operations, and the Terminal Area Office, collectively known as the "Parties." The purpose of this agreement is to address the siting requirements for the new ATCT planned for construction at the Gainesville Regional Airport in Gainesville, Florida.

Section I. The parties agree that the siting requirements must be as follows:

Article I: The location of the ATCT, herein after referred to as Site 2. (NAD-83)
Latitude: 29°-41'-09.889" N
Longitude: 82°-16'-22.741" W

Article 2: The Air Traffic Control Specialist (ATCS) eye height used in the Alternate Siting Process for the purposes of this agreement is 226 feet Mean Sea Level (MSL) or 98 feet AGL, assuming 128 feet MSL site elevation.

Article 3: The total ATCT height including antennae and all other obstructions will be approximately 251 feet MSL or 123 feet AGL, assuming 25 feet from eye height level to top of structure and 128 feet MSL site elevation.

Article 4: The parties are in general concurrence with the assumptions documented in the final site selection report.

Section 2. The Airport Sponsor agrees to notify the assigned Technical Operations Engineering Services (Terminal) project engineer of any proposed, planned, envisioned projects that would be constructed on airport properly that could possibly impact the LOS from the recommended ATCT sites.

Section 3. This agreement does not constitute a waiver of any right guaranteed by law, rule, regulation, or contract on behalf of any party. The undersigned unanimously agree with the choice of Site 1 for the new Airport Traffic Control Tower at the Lynchburg Regional Airport (LYH):

Please see External Clearance Record for this approval signature.

_____ _____
Service Area Director of Terminal Operations Date

Please see External Clearance Record for this approval signature.

_____ _____
Service Area Director of Technical Operations Date

Please see External Clearance Record for this approval signature.

_____ _____
Director of Terminal Program Operations Date

Final Recommended Site Comparative Safety Assessment

Final Site Approval
Regional Lines of Business
GNV Airport Traffic Control Tower
FAA Headquarters

The undersigned concur with the choice of Site 1 for the new Airport Traffic Control Tower at the Gainesville (GNV). The Terminal Facilities signature on this document indicates they accept that no hazards have been identified through the SMS process for this site. The signature of the Director of ATO Terminal, Safety and Operations confirms the safety analysis was performed correctly.

_____ _____
Director, ATO Terminal Safety and Operations Date

_____ _____
ATO Safety Service Unit** Date

_____ _____
Director/Manager ATO Safety Service Unit/LOB Date

_____ _____
Vice President ATO Safety Service Unit/LOB Date

** As required per the latest version of the FAA Safety Management System Manual. Additional signatories may be required based upon identified hazards and assessments.

APPENDIX A
CONTACTS AND SIGN-IN SHEETS

Comparative Safety Assessment Participants

Name	Agency/Company/Function
Richard Owen	FAA Orlando ADO
John Seliga	FAA P&R/FTC PIM
Paul Adjan	Gainesville Regional Airport
Grant Gregoire	FAA Program Implementation Specialist
Jim McKenna*	FAA QC Group, ESC, Facilitator
Shaun Blevins	Gainesville Regional Airport
Ted Lane	RVA Inc, FCT manager
Allan Penksa	Chief Executive Officer, Gainesville Regional Airport
Ken Berkey	FAA Terminal Requirements
Wayne Formby	FAA JAX ATCT
Ken Ibold*	RS&H
Matt Thomason	RS&H
Gary Logston	RS&H
Gordon Reynolds	Air Traffic Consulting Services

* SRM trained

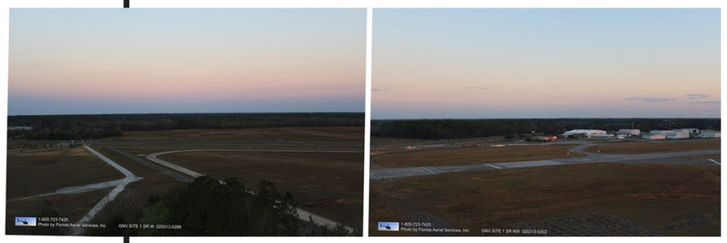
GNV 1/16/2014

Safety Risk Management Panel

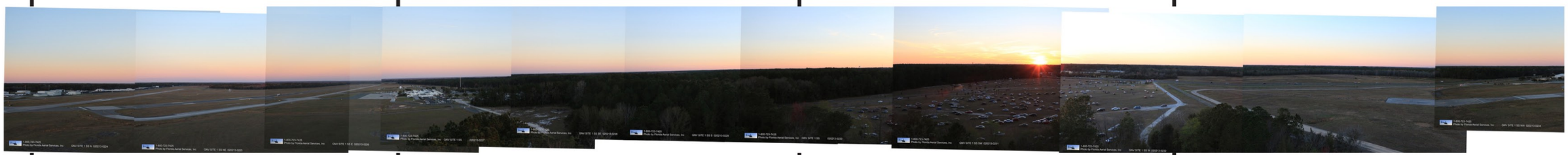
Name	Signature	Date	Organization	Phone #	Email address
Jim McKenna	Jim McKenna	1/16/14	QCG-SMS	404-305-7034	james.ctr.mckenna@faa.gov
GORDON REYNOLDS	Gordon Reynolds	1/16/14	ATCS	904 635 5701	airgord0n1@msn.com
KEN IBOLD	Ken Ibold	1/16/14	RS&H	904 256 2297	KEN.IBOLD@RSANDH.COM
Gary Logston	Gary Logston	1/16/14	RS&H	713 914 4423	gary.logston@rsandh.com
MATT THOMASON	Matt Thomason	1/16/14	RS & H	904 256 2206	matt.thomason@rsandh.com
RICHARD OWEN		1/16/14	FAA ORL ADO	407 [912] 633 1x119	RICHARD.OWEN@FAA.GOV
JOHN SELIGA	John J. Seliga	1/16/14	FAA PER/FCT PIM	404-389-8274	john.seliga@faa.gov
Grant W. Gregoire	Grant W. Gregoire	1/16/14	FAA	404-389-8218	grant.ctr.gregoire@faa.gov
PAUL ADJAN	Paul Adjan	1.16.14	GNV	352.494.2166	paul.adjan@flygainesville.com
SHAUN BLEVINS		1/16/14	GNV	(352)373-0249	shaun.blevins@flygainesville.com
TED LANE	Ted Lane	1/16/14	GNV FCT	352-373-2601	FAAGator@hotmail.com
Allan Penka	Allan Penka	1/16/14	GNV	352-373-0249	allan.penka@flygainesville.com
KEN BERKEY	Kenneth Berkey	1/16/14	FAA PER ATV-E39	404-305-8258	ken.ctr.berkey@faa.gov
WAYNE FORMBY	W J F	1/16/14	FAA JAX ATCT	904-741-0716	WAYNE.FORMBY@FAA.GOV

APPENDIX B
PANORAMIC PHOTOGRAPHS











North

East

South

West

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT
GAINESVILLE, FLORIDA
AIR TRAFFIC CONTROL TOWER
SITING STUDY

RS&H
IMPROVING YOUR WORLD

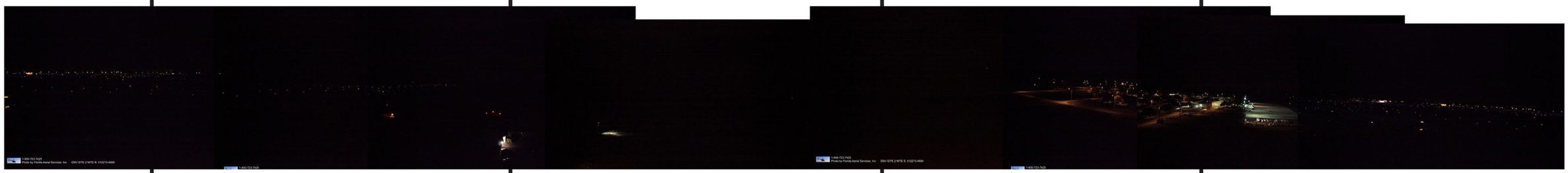
PROJECT NO. 201-3363-107
DATE: 02/15/2013
DRAWN BY/REVIEWED BY: KRI/KRI
SCALE:

PANORAMIC PHOTOS
SITE 1









North

East

South

West

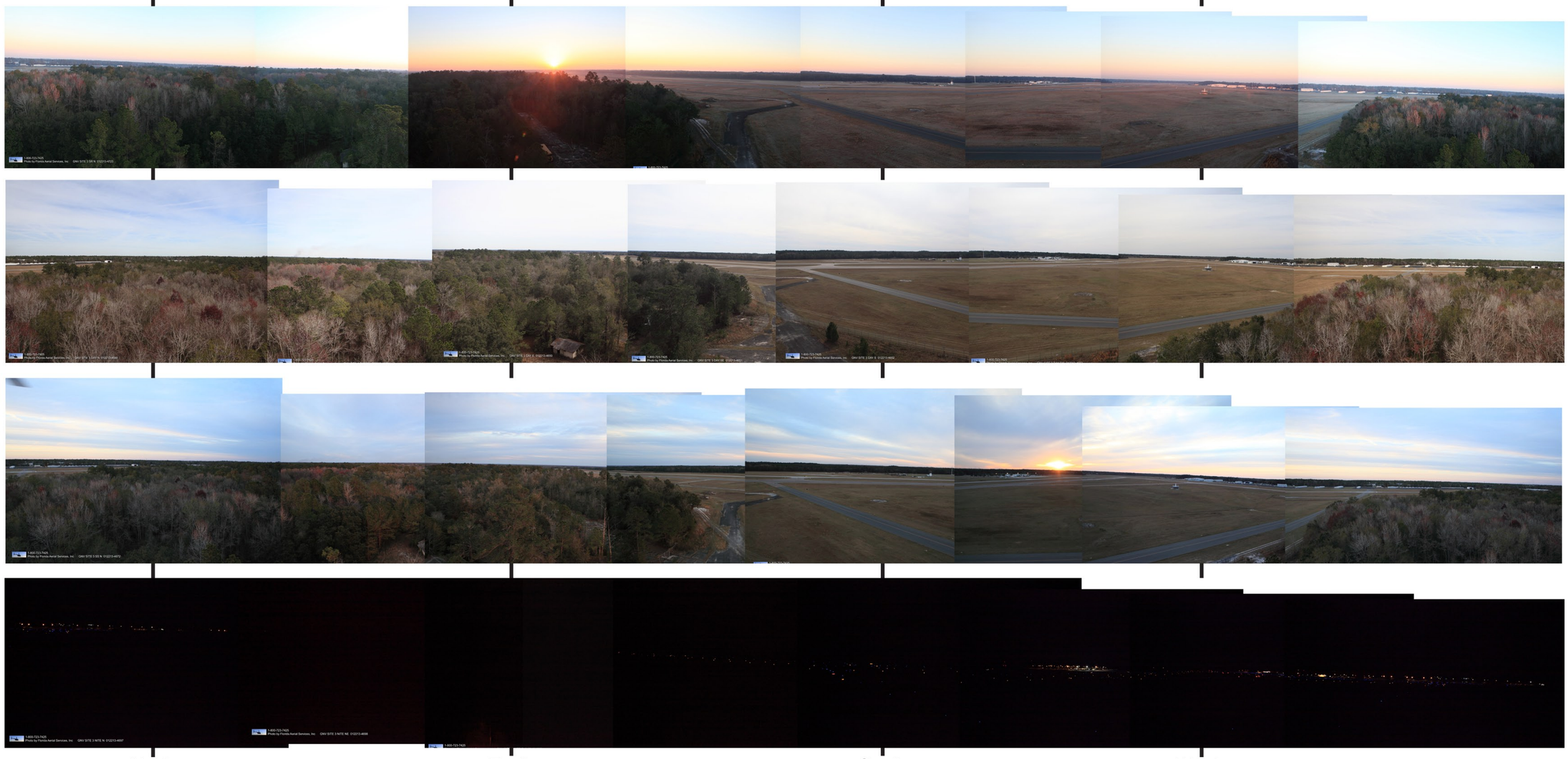
GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT
GAINESVILLE, FLORIDA
AIR TRAFFIC CONTROL TOWER
SITING STUDY

RS&H
IMPROVING YOUR WORLD

PROJECT NO. 201-3363-107
DATE: 02/15/2013
DRAWN BY/REVIEWED BY: KRI/KRI
SCALE:

PANORAMIC PHOTOS
SITE 2



GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT
GAINESVILLE, FLORIDA
AIR TRAFFIC CONTROL TOWER
SITING STUDY

RS&H
IMPROVING YOUR WORLD

PROJECT NO. 201-3363-107
DATE: 02/15/2013
DRAWN BY/REVIEWED BY: KRI/KRI
SCALE:

PANORAMIC PHOTOS
SITE 3

APPENDIX C
TERPS CALCULATIONS

U.S. Department
of Transportation

**Federal Aviation
Administration**

,

April 18, 2013

Gainesville Regional Airport
Attn: Allan Penksa
3880 NE 39th Avenue
Suite A
Gainesville, FL 32609

RE: *(See attached Table 1 for referenced case(s))*
DETERMINATION OF HAZARD TO AIR NAVIGATION

Table 1 - Letter Referenced Case(s)

ASN	Prior ASN	Location	Latitude (NAD83)	Longitude (NAD83)	AGL (Feet)	AMSL (Feet)
2012-ASO-2029-NRA		GAINESVILLE, FL	29-41-16.24N	82-16-56.20W	125	275

The Federal Aviation Administration has completed an aeronautical study under the provisions of 49 U.S.C, Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerning:

Description: Proposed ATCT Site 1: Gainesville Regional Airport (GNV) proposes to site, design, and construct an Air Traffic Control Tower (ATCT) suitable for a Part 139 Class I Airport. This proposed ATCT will replace the existing ATCT facility at GNV. Intended design is a control cab on top of a functional shaft. Site 1 is located at Latitude 29° 41' 16.24" N; Longitude 82° 16' 56.20" W. Site ground elevation is 150 feet MSL. Observer eye height is 100 feet AGL; Structure height is 110 feet AGL; Overall tower height including a lightning rod and antennas is 125 feet AGL. All heights specified are for planning purposes only.

This aeronautical study revealed that the structure as described above would have a substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft and/or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would be a hazard to air navigation.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considering and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have a substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

Our objection to Site 1 is due to the proposal having IFR effects for the planned future Runway 25 extention. The specific IFR effects are as follows: (a) Departure R25 extended ICA 40:1 surface penetration NEH: 185. The proposed tower could be considered a Low Close-In obstruction. (b) RNAV (GPS) R07 extended LPV DA from 360 to 419 NEH: 191. A Low Close-In obstacle classification does not provide rationale to enable construction of structures within the confines of an instrument procedure Obstacle Evaluation Area. Proliferation of Low Close-In obstacles results in potential degradation of safety by increasing procedure complexity and adding obstructions in the critical initial climb area. Therefore Low Close-In obstacles should not be added to existing procedures, as a function of OE/AAA mitigation.

If you have any questions concerning this determination contact Richard Owen (407) 812-6331 richard.owen@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2012-ASO-2029-NRA.

Richard Owen
Specialist

Federal Aviation Administration
Civilian Part 77 Report
ASN: 2012-ASO-2029-NRA
Wed Apr 03 07:30:58 EDT 2013

Obstruction Evaluation

Latitude:	29-41-16.24N	SE:	150
Longitude:	82-16-56.20W	AGL:	125
Case Information & Part 77 results use NAD 83 datum		AMSL:	275

Airports with FAR77 Category Issues

No Airports with FAR77 Category Issues Found

Notice Criteria

77.9 Instrument Approach Area	*GNV[EXISTING][NASR] - RWY 07[EXISTING][NASR]: ---> Exceeds by 124 ft. *GNV[EXISTING][NASR] - RWY 11[EXISTING][NASR]: ---> Exceeds by 128 ft.
77.9 Facility Screening	Further Study Required
FAR 77.9(a)	Does not exceed 200 ft AGL
FAR 77.9(b)	*GNV[EXISTING][NASR] - RWY 11/29[EXISTING][NASR]: ---> Exceeds by 118 ft. *GNV[EXISTING][NASR] - RWY 07/25[EXISTING][NASR]: ---> Exceeds by 116 ft.
FAR 77.9(c)	Not a traverseway
FAR 77.9(d)	Not on an airport

Obstruction Standards

FAR 77.17(a)(1)	DNE 499 ft AGL
FAR 77.17(a)(2)	Does not exceed
FAR 77.17(a)(3)	Surface not evaluated. Refer to FP Division
FAR 77.17(a)(4)	Surface not evaluated. Refer to FP Division
FAR 77.19(a)	Does not apply
FAR 77.19(b)	DNE Conical surface
FAR 77.19(c)	Outside Primary surface
FAR 77.19(d)	DNE Approach surface
FAR 77.19(e)	*GNV[EXISTING][NASR] - RWY 11/29[EXISTING][NASR]: Transitional Surface ---> Exceeds by 44 ft. *GNV[EXISTING][NASR] - RWY 07/25[EXISTING][NASR]: Transitional Surface ---> Exceeds by 44 ft.
FAR 77.23(a)	DNE Heliport primary surface
FAR 77.23(b)	DNE Heliport approach surface

Note: Military surfaces have not been evaluated

Closest Runway Data

Runway End 07

Apt: GNV[EXISTING][NASR]	Runway: 07/25	Runway Type: C(NP1) / C(NP1)
Latitude: 29-41-25.10N	Runway End Type: C(NP1)	Azimuth: 177.70°
Longitude: 82-16-56.60W	Side: R	CD: 407
Elevation: 152	Heading: 60.90°	PD: 799
Length: 4158	Data Source: NASR	DD: 895
Width: 100	Status: EXISTING	

Public Use Airports & Surfaces

*GNV	Name: GAINESVILLE RGN Data Source: NASR Status: EXISTING	Latitude: 29-41-24.20N Longitude: 82-16-18.40W Elevation: 151	Azimuth: 256.38° APT-STR: 0.56 NM or 3430 ft.
U_GNV	Name: GAINESVILLE RGN	Latitude: 29-41-24.10N Longitude: 82-16-18.42W Elevation: 151	Azimuth: 256.52° APT-STR: 0.56 NM or 3427 ft.

Runway 07/25

Data Source: NASR	Length: 4158	Type: C(NP1) / C(NP1)
Status: EXISTING	Width: 100	RWY-STR: 0.14 NM or 854 ft.

Structure top exceeds the Transitional Surface [77.19(e)] by 44 ft.

Runway End 07

Latitude: 29-41-25.10N	Type: C(NP1)	CD: 407
Longitude: 82-16-56.60W	Heading: 60.90°	DD: 895
Elevation: 152	Azimuth: 177.70°	PD: 799
Side: R		

Runway End 25

Latitude: 29-41-45.04N	Type: C(NP1)	CD: -4565
Longitude: 82-16-15.36W	Heading: 240.91°	DD: 4629
Elevation: 131	Azimuth: 230.93°	PD: 799
Side: L		

Runway 11/29

Data Source: NASR	Length: 7504	Type: C(NP1) / PIR
Status: EXISTING	Width: 150	RWY-STR: 0.17 NM or 1051 ft.

Structure top exceeds the Transitional Surface [77.19(e)] by 44 ft.

Runway End 11

Latitude: 29-41-26.00N	Type: C(NP1)	CD: 307
Longitude: 82-16-50.16W	Heading: 102.33°	DD: 1121
Elevation: 148	Azimuth: 208.27°	PD: 1077
Side: R		

Runway End 29

Latitude: 29-41-10.21N	Type: PIR	CD: -7811
Longitude: 82-15-27.02W	Heading: 282.34°	DD: 7889
Elevation: 106	Azimuth: 274.45°	PD: 1077
Side: L		

Alert: Public Airports Within 5 Nautical Miles

Ident	Name	Distance	Latitude	Longitude
*GNV	GAINESVILLE RGNL	0.56	29-41-24.20N	82-16-18.40W

Public Use Heliports & Surfaces

No Public Use Heliports Found

Alert: Heliports Within 5 Nautical Miles

Ident	Name	Distance	Latitude	Longitude
*FA12	SHANDS HELISTOP	4.40	29-38-20.88N	82-20-43.38W

Private Use Airports (in NAD 83 Datum)

Ident	Name	Distance	Latitude	Longitude
FD81	GLEIM FIELD	7.55	29-42-09.88N	82-25-32.38W
63FD	LINK FIELD	10.94	29-41-53.00N	82-29-29.00W

Private Use Heliports (in NAD 83 Datum)

Ident	Name	Distance	Latitude	Longitude
*FA12	SHANDS HELISTOP	4.40	29-38-20.88N	82-20-43.38W
53FL	UNIVERSITY OF FLORIDA	4.54	29-38-38.88N	82-21-11.38W
63FL	SHANDS CAIR	4.74	29-38-07.88N	82-21-01.38W
FA39	VETERANS ADMINISTRATION MEDICAL CENTER	5.16	29-38-13.88N	82-21-43.38W
FA56	NORTH FLORIDA RGNL MEDICAL CENTER	6.97	29-39-41.40N	82-24-43.60W
1FD6	PAINES PRAIRIE	8.49	29-32-45.88N	82-17-14.36W
8FL7	CAPRA FARMS	10.12	29-41-07.88N	82-28-33.40W

Legend

Distances:

CD = Along centerline from threshold
PD = Perpendicular to the centerline
DD = Direct from threshold

* Standard or Special Instrument Approach Procedures

U.S. Department
of Transportation

**Federal Aviation
Administration**

,

April 22, 2013

Gainesville Regional Airport
Attn: Allan Penksa
3880 NE 39th Avenue
Suite A
Gainesville, FL 32609

RE: *(See attached Table 1 for referenced case(s))*
FINAL DETERMINATION

Table 1 - Letter Referenced Case(s)

ASN	Prior ASN	Location	Latitude (NAD83)	Longitude (NAD83)	AGL (Feet)	AMSL (Feet)
2012-ASO-2030-NRA		GAINESVILLE, FL	29-41-09.89N	82-16-22.74W	123	251

Description: Proposed ATCT Site 2: Gainesville Regional Airport (GNV) proposes to site, design, and construct an Air Traffic Control Tower (ATCT) suitable for a Part 139 Class I Airport. This proposed ATCT will replace the existing ATCT facility at GNV. Intended design is a control cab on top of a functional shaft. Site 2 is located at Latitude 29° 41' 9.89" N; Longitude 82° 16' 22.74" W. Site ground elevation is 128 feet MSL. Observer eye height is 98 feet AGL; Structure height is 108 feet AGL; Overall tower height including a lightning rod and antennas is 123 feet AGL. All heights specified are for planning purposes only.

We do not object to the construction described in this proposal provided:

You comply with the requirements set forth in FAA Advisory Circular 150/5370-2, "Operational Safety on Airports During Construction."

Provided the structure is obstruction lighted in accordance with FAA Advisory Circular 70/7460-1K, Obstruction Marking and Lighting, Chapters 4, 5 and 12 (red lights). The AC is available for viewing at http://oeaaa.faa.gov.

And provided coordination of Safety Phasing Plan with local Tech Ops SSC office is accomplished prior to construction. Tech Ops Point of Contact: Last Name;Brannon First Name:Mike Title:Gainesville, FL FAA SSC Manager Telephone Number: 352-372-5916 Comments/Impacts to FAA Equipment: If construction operations require FAA equipment to be removed from service, such as NAVAID/VISAID etc. for more than 24 hours or in excess of 4 hours daily on consecutive days, FAA Technical Operations maintenance personnel must schedule these interruptions through a strategic shutdown committee a minimum of 30 days prior to the start of the project. The proponent shall plan accordingly to ensure adequate advance notice, in addition to the 30 days, is provided to the FAA Technical Operations Point of Contact to ensure proper coordination can be completed prior to project start. If construction operations require FAA equipment to be removed from service,

such as NAVAID/VISAID etc. for less than 24 hours, FAA Technical Operations maintenance personnel must schedule these interruptions a minimum of 12 hours prior to the start of the project. The proponent shall plan accordingly to ensure adequate advance notice, in addition to the 12 hours, is provided to the FAA Technical Operations Point of Contact to ensure proper coordination can be completed prior to project start. Ensure appropriate NOTAMs are issued. Ensure appropriate Notice of Construction/Alteration, FAA 7460-1, is filed for review of all permanent and temporary structures (to include construction equipment) associated with project. Prior to commencing construction activity, parking vehicles, or storing construction equipment and materials near a NAVAID etc., or entering an ILS Critical Area, consult with the local Tech Ops SSC POC. Prior to commencement of any excavation, proponent shall coordinate work in the vicinity of underground utilities/cables with the local Tech Ops SSC POC. Verify emergency contacts and procedures with local Tech Ops SSC prior to construction.

Site 2 is suitable, but not the best location for providing ATC services, when considering the proposed extension of Runway 07/25.

Airport sponsor is to notify the ATO/P planner of the established starting date and schedule of construction for each phase of the Gain-178353536-12 preferably at least 45 days prior to the starting date using a FAA Form entitled AIRPORT SPONSOR STRATEGIC EVENT SUBMISSION FORM. Please contact Richard Owen at (407) 812-6331 and/or richard.owen@faa.gov for the form. (Direction to ARP: The form is located on the Q: \SEC Forms) The Form can be submitted via email to 9-AJV-SEC-ESA@faa.gov. This form shall also be used to report date changes as well.

A separate notice to the FAA is required for any construction equipment, such as temporary cranes, whose working limits would exceed the height and lateral dimensions of your proposal.

This determination does not constitute FAA approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground.

In making this determination, the FAA has considered matters such as the effects the proposal would have on existing or planned traffic patterns of neighboring airports, the effects it would have on the existing airspace structure and projected programs of the FAA, the effects it would have on the safety of persons and property on the ground, and the effects that existing or proposed manmade objects (on file with the FAA), and known natural objects within the affected area would have on the airport proposal.

When your Airport Layout Plan is updated, please include this new development. In the meantime, we will show this feature on your current ALP approved on May 17, 2010.

This determination expires on October 22, 2014 unless:
(a) extended, revised or terminated by the issuing office.
(b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for the completion of construction, or the date the FCC denies the application.

NOTE: Request for extension of the effective period of this determination must be obtained at least 15 days prior to expiration date specified in this letter.

If you have any questions concerning this determination contact Richard Owen (407) 812-6331 richard.owen@faa.gov.

Richard Owen
Specialist
ATTN: Matt Thomason, Reynolds, Smith & Hill, 10748 Deerwood Park Blvd. South, Jacksonville, FL 32256

Federal Aviation Administration
Civilian 14 CFR Part 77 Report
ASN: 2012-ASO-2030-NRA
Mon Apr 22 13:24:40 EDT 2013

Obstruction Evaluation

Latitude:	29-41-09.89N	SE:	128
Longitude:	82-16-22.74W	AGL:	123
Case Information & Part 77 results use NAD 83 datum		AMSL:	251

Airports with Part 77 Category Issues

No Airports with Part 77 Category Issues Found

Notice Criteria

77.9 Instrument Approach Area	Does not exceed
77.9 Facility Screening	Further Study Required
77.9(a)	Does not exceed 200 ft AGL
77.9(b)	*GNV[EXISTING][NASR] - RWY 11/29[EXISTING][NASR]: ---> Exceeds by 109 ft. *GNV[EXISTING][NASR] - RWY 07/25[EXISTING][NASR]: ---> Exceeds by 82 ft.
77.9(c)	Not a traverseway
77.9(d)	Not on an airport

Obstruction Standards

77.17(a)(1)	DNE 499 ft AGL
77.17(a)(2)	Does not exceed
77.17(a)(3)	Surface not evaluated. Refer to FP Division
77.17(a)(4)	Surface not evaluated. Refer to FP Division
77.19(a)	Does not apply
77.19(b)	DNE Conical surface
77.19(c)	Outside Primary surface
77.19(d)	DNE Approach surface
77.19(e)	*GNV[EXISTING][NASR] - RWY 11/29[EXISTING][NASR]: Transitional Surface ---> Exceeds by 37 ft.
77.23(a)	DNE Heliport primary surface
77.23(b)	DNE Heliport approach surface

Note: Military surfaces have not been evaluated

Closest Runway Data

Runway End 11

Apt: GNV[EXISTING][NASR]	Runway: 11/29	Runway Type: C(NP1) / PIR
Latitude: 29-41-26.00N	Runway End Type: C(NP1)	Azimuth: 124.08°
Longitude: 82-16-50.16W	Side: R	CD: -2711
Elevation: 148	Heading: 102.33°	PD: 1076
Length: 7504	Data Source: NASR	DD: 2915
Width: 150	Status: EXISTING	

Public Use Airports & Surfaces

*GNV	Name: GAINESVILLE RGN Data Source: NASR Status: EXISTING	Latitude: 29-41-24.20N Longitude: 82-16-18.40W Elevation: 151	Azimuth: 194.76° APT-STR: 0.25 NM or 1496 ft.
U_GNV	Name: GAINESVILLE RGN	Latitude: 29-41-24.10N Longitude: 82-16-18.42W Elevation: 151	Azimuth: 194.80° APT-STR: 0.24 NM or 1487 ft.

Runway 11/29

Data Source: NASR	Length: 7504	Type: C(NP1) / PIR
Status: EXISTING	Width: 150	RWY-STR: 0.17 NM or 1004 ft.

Structure top exceeds the Transitional Surface [77.19(e)] by 37 ft.

Runway End 11

Latitude: 29-41-26.00N	Type: C(NP1)	CD: -2711
Longitude: 82-16-50.16W	Heading: 102.33°	DD: 2915
Elevation: 148	Azimuth: 124.08°	PD: 1076
Side: R		

Runway End 29

Latitude: 29-41-10.21N	Type: PIR	CD: -4792
Longitude: 82-15-27.02W	Heading: 282.34°	DD: 4914
Elevation: 106	Azimuth: 269.62°	PD: 1076
Side: L		

Runway 07/25

Data Source: NASR	Length: 4158	Type: C(NP1) / C(NP1)
Status: EXISTING	Width: 100	RWY-STR: 0.45 NM or 2746 ft.

Runway End 07

Latitude: 29-41-25.10N	Type: C(NP1)	CD: -1857
Longitude: 82-16-56.60W	Heading: 60.90°	DD: 3359
Elevation: 152	Azimuth: 117.34°	PD: 2791
Side: R		

Runway End 25

Latitude: 29-41-45.04N	Type: C(NP1)	CD: -2300
Longitude: 82-16-15.36W	Heading: 240.91°	DD: 3609
Elevation: 131	Azimuth: 190.33°	PD: 2791
Side: L		

Alert: Public Airports Within 5 Nautical Miles

Ident	Name	Distance	Latitude	Longitude
*GNV	GAINESVILLE RGNL	0.25	29-41-24.20N	82-16-18.40W

Public Use Heliports & Surfaces

No Public Use Heliports Found

Alert: Heliports Within 5 Nautical Miles

Ident	Name	Distance	Latitude	Longitude
*FA12	SHANDS HELISTOP	4.71	29-38-20.88N	82-20-43.38W

Private Use Airports (in NAD 83 Datum)

Ident	Name	Distance	Latitude	Longitude
FD81	GLEIM FIELD	8.04	29-42-09.88N	82-25-32.38W
63FD	LINK FIELD	11.44	29-41-53.00N	82-29-29.00W

Private Use Heliports (in NAD 83 Datum)

Ident	Name	Distance	Latitude	Longitude
*FA12	SHANDS HELISTOP	4.71	29-38-20.88N	82-20-43.38W
53FL	UNIVERSITY OF FLORIDA	4.89	29-38-38.88N	82-21-11.38W
63FL	SHANDS CAIR	5.05	29-38-07.88N	82-21-01.38W
FA39	VETERANS ADMINISTRATION MEDICAL CENTER	5.50	29-38-13.88N	82-21-43.38W
FA56	NORTH FLORIDA RGNL MEDICAL CENTER	7.42	29-39-41.40N	82-24-43.60W
1FD6	PAINES PRAIRIE	8.41	29-32-45.88N	82-17-14.36W
8FL7	CAPRA FARMS	10.61	29-41-07.88N	82-28-33.40W

Legend

Distances:

CD = Along centerline from threshold
PD = Perpendicular to the centerline
DD = Direct from threshold

* Standard or Special Instrument Approach Procedures

U.S. Department
of Transportation

**Federal Aviation
Administration**

,

April 22, 2013

Gainesville Regional Airport
Attn: Allan Penksa
3880 NE 39th Avenue
Suite A
Gainesville, FL 32609

RE: *(See attached Table 1 for referenced case(s))*
FINAL DETERMINATION

Table 1 - Letter Referenced Case(s)

ASN	Prior ASN	Location	Latitude (NAD83)	Longitude (NAD83)	AGL (Feet)	AMSL (Feet)
2012-ASO-2031-NRA		GAINESVILLE, FL	29-41-29.48N	82-16-06.58W	121	239

Description: Proposed ATCT Site 3: Gainesville Regional Airport (GNV) proposes to site, design, and construct an Air Traffic Control Tower (ATCT) suitable for a Part 139 Class I Airport. This proposed ATCT will replace the existing ATCT facility at GNV. Intended design is a control cab on top of a functional shaft. Site 3 is located at Latitude 29° 41' 29.48" N; Longitude 82° 16' 6.577" W. Site ground elevation is 118 feet MSL. Observer eye height is 96 feet AGL; Structure height is 106 feet AGL; Overall tower height including a lightning rod and antennas is 121 feet AGL. All heights specified are for planning purposes only.

We do not object to the construction described in this proposal provided:

You comply with the requirements set forth in FAA Advisory Circular 150/5370-2, "Operational Safety on Airports During Construction."

The structure is obstruction lighted in accordance with FAA Advisory Circular 70/7460-1K, Obstruction Marking and Lighting, Chapters 4, 5 and 12 (red lights). The AC is available for viewing at http://oeaaa.faa.gov.

And provided coordination of Safety Phasing Plan with local Tech Ops SSC office is accomplished prior to construction. Tech Ops Point of Contact: Last Name:Brannon First Name:Mike Title:GNV SSC Manager Telephone Number:352-372-5916 Comments/Impacts to FAA Equipment: If construction operations require FAA equipment to be removed from service, such as NAVAID/VISAID etc. for more than 24 hours or in excess of 4 hours daily on consecutive days, FAA Technical Operations maintenance personnel must schedule these interruptions through a strategic shutdown committee a minimum of 30 days prior to the start of the project. The proponent shall plan accordingly to ensure adequate advance notice, in addition to the 30 days, is provided to the FAA Technical Operations Point of Contact to ensure proper coordination can be completed prior to project start. If construction operations require FAA equipment to be removed from service, such as NAVAID/VISAID etc. for less than 24 hours, FAA Technical Operations maintenance personnel must

schedule these interruptions a minimum of 12 hours prior to the start of the project. The proponent shall plan accordingly to ensure adequate advance notice, in addition to the 12 hours, is provided to the FAA Technical Operations Point of Contact to ensure proper coordination can be completed prior to project start. Ensure appropriate NOTAMs are issued. Ensure appropriate Notice of Construction/Alteration, FAA 7460-1, is filed for review of all permanent and temporary structures (to include construction equipment) associated with project. Prior to commencing construction activity, parking vehicles, or storing construction equipment and materials near a NAVAID etc., or entering an ILS Critical Area, consult with the local Tech Ops SSC POC. Prior to commencement of any excavation, proponent shall coordinate work in the vicinity of underground utilities/cables with the local Tech Ops SSC POC. Verify emergency contacts and procedures with local Tech Ops SSC prior to construction.

Site 3 is the best of the three proposed site locations for providing air traffic control services.

Airport sponsor is to notify the ATO/P planner of the established starting date and schedule of construction for each phase of the Gain-178353536-12 preferably at least 45 days prior to the starting date using a FAA Form entitled AIRPORT SPONSOR STRATEGIC EVENT SUBMISSION FORM. Please contact Richard Owen at (407) 812-6331 and/or richard.owen@faa.gov for the form. (Direction to ARP: The form is located on the Q: \SEC Forms) The Form can be submitted via email to 9-AJV-SEC-ESA@faa.gov. This form shall also be used to report date changes as well.

A separate notice to the FAA is required for any construction equipment, such as temporary cranes, whose working limits would exceed the height and lateral dimensions of your proposal.

This determination does not constitute FAA approval or disapproval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of navigable airspace by aircraft and with respect to the safety of persons and property on the ground.

In making this determination, the FAA has considered matters such as the effects the proposal would have on existing or planned traffic patterns of neighboring airports, the effects it would have on the existing airspace structure and projected programs of the FAA, the effects it would have on the safety of persons and property on the ground, and the effects that existing or proposed manmade objects (on file with the FAA), and known natural objects within the affected area would have on the airport proposal.

When your Airport Layout Plan is updated, please include this new development. In the meantime, we will show this feature on your current ALP approved on May 17, 2010.

This determination expires on October 22, 2014 unless:
(a) extended, revised or terminated by the issuing office.
(b) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for the completion of construction, or the date the FCC denies the application.

NOTE: Request for extension of the effective period of this determination must be obtained at least 15 days prior to expiration date specified in this letter.

If you have any questions concerning this determination contact Richard Owen (407) 812-6331 richard.owen@faa.gov.

Richard Owen
Specialist
ATTN: Matt Thomason, Reynolds, Smith & Hill, 10748 Deerwood Park Blvd. South, Jacksonville, FL 32256

Federal Aviation Administration
Civilian 14 CFR Part 77 Report
ASN: 2012-ASO-2031-NRA
Mon Apr 22 13:39:30 EDT 2013

Obstruction Evaluation

Latitude:	29-41-29.48N	SE:	118
Longitude:	82-16-06.58W	AGL:	121
Case Information & Part 77 results use NAD 83 datum		AMSL:	239

Airports with Part 77 Category Issues

No Airports with Part 77 Category Issues Found

Notice Criteria

77.9 Instrument Approach Area	Does not exceed
77.9 Facility Screening	Further Study Required
77.9(a)	Does not exceed 200 ft AGL
77.9(b)	*GNV[EXISTING][NASR] - RWY 11/29[EXISTING][NASR]: ---> Exceeds by 102 ft. *GNV[EXISTING][NASR] - RWY 07/25[EXISTING][NASR]: ---> Exceeds by 92 ft.
77.9(c)	Not a traverseway
77.9(d)	Not on an airport

Obstruction Standards

77.17(a)(1)	DNE 499 ft AGL
77.17(a)(2)	Does not exceed
77.17(a)(3)	Surface not evaluated. Refer to FP Division
77.17(a)(4)	Surface not evaluated. Refer to FP Division
77.19(a)	Does not apply
77.19(b)	DNE Conical surface
77.19(c)	Outside Primary surface
77.19(d)	DNE Approach surface
77.19(e)	*GNV[EXISTING][NASR] - RWY 11/29[EXISTING][NASR]: Transitional Surface ---> Exceeds by 18 ft.
77.23(a)	DNE Heliport primary surface
77.23(b)	DNE Heliport approach surface

Note: Military surfaces have not been evaluated

Closest Runway Data

Runway End 11

Apt: GNV[EXISTING][NASR]	Runway: 11/29	Runway Type: C(NP1) / PIR
Latitude: 29-41-26.00N	Runway End Type: C(NP1)	Azimuth: 84.75°
Longitude: 82-16-50.16W	Side: L	CD: -3678
Elevation: 148	Heading: 102.33°	PD: 1159
Length: 7504	Data Source: NASR	DD: 3859
Width: 150	Status: EXISTING	

Public Use Airports & Surfaces

*GNV	Name: GAINESVILLE RGN	Latitude: 29-41-24.20N	Azimuth: 62.79°
	Data Source: NASR	Longitude: 82-16-18.40W	APT-STR: 0.19 NM or 1172 ft.
	Status: EXISTING	Elevation: 151	
U_GNV	Name: GAINESVILLE RGN	Latitude: 29-41-24.10N	Azimuth: 62.42°
		Longitude: 82-16-18.42W	APT-STR: 0.19 NM or 1177 ft.
		Elevation: 151	

Runway 11/29

Data Source: NASR	Length: 7504	Type: C(NP1) / PIR
Status: EXISTING	Width: 150	RWY-STR: 0.18 NM or 1088 ft.

Structure top exceeds the Transitional Surface [77.19(e)] by 18 ft.

Runway End 11

Latitude: 29-41-26.00N	Type: C(NP1)	CD: -3678
Longitude: 82-16-50.16W	Heading: 102.33°	DD: 3859
Elevation: 148	Azimuth: 84.75°	PD: 1159
Side: L		

Runway End 29

Latitude: 29-41-10.21N	Type: PIR	CD: -3825
Longitude: 82-15-27.02W	Heading: 282.34°	DD: 3994
Elevation: 106	Azimuth: 299.28°	PD: 1159
Side: R		

Runway 07/25

Data Source: NASR	Length: 4158	Type: C(NP1) / C(NP1)
Status: EXISTING	Width: 100	RWY-STR: 0.28 NM or 1703 ft.

Runway End 07

Latitude: 29-41-25.10N	Type: C(NP1)	CD: -4067
Longitude: 82-16-56.60W	Heading: 60.90°	DD: 4434
Elevation: 152	Azimuth: 84.24°	PD: 1750
Side: R		

Runway End 25

Latitude: 29-41-45.04N	Type: C(NP1)	CD: -90
Longitude: 82-16-15.36W	Heading: 240.91°	DD: 1752
Elevation: 131	Azimuth: 153.87°	PD: 1750
Side: L		

Alert: Public Airports Within 5 Nautical Miles

Ident	Name	Distance	Latitude	Longitude
*GNV	GAINESVILLE RGNL	0.19	29-41-24.20N	82-16-18.40W

Public Use Heliports & Surfaces

No Public Use Heliports Found

Alert: Heliports Within 5 Nautical Miles

No Public Heliports Alerts were found

Private Use Airports (in NAD 83 Datum)

Ident	Name	Distance	Latitude	Longitude
FD81	GLEIM FIELD	8.24	29-42-09.88N	82-25-32.38W
63FD	LINK FIELD	11.65	29-41-53.00N	82-29-29.00W

Private Use Heliports (in NAD 83 Datum)

Ident	Name	Distance	Latitude	Longitude
*FA12	SHANDS HELISTOP	5.10	29-38-20.88N	82-20-43.38W
53FL	UNIVERSITY OF FLORIDA	5.26	29-38-38.88N	82-21-11.38W
63FL	SHANDS CAIR	5.44	29-38-07.88N	82-21-01.38W
FA39	VETERANS ADMINISTRATION MEDICAL CENTER	5.87	29-38-13.88N	82-21-43.38W
FA56	NORTH FLORIDA RGNL MEDICAL CENTER	7.72	29-39-41.40N	82-24-43.60W
1FD6	PAINES PRAIRIE	8.76	29-32-45.88N	82-17-14.36W
8FL7	CAPRA FARMS	10.85	29-41-07.88N	82-28-33.40W

Legend

Distances:

CD = Along centerline from threshold
PD = Perpendicular to the centerline
DD = Direct from threshold

* Standard or Special Instrument Approach Procedures

APPENDIX D
NASWATCH REPORT

Federal Aviation Administration
Tech Ops NASWatch Report
Generated By SYSTEM OEAAA on Mon Dec 10 07:21:54 EST 2012

Facility Search results:

21 Facilities were found within 5.0 nautical miles of NRA Case: 2012-ASO-2029-NRA SE: 150 AGL:125 AMSL: 275

Facility	Facility Id	Apt ID	Latitude Longitude	Ground Elev (FT)	Vertical Angle (Degs)	Azimuth	Dist FT Dist NM	Source
PAPI / 07	GNV	GNV	29-41-25.10N 82-16-56.60W	151.4	7.85	357.69	895.98 0.15	NASR
REIL / 11	GNV	GNV	29-41-26.00N 82-16-50.16W	147.4	6.49	28.39	1121.49 0.18	NASR
PAPI / 11	GNV	GNV	29-41-26.00N 82-16-50.16W	147.4	6.49	28.39	1121.49 0.18	NASR
LOC / 29	GNV	GNV	29-41-28.10N 82-17-01.18W	152.0	5.50	339.84	1276.31 0.21	NASR
**Proposal <= 3000 Ft from ILS Localizer facility								
EFAS	GNV		29-41-33.00N 82-16-54.00W	0.0	9.17	6.54	1704.18 0.28	NASR
**Proposal is <= 2.5 NM of RCAG/BUEC/SBUEC/EFAS and elevation angle >= 2 dgr								
RTR	GNVZ		29-41-27.00N 82-16-28.00W	155.0	5.78	66.39	2714.51 0.45	REGION
**Proposal is <= 2.5 NM of RTR/RCO								
ATCT	GNV	GNV	29-41-27.00N 82-16-28.00W	0.0	5.78	66.39	2714.51 0.45	REGION
**Proposal <= 5 NM of ATCT								
ATCT	GNV	GNV	29-41-10.00N 82-16-20.80W	127.0	2.05	101.41	3185.52 0.52	OEAAA
**Proposal <= 5 NM of ATCT								
RCO	GNV		29-41-31.61N 82-16-22.70W	0.0	4.71	62.27	3338.02 0.55	NASR
**Proposal is <= 2.5 NM of RTR/RCO								
VORTAC	GNV	GNV	29-41-31.61N 82-16-22.70W	128.0	2.52	62.27	3338.02 0.55	NASR
**Proposal is <= 2 NM of VOR / TACAN / VORTAC / VOT / DME and proposal AGL >= 20'								
ASOS	GNV	GNV	29-41-24.00N 82-16-18.00W	0.0	4.55	76.90	3459.43 0.57	NASR
RCO	GNVZ		29-41-30.00N 82-16-15.00W	155.0	4.04	69.07	3890.80 0.64	REGION
**Proposal is <= 2.5 NM of RTR/RCO								
RCO	GNVA		29-41-30.00N 82-16-15.00W	155.0	4.04	69.07	3890.80 0.64	REGION
**Proposal is <= 2.5 NM of RTR/RCO								
RCO	GNV	GNV	29-41-54.00N 82-16-32.00W	138.0	3.60	29.23	4371.10 0.72	REGION
**Proposal is <= 2.5 NM of RTR/RCO								
PAPI / 25	GNV	GNV	29-41-45.04N 82-16-15.36W	130.2	1.79	51.07	4629.80 0.76	NASR
GS / 29	GNV	GNV	29-41-16.12N 82-15-36.82W	106.0	1.38	90.09	7001.44 1.15	NASR
PAPI / 29	GNV	GNV	29-41-10.21N 82-15-27.02W	105.1	1.23	94.42	7889.14 1.30	NASR
MALSR / 29	GNV	GNV	29-41-10.21N 82-15-27.02W	105.1	1.23	94.42	7889.14 1.30	NASR

Facility	Facility Id	Apt ID	Latitude Longitude	Ground Elev (FT)	Vertical Angle (Degs)	Azimuth	Dist FT Dist NM	Source
MB / 29	GNV	GNV	29-41-04.60N 82-14-57.70W	107.0	0.92	96.41	10518.53 1.73	NASR
BUEC	GNV		29-39-36.00N 82-19-48.00W	0.0	0.86	236.26	18227.50 3.00	OEAAA
RCLR	ED7		29-37-57.00N 82-18-49.00W	0.0	0.70	206.32	22453.31 3.70	OEAAA

Long Range Radar Search results:

2 Long Range Radar(s) were found for NRA Case: 2012-ASO-2029-NRA SE: 150 AGL:125 AMSL: 275

Facility	Facility Id	Apt ID	Latitude Longitude	Ground Elev (FT)	Vertical Angle (Degs)	Azimuth	Dist FT Dist NM	Source
ARSR-JSS	CTY		29-23-38.40N 83-00-03.80W	24.8	0.05	245.12	252318.44 41.53	OEAAA
**Long Range Radar Conflict. Further study required.								
ARSR-JSS	NEN		30-20-45.57N 81-52-26.27W	54.1	0.04	28.26	272019.45 44.77	OEAAA
**Long Range Radar Conflict. Further study required.								

USAF Radar Search results:

1 Radar(s) were found for NRA Case: 2012-ASO-2029-NRA SE: 150 AGL:125 AMSL: 275

Radar	Latitude Longitude	Radar Type	FAA ID	State	Source	Dist FT Dist NM
Gainesville	29-24-54.48N 82-13-56.91W	ASR-9	GNV	FL	RADES	100431.78 16.53

Federal Aviation Administration
Tech Ops NASWatch Report
Generated By SYSTEM OEAAA on Mon Dec 10 07:20:21 EST 2012

Facility Search results:

21 Facilities were found within 5.0 nautical miles of NRA Case: 2012-ASO-2030-NRA SE: 128 AGL:123 AMSL: 251

Facility	Facility Id	Apt ID	Latitude Longitude	Ground Elev (FT)	Vertical Angle (Degs)	Azimuth	Dist FT Dist NM	Source
ATCT	GNV	GNV	29-41-10.00N 82-16-20.80W	127.0	27.69	86.28	171.48 0.03	OEAAA
**Proposal <= 5 NM of ATCT								
ASOS	GNV	GNV	29-41-24.00N 82-16-18.00W	0.0	9.59	16.35	1485.44 0.24	NASR
RTR	GNVZ		29-41-27.00N 82-16-28.00W	155.0	7.98	344.97	1789.64 0.29	REGION
**Proposal is <= 2.5 NM of RTR/RCO								
ATCT	GNV	GNV	29-41-27.00N 82-16-28.00W	0.0	7.98	344.97	1789.64 0.29	REGION
**Proposal <= 5 NM of ATCT								
RCO	GNVA		29-41-30.00N 82-16-15.00W	155.0	6.68	18.57	2143.16 0.35	REGION
**Proposal is <= 2.5 NM of RTR/RCO								
RCO	GNVZ		29-41-30.00N 82-16-15.00W	155.0	6.68	18.57	2143.16 0.35	REGION
**Proposal is <= 2.5 NM of RTR/RCO								
RCO	GNV		29-41-31.61N 82-16-22.70W	0.0	6.53	0.09	2194.45 0.36	NASR
**Proposal is <= 2.5 NM of RTR/RCO								
VORTAC	GNV	GNV	29-41-31.61N 82-16-22.70W	128.0	3.21	0.09	2194.45 0.36	NASR
**Proposal is <= 2 NM of VOR / TACAN / VORTAC / VOT / DME and proposal AGL >= 20'								
REIL / 11	GNV	GNV	29-41-26.00N 82-16-50.16W	147.4	2.04	303.95	2915.20 0.48	NASR
PAPI / 11	GNV	GNV	29-41-26.00N 82-16-50.16W	147.4	2.04	303.95	2915.20 0.48	NASR
PAPI / 07	GNV	GNV	29-41-25.10N 82-16-56.60W	151.4	1.70	297.22	3359.58 0.55	NASR
PAPI / 25	GNV	GNV	29-41-45.04N 82-16-15.36W	130.2	1.92	10.38	3609.75 0.59	NASR
EFAS	GNV		29-41-33.00N 82-16-54.00W	0.0	3.97	310.26	3612.87 0.59	NASR
**Proposal is <= 2.5 NM of RCAG/BUEC/SBUEC/EFAS and elevation angle >= 2 dgr								
LOC / 29	GNV	GNV	29-41-28.10N 82-17-01.18W	152.0	1.47	298.48	3858.06 0.63	NASR
**Proposal is < 2 NM and within 25dgr of RWY CL at LOC Ant.								
GS / 29	GNV	GNV	29-41-16.12N 82-15-36.82W	106.0	2.03	81.16	4098.70 0.67	NASR
RCO	GNV	GNV	29-41-54.00N 82-16-32.00W	138.0	3.17	349.61	4530.23 0.75	REGION
**Proposal is <= 2.5 NM of RTR/RCO								
PAPI / 29	GNV	GNV	29-41-10.21N 82-15-27.02W	105.1	1.70	89.62	4914.37 0.81	NASR
MALSR / 29	GNV	GNV	29-41-10.21N 82-15-27.02W	105.1	1.70	89.62	4914.37 0.81	NASR

Facility	Facility Id	Apt ID	Latitude Longitude	Ground Elev (FT)	Vertical Angle (Degs)	Azimuth	Dist FT Dist NM	Source
MB / 29	GNV	GNV	29-41-04.60N 82-14-57.70W	107.0	1.10	94.07	7520.25 1.24	NASR
BUEC	GNV		29-39-36.00N 82-19-48.00W	0.0	0.70	242.37	20441.48 3.36	OEAAA
RCLR	ED7		29-37-57.00N 82-18-49.00W	0.0	0.62	213.53	23371.38 3.85	OEAAA

Long Range Radar Search results:

2 Long Range Radar(s) were found for NRA Case: 2012-ASO-2030-NRA SE: 128 AGL:123 AMSL: 251

Facility	Facility Id	Apt ID	Latitude Longitude	Ground Elev (FT)	Vertical Angle (Degs)	Azimuth	Dist FT Dist NM	Source
ARSR-JSS	CTY		29-23-38.40N 83-00-03.80W	24.8	0.04	245.54	254732.68 41.92	OEAAA
**Long Range Radar Conflict. Further study required.								
ARSR-JSS	NEN		30-20-45.57N 81-52-26.27W	54.1	0.03	27.65	271202.33 44.63	OEAAA
**Long Range Radar Conflict. Further study required.								

USAF Radar Search results:

1 Radar(s) were found for NRA Case: 2012-ASO-2030-NRA SE: 128 AGL:123 AMSL: 251

Radar	Latitude Longitude	Radar Type	FAA ID	State	Source	Dist FT Dist NM
Gainesville	29-24-54.48N 82-13-56.91W	ASR-9	GNV	FL	RADES	99372.29 16.35

Federal Aviation Administration
Tech Ops NASWatch Report
Generated By SYSTEM OEAAA on Mon Dec 10 07:24:14 EST 2012

Facility Search results:

21 Facilities were found within 5.0 nautical miles of NRA Case: 2012-ASO-2031-NRA SE: 118 AGL:121 AMSL: 239

Facility	Facility Id	Apt ID	Latitude Longitude	Ground Elev (FT)	Vertical Angle (Degs)	Azimuth	Dist FT Dist NM	Source
RCO	GNVZ		29-41-30.00N 82-16-15.00W	155.0	17.80	274.05	744.52 0.12	REGION
**Proposal is <= 2.5 NM of RTR/RCO								
RCO	GNVA		29-41-30.00N 82-16-15.00W	155.0	17.80	274.05	744.52 0.12	REGION
**Proposal is <= 2.5 NM of RTR/RCO								
ASOS	GNV	GNV	29-41-24.00N 82-16-18.00W	0.0	11.75	241.21	1149.38 0.19	NASR
VORTAC	GNV	GNV	29-41-31.61N 82-16-22.70W	128.0	4.41	278.62	1438.13 0.24	NASR
**Proposal is <= 1500 feet of VOR / TACAN / VORTAC / VOT / DME								
RCO	GNV		29-41-31.61N 82-16-22.70W	0.0	9.44	278.62	1438.13 0.24	NASR
**Proposal is <= 2.5 NM of RTR/RCO								
PAPI / 25	GNV	GNV	29-41-45.04N 82-16-15.36W	130.2	3.55	333.75	1752.38 0.29	NASR
ATCT	GNV	GNV	29-41-27.00N 82-16-28.00W	0.0	7.15	262.45	1905.85 0.31	REGION
**Proposal <= 5 NM of ATCT								
RTR	GNVZ		29-41-27.00N 82-16-28.00W	155.0	7.15	262.45	1905.85 0.31	REGION
**Proposal is <= 2.5 NM of RTR/RCO								
ATCT	GNV	GNV	29-41-10.00N 82-16-20.80W	127.0	1.91	212.51	2333.61 0.38	OEAAA
**Proposal <= 5 NM of ATCT								
GS / 29	GNV	GNV	29-41-16.12N 82-15-36.82W	106.0	2.58	117.21	2951.27 0.49	NASR
**Proposal <= 3000 Ft from ILS Glide Slope facility								
RCO	GNV	GNV	29-41-54.00N 82-16-32.00W	138.0	4.09	317.85	3341.01 0.55	REGION
**Proposal is <= 2.5 NM of RTR/RCO								
PAPI / 11	GNV	GNV	29-41-26.00N 82-16-50.16W	147.4	1.36	264.79	3859.47 0.64	NASR
REIL / 11	GNV	GNV	29-41-26.00N 82-16-50.16W	147.4	1.36	264.79	3859.47 0.64	NASR
MALSR / 29	GNV	GNV	29-41-10.21N 82-15-27.02W	105.1	1.92	119.15	3994.92 0.66	NASR
PAPI / 29	GNV	GNV	29-41-10.21N 82-15-27.02W	105.1	1.92	119.15	3994.92 0.66	NASR
EFAS	GNV		29-41-33.00N 82-16-54.00W	0.0	3.26	274.86	4197.65 0.69	NASR
**Proposal is <= 2.5 NM of RCAG/BUEC/SBUEC/EFAS and elevation angle >= 2 dgr								
PAPI / 07	GNV	GNV	29-41-25.10N 82-16-56.60W	151.4	1.13	264.28	4434.91 0.73	NASR
LOC / 29	GNV	GNV	29-41-28.10N 82-17-01.18W	152.0	1.03	268.35	4818.53 0.79	NASR

Facility	Facility Id	Apt ID	Latitude Longitude	Ground Elev (FT)	Vertical Angle (Degs)	Azimuth	Dist FT Dist NM	Source
**Proposal is < 2 NM and within 25dgr of RWY CL at LOC Ant.								
MB / 29	GNV	GNV	29-41-04.60N 82-14-57.70W	107.0	1.15	112.47	6574.97 1.08	NASR
BUEC	GNV		29-39-36.00N 82-19-48.00W	0.0	0.60	239.61	22648.46 3.73	OEAAA
RCLR	ED7		29-37-57.00N 82-18-49.00W	0.0	0.53	213.74	25808.58 4.25	OEAAA

Long Range Radar Search results:

2 Long Range Radar(s) were found for NRA Case: 2012-ASO-2031-NRA SE: 118 AGL:121 AMSL: 239

Facility	Facility Id	Apt ID	Latitude Longitude	Ground Elev (FT)	Vertical Angle (Degs)	Azimuth	Dist FT Dist NM	Source
ARSR-JSS	CTY		29-23-38.40N 83-00-03.80W	24.8	0.04	245.27	256852.48 42.27	OEAAA
**Long Range Radar Conflict. Further study required.								
ARSR-JSS	NEN		30-20-45.57N 81-52-26.27W	54.1	0.03	27.58	268788.06 44.24	OEAAA
**Long Range Radar Conflict. Further study required.								

USAF Radar Search results:

1 Radar(s) were found for NRA Case: 2012-ASO-2031-NRA SE: 118 AGL:121 AMSL: 239

Radar	Latitude Longitude	Radar Type	FAA ID	State	Source	Dist FT Dist NM
Gainesville	29-24-54.48N 82-13-56.91W	ASR-9	GNV	FL	RADES	101163.35 16.65

APPENDIX E
COMPARATIVE SAFETY ASSESSMENT

Air Traffic Control Tower Siting Study

Comparative Safety Assessment



Gainesville Regional Airport (GNV)

Gainesville, Florida

Department of Transportation Federal Aviation Administration

Version 1.1
March 4, 2014

SRMD Change Page

Change	Date	Version Number/Revision
Initial draft	February 26, 2014	Version 1.0
Final version	March 4, 2014	Version 1.1

Gainesville Regional Airport Air Traffic Control Tower (ATCT)
Comparative Safety Assessment

Signature Page

Title: Gainesville Regional Airport ATCT Comparative Safety Assessment
Originator: Allan Penksa, A.A.E., Airport Director
Originator's Organization: Gainesville Alachua County Regional Airport Authority
Originator's Phone Number: 352-373-0249
Submission Date: March 4, 2014
SRMD Revision Number:
SRMD Revision Date:

SRMD Reviewed by:

Roger Cerovsky, Eastern Service Center
Quality Control Group (AJV-E11) — Date: 3/5/14

John Stiers, Eastern Service Center
Operations Support Group (AJV-E22) — Date: 3/5/14

Allan Penksa, Airport Director
Gainesville Regional Airport — Date: 3/17/14

SRMD Approval Signature:

Ted Lane, GNV Tower Chief
RVA Inc. — Date: 5/7/14

Wayne Formby, Staff Specialist
Jacksonville ATCT (A80) — Date: 5-13-2014

Risk Acceptance Signature:

Brian Lentini, District Manager
Southern Skies District — Date: 5/21/2014

Table of Contents

Executive Summary 1
Findings 3
Introduction 4
Section 1 – Current System / System Baseline 5
Section 2 – Proposed Change 6
Section 3 – Safety Risk Management Planning and Impacted Organizations 8
Section 4 – Assumptions 9
Section 5 – Phase 1: System Description 9
Section 6 – Phase 2: Identify Hazards 10
Section 7 – Phase 3 & 4: Risk Analysis and Risks Assessed 12
Section 8 – Phase 5: Treatment of Risks / Mitigation of Hazards 17
Section 9 – Tracking and Monitoring of Hazards 18
Preliminary Hazard Worksheet 19
Panoramic Photographs 20
Line of Sight Study 24
Interior Physical Barriers Study 28
Acronyms 32
ATCT Siting Resources 33

List of Figures

Figure 1 – Airport Diagram 2
Figure 2 – Airport Diagram 5
Figure 3 – Alternative ATCT Site Locations 7
Figure 4 – GNV Initial Risk Matrix 16
Figure 5 – GNV Residual Risk Matrix 17
Figure 6 – Preliminary Hazard Worksheet 19
Figure 7 – Site 1 Panoramic Photos 21
Figure 8 – Site 2 Panoramic Photos 22
Figure 9 – Site 3 Panoramic Photos 23
Figure 10 – Site 1 Line of Sight Study Site Plan 25
Figure 11 – Site 2 Line of Sight Study Site Plan 26
Figure 12 – Site 3 Line of Sight Study Site Plan 27
Figure 13 – Site 1 Interior Physical Barriers Site Plan 29
Figure 14 – Site 2 Interior Physical Barriers Site Plan 30

Figure 15 – Site 3 Interior Physical Barriers Site Plan 31

List of Tables

Table 1 – CSA Initial Risk Ranking Results 3
Table 2 – Initial and Predicted Residual Risk Summary 3
Table 3 – Summary of Alternative Sites 6
Table 4 – Comparative Safety Assessment Team Members 8
Table 5 – ATCT Preliminary Hazard List 10
Table 6 – Severity Definitions 14
Table 7 – Likelihood Definitions 15
Table 8 – Gainesville Regional Airport Risk Summary 17

EXECUTIVE SUMMARY

This Comparative Safety Assessment (CSA) compares the assessments of the risks associated with three (3) different sites for a replacement Airport Traffic Control Tower (ATCT) at the Gainesville Regional Airport (GNV). **Site 2** was chosen as the preferred site and is centrally located on the airport.

The purpose of conducting the CSA was to apply the Safety Risk Management (SRM) process defined in the Federal Aviation Administration (FAA) Safety Management System (SMS) Manual version 2.1, dated May 21, 2008 to the ATCT Siting Process in order to make the ATCT siting report compliant with the goals and objectives of the FAA SMS Manual.

The CSA is a comparison of the relative risk among the three (3) preferred sites as identified in the Gainesville Regional Airport Air Traffic Control Tower Preliminary Siting Report. A Preliminary Hazard List (PHL) was used to identify the hazards and hazard analysis worksheets were used to document the severity of consequence and likelihood of occurrence to assess the risk. The three (3) preferred sites, as identified in the ATCT Siting Report, were evaluated against each of the system safety hazards identified in the PHL. The hazards were compared using a Risk Matrix for relative hazard ranking. The CSA only considers hazards that may impact aviation safety.

The siting of the new GNV ATCT may have certain risks associated with it and a SMS Risk Analysis is necessary to identify such risks, eliminate them when possible, and mitigate the remaining risks as necessary.

A diverse evaluation team made up the Safety Risk Management Panel (SRMP), including two (2) SMS-trained individuals. Federal Aviation Administration (FAA) representatives included Orlando ADO, Eastern Service Center (ESC) Operations and Planning and Requirements Group, and Jacksonville Center. The GNV staff included the Airport Director and Operations Manager, and Robinson Aviation Services (RVA Inc.) was also represented. The SRMP discussed hazard identification after validating and using the PHL. Table 1 illustrates the initial risk findings without the recommended safety requirements in place.

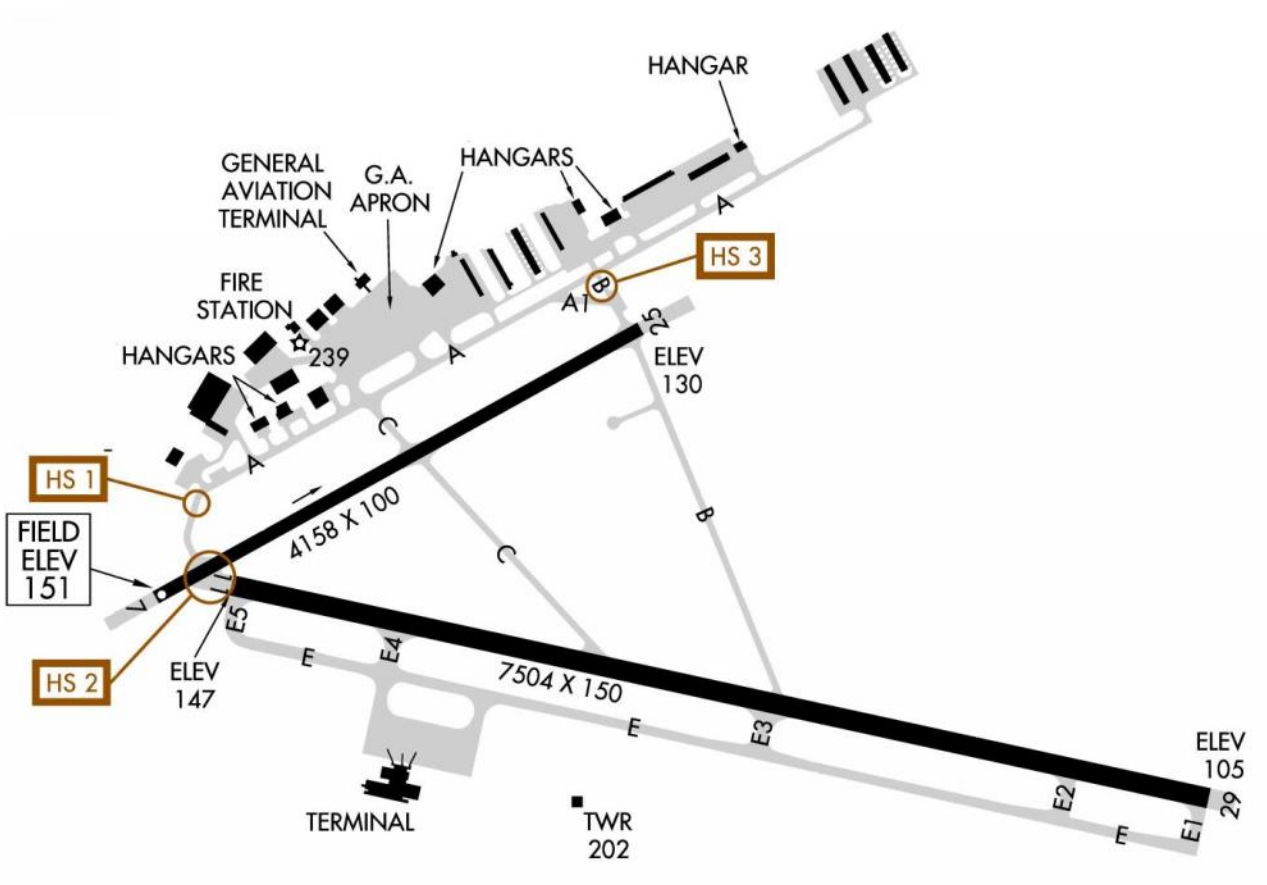
Background

The Gainesville Regional Airport (GNV) is owned and operated by the Gainesville Alachua County Regional Airport Authority of Gainesville, Florida as a Part 139 Class I airport. The Airport occupies approximately 1,870 acres in Alachua County, Florida, five miles northeast of city of Gainesville.

GNV has an operational Air Traffic Control Tower (ATCT) that was opened in the 1970s and is functionally obsolescent due to a controller eye height of only 25 feet above ground level. The existing building is too short to meet current ATCT siting requirements and controllers experience considerable difficulty ascertaining whether aircraft reporting at the hold short lines are in fact clear of the runway. The existing ATCT is operated under the Federal Contract Tower program, and plans call for that arrangement to continue. The FAA's 2013 Terminal Area Forecast reports 72,256 operations and 160 based aircraft in 2011. Commercial air carrier and commuter operations accounted for 146,772 enplanements in 2011.

The current runway configuration includes a primary runway, Runway 11-29, and a crosswind runway, Runway 7-25. Runway 11-29 is 7,504 feet by 150 feet, and served by the full-length parallel Taxiway E. Runway 7-25 is 4,158 feet by 100 feet, and has a parallel taxiway, Taxiway A. In calm wind conditions, Runway 11-29 is primarily used by commercial aircraft and large general aviation aircraft, and Runway 7-25 is used by small general aviation aircraft involved in flight training. Additional crossfield taxiways, Taxiway C and Taxiway B, connect Runway 11-29 with the general aviation area on the north side of the field. An Airport diagram is shown in Figure 1.

Figure 1 Airport Diagram



Findings

Site 2 is the recommended location for the ATCT.

The SRM Panel identified necessary safety requirements shown below to mitigate the potential risks identified. A detailed listing of hazards for Sites 1, 2 and 3 can be found later in this document.

The tables below summarize the initial and predicted residual risks for the three candidate sites. Details for all of the sites can be found in the Preliminary Hazard Analysis in Appendix A.

Table 1 - CSA Initial Risk Ranking Results

	HIGH	MED	LOW
Site 1	0	**0**	1
Site 2	0	**0**	0
Site 3	0	**0**	2

Mitigation of the potential risks was determined to be unnecessary due to the Low hazard level, as detailed in Table 2 and Table 3 below.

Table 2 - Initial and Predicted Residual Risk Summary

Site #	Hazard Description	Initial Risk	Safety Requirement	Predicted Residual Risk
1	Inability to properly identify object/vehicle/aircraft/person at Runway 29 end	3D Low	Existing controls acceptable	3D Low
3	Obstructed view to Rwy 25 and Rwy 29 ends	4D Low	Tree removal/topping and existing controls acceptable	4D Low
3	Impaired visibility due to sun glare during late afternoon	5E Low	Existing controls acceptable	5E Low

GNV CONTROL TOWER SITING STUDY
COMPARATIVE SAFETY ASSESSMENT

Introduction

The FAA Air Traffic Safety Oversight, Order 1100.161, directs safety as summarized below:

> *"This Order implements the procedures that will be used within the FAA to conduct oversight of the Air Traffic Organization. The Order describes the application of the systems safety* approach *and identifies the responsibilities of the ATO and the Air Traffic Safety Oversight Service (AOV) regarding safety in the National Airspace System. This Order will ensure that we maintain the highest levels of safety standards within the FAA's Air Traffic Organization."*

The AOV, through 1100.161 established the requirements for ATO safety management system (SMS) in accordance with International Civil Aviation Organization (ICAO) Annex 11 to the Convention on International Civil Aviation, Air Traffic Services, and ICAO Document 4444 (ATM/501), Procedures for Air Navigation Services, Air Traffic Management. The ATO is also required to generate and maintain the SMS Manual.

A Comparative Safety Assessment (CSA) has been completed on the proposed replacement Federal Contract Tower Airport Traffic Control Tower (ATCT) Siting for the Gainesville Regional Airport (GNV). The purpose of conducting the CSA was to apply the Safety Risk Management (SRM) process defined in the FAA Safety Management System (SMS) Manual version 2.1, dated May 2008 to the ATCT Siting Process in order to make the GNV ATCT siting report compliant with the goals and objectives of the FAA SMS Manual. The CSA is a comparison of the relative risk among the three (3) most preferred sites as identified in the Gainesville Regional Airport ATCT Siting Study.

The CSA compares the three (3) sites using data supplied by the airport management and the airport's consulting firm, RS&H. RS&H compiled information in 2013 to complete the requirements of FAA Order 6480.4B *Airport Traffic Control Tower Siting Process*. The Preliminary Hazard List (PHL) was used to identify the hazards, and hazard analysis worksheets were used to document the severity of consequence and likelihood of occurrence to assess the risk. The hazards were originally identified using the PHL shown in FAA Order 6480.4B. The three (3) viable sites were evaluated against each of the system safety hazards identified in the Preliminary Hazard List. The hazards were compared using a Risk Matrix for relative hazard ranking. The CSA considers only hazards that may impact aviation safety.

The FAA Eastern Service Center, Planning & Requirements Group, Federal Contract Tower Program Implementation Manager and the ESC Quality Control Group assisted in establishing the Safety Risk Management Panel (SRMP) to oversee the safety analysis and ensure no new risks are introduced into the National Airspace System during the GNV ATCT siting. The GNV ATCT SRMP followed the SMS policy and Safety Risk Management Process when conducting their safety analysis.

The SRM process involves the following steps:

- System Description
- Hazard Identification
- Hazard Analysis and Assessment
- Hazard Tracking

This document describes how the SRM process was applied to the GNV ATCT siting hazards and summarizes the results from this process. It is organized to follow the SRM steps.

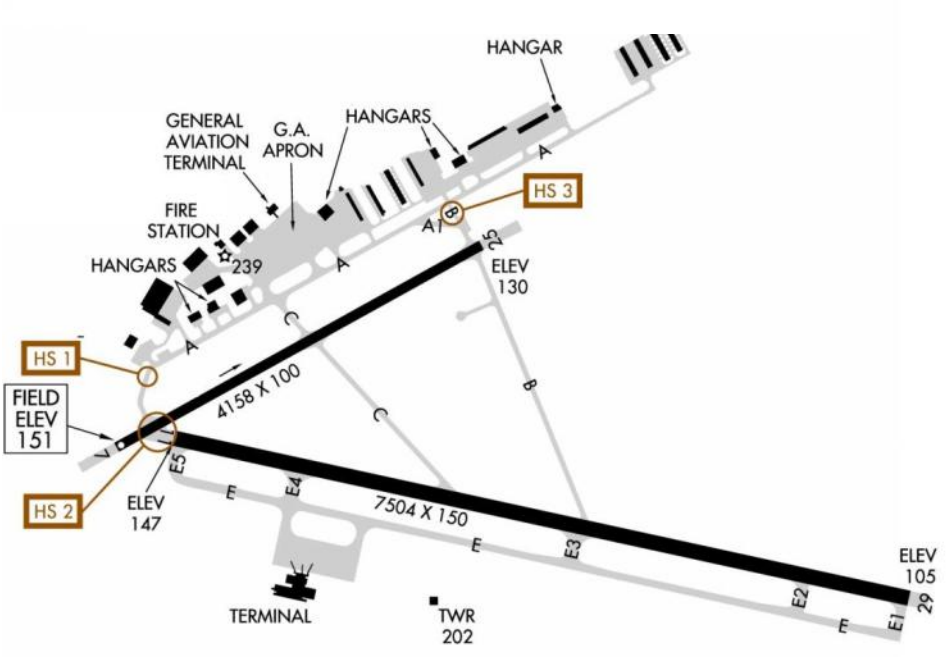
Section 1 – Current System / System Baseline

The Gainesville Regional Airport (GNV) is owned and operated by the Gainesville Alachua County Regional Airport Authority, Gainesville, Florida as a Part 139 Class I airport. The Airport occupies approximately 1,870 acres in Alachua County, Florida, five miles northeast of the central business district of Gainesville, Florida.

The proposed Airport Traffic Control Tower (ATCT) is intended to replace the existing facility. GNV has an operational Air Traffic Control Tower (ATCT) that was opened in the 1970s and is functionally obsolescent due to a controller eye height of only 25 feet above ground level (AGL). The existing facility does not meet current standards for Line of Sight Angle of Incidence. The existing ATCT is operated under the Federal Contract Tower program, and plans call for that arrangement to continue. The FAA's 2013 Terminal Area Forecast reports 77,256 operations and 160 based aircraft in 2011. Commercial air carrier and commuter operations accounted for 146,772 enplanements in 2011.

The current runway configuration includes a primary runway, Runway 11-29, and a crosswind runway, Runway 7-25. Runway 11-29 is 7,504 feet by 150 feet, and served by the full-length parallel Taxiway E. Runway 7-25 is 4,158 feet by 100 feet, and has a parallel taxiway, Taxiway A. In calm wind conditions, Runway 11-29 is primarily used by commercial aircraft and large general aviation aircraft, and Runway 7-25 is used by small general aviation aircraft involved in flight training. Additional crossfield taxiways, Taxiway C and Taxiway B, connect Runway 11-29 with the general aviation area on the north side of the field. An Airport diagram is shown in Figure 2.

Figure 2 Airport Diagram



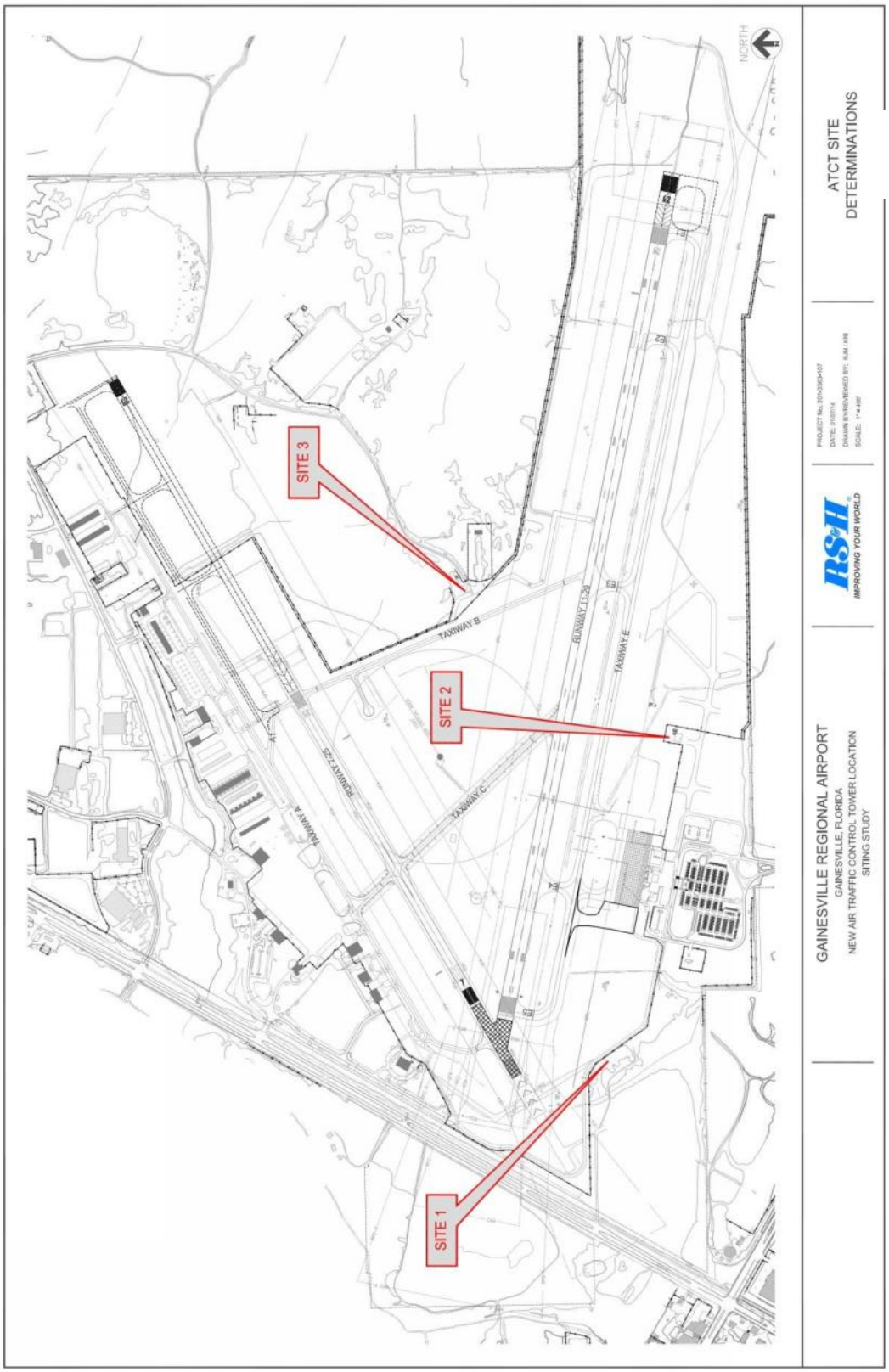
Section 2 – Proposed Change

Table 3 below summarizes the three alternative sites. Figure 3 on the following page identifies the location on the airport of the three (3) alternative sites on which a comparative safety assessment was conducted. The intent was to compare the three (3) sites against an identified set of system safety criteria.

Table 3 –Summary of Alternative Sites

Item Description	Site 1	Site 2	Site 3
Preferred Site	No	Yes	No
Eye Level	100 ft AGL, 250 ft MSL	98 ft AGL, 226 ft MSL	96 ft AGL, 214 ft MSL
Latitude / Longitude	29°-41'-16.2" N 82°-16'-56.2" W	29°-41'-09.9" N 82°-16'-22.7" W	29°-41'-29.5" N 82°-16'-06.6" W
ATCT Height (incl. antennas)	125 ft AGL, 275 ft MSL	123 ft AGL, 251 ft MSL	121 ft AGL, 239 ft MSL
Maximum Distance (to farthest point, Key Point, on all runways and taxiways)	7,927 ft (Taxiway at future north hangar complex)	6,125 ft (Taxiway at future north hangar complex)	4,439 ft (Existing Runway 7 end)
2-Point Lateral Discrimination			
Object Discrimination, Pass/Fail, Front View, Dodge Caravan (FAA ATCTVAT)	Pass Detection 97.0% Recognition 15.1%	Pass Detection 98.9% Recognition 32.7%	Pass Detection 99.7% Recognition 65.8%
Line of Sight Angle of Incidence	0.83°	0.80°	0.80°
ATCT Orientation Direction	NE	N	SW
Access to ATCT Site	Yes	Yes	Needs Improvement
Environmental Issues	No significant impacts	5.5 ac wetlands, no significant impacts	6.5 ac wetlands, no significant impacts
Potential Impacts to NAVAIDs	No significant impacts	No significant impacts	No significant impacts
TERPS Impacts	Departure Rwy 25 (secondary runway) extended Initial Climb Area 40:1 surface penetration. NEH: 185.	None	None
Part 77 Impacts	7: 1 Surface Penetrated Obstr. Ltg. Required.	7: 1 Surface Penetrated Obstr. Ltg. Required.	7: 1 Surface Penetrated Obstr. Ltg. Required.
Total Construction Cost Estimates (incl. ATC equipment)	$2,570,000	$2,780,000	$3,730,000
Safety Assessment Initial Risk Ranking	H M L 0 0 1	H M L 0 0 0	H M L 0 0 2
Safety Assessment Predicted Residual Risk Ranking	H M L 0 0 1	H M L 0 0 0	H M L 0 0 2

Figure 3 – Alternative ATCT Site Locations



Section 3 – Safety Risk Management Planning and Impacted Organizations

A GNV ATCT Safety Risk Management Panel (SRMP) was formed and met to develop this CSA to identify the potential hazards, access and analyze the associated risks, and determine existing and recommended safety requirements to mitigate or control the safety risk associated with the siting of the new GNV ATCT. An SMS briefing workshop was conducted with the panel members.

Table 4 - Comparative Safety Assessment Panel Members

Name	Agency/Company/Function
Richard Owen	FAA Orlando ADO
John Seliga	FAA P&R/FTC PIM
Paul Adjan	Gainesville Regional Airport
Grant Gregoire	FAA Program Implementation Specialist
Jim McKenna*	FAA QC Group, ESC, Facilitator
Shaun Blevins	Gainesville Regional Airport
Ted Lane	RVA Inc, FCT manager
Allan Penksa	Chief Executive Officer, Gainesville Regional Airport
Ken Berkey	FAA Terminal Requirements
Wayne Formby	FAA JAX ATCT
Ken Ibold*	RS&H
Matt Thomason	RS&H
Gary Logston	RS&H
Gordon Reynolds	Air Traffic Consulting Services

* SRM trained

Various preliminary planning meetings were held at the airport to discuss the project, the sites and processes required to implement the siting and SRMD. A Preliminary Siting Report was sent to the FCT PIM and the ESC QC. A meeting time and place was set for the SRMP. SRM participants were discussed and aligned for the panel meeting. Invited SRM panel members received a draft Siting Study at least one week prior to the panel meeting. All attendees concurred that the Alternate Process per FAA 6480.4B would suit this siting process as this is an existing Federal Contract tower.

Jim McKenna facilitated the SRMP with the assistance of Ken Ibold of RS&H. The attending Subject Matter Experts (SME) included representatives with backgrounds and expertise in air traffic, aviation planning, design and facilities. They were instructed to carefully analyze all hazards that could be possible in any scenario at the three sites. Together, they represented all organizations that may be impacted by the change.

Members of the panel received a thorough overview of the SRM hazard identification, evaluation and mitigation process. The change baseline was established and the hazard analysis took place. All three candidate sites were discussed extensively. The CSA worksheets were generated and are included in this document.

Section 4 – Assumptions

The assumptions associated with the ATCT CSA Siting Report are discussed below:

1 Any changes to the ATCT Siting Report for the GNV CSA SRMD will be made upon concurrence of the GNV Safety Risk Management Panel.
2 The CSA is not all-inclusive in that there may be unknown hazards within any operation or process.
3 The existing and recommended safety requirements will be implemented and verified.
4 Airport model was developed accurately based upon the data supplied by the airport and the FAA Airport Layout Plan.

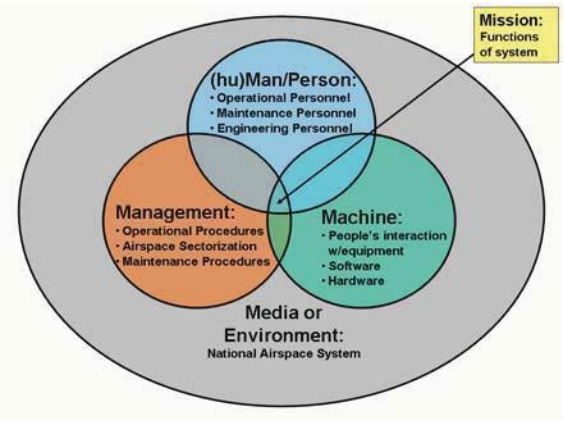
Section 5 – Phase 1: System Description

The ATCT is a complex structure of equipment and material designed to allow humans to interact with aircraft, vehicles, and personnel involved in the transportation of passengers and cargo from one location to another. This broad definition includes the physical attributes of the Airport Control Tower structure, electronic systems and sub-systems, and design features created to allow personnel to see, monitor, communicate with, and direct operations over the Gainesville Regional Airport property. There is a multitude of requirements for air traffic control personnel to see (visually and electronically), communicate with, observe (remotely or otherwise), direct, and control operations within the areas designed as the control (movement) area.

The GNV ATCT will control traffic visually, and via two-way VHF and UHF (as appropriate based on aircraft equipage) communication and visually (with a light gun); the tower is an IFR (instrument flight rules) ATCT utilizing a STARS radar display fed from the Jacksonville Terminal Radar Area Control facility.

This ATCT is needed to enhance the airport's safety level by providing separation between aircraft utilizing GNV and surrounding airports and by controlling ground traffic at GNV. The scope of this effort is a CSA of the three (3) viable ATCT sites and documents the process and methodology by which the recommended site was determined.

5 M Model



- Man – ATC Specialists, Pilots, Flying Public, User Community, Airport Administration, Communications Technicians
- Mission –To provide new and improved safe and efficient air traffic control tower to meet current and future demands.
- Media – NAS / ATCT, Gainesville Regional Airport active movement areas.
- Management – Joint Order JO 7210.3W, Facility Operation and Administration, FAA Order 7110.65T, Air Traffic Control, and Joint Order JO 7110.10T, Flight Services, letters and memoranda of agreement, and the flight procedures that terminate with the ATCT, NASWATCH, Gainesville Regional Airport, guidance through FAA policy, Orders and

Directives, TERPS Analysis, FAA Order 6480.4B, SMS Manual V2.1, AC 150/5300-13A, AC 90-93A.

- Machine – Airport Traffic Control Tower, communications equipment, radar displays, voice switch, light gun, equipment placement and site specific equipment.

Section 6 – Phase 2: Identified Hazards

The GNV ATCT siting hazards were identified using an experienced team of air traffic control consultants and SMS safety experts. This team utilized the ATCT Siting Preliminary Hazard List as identified in FAA Order 6480.4B. This potential hazard list is identified below in Table 5. All potential hazards were analyzed and discussed. Many potential hazards on the PHL were found to have no safety risk, and worksheets for these PHL hazards are not included. PHL items highlighted in yellow are included in the worksheets and discussed in this CSA.

Table 5 -ATCT Preliminary Hazard List

Hazard	Site 1	Site 2	Site 3
Potential interference with navigation equipment both planned and existing	None identified	None identified	None identified
Potential interference with communication equipment both planned and existing	None identified	None identified	None identified
Potential interference with existing and or proposed surveillance equipment	None identified	None identified	None identified
TERPS surfaces penetrations	None identified	None identified	None identified
Part 77 surfaces penetrations	7:1 Surface	7:1 Surface	7:1 Surface
Relevant airport design standards violated	None identified	None identified	None identified
Direction of view			
North	None identified	None identified	None identified
East	None identified	None identified	None identified
West	None identified	None identified	None identified
South	None identified	None identified	None identified
Line of sight/angle of view			
Down	None identified	None identified	None identified
Visual Performance			
Unobstructed view	None identified	None identified	Minor Extremely Remote Low Risk
Object discrimination	Major Extremely Remote Low Risk	None identified	None identified
Line of Sight (LOS) Angle of Incidence	None	None	None

	identified	identified	identified
Lighting and Atmospheric Limitations – Daylight			
Sun Angle	None identified	None identified	Minimal Extremely Improbable Low Risk
Sun Glare	None identified	None identified	None identified
Sun Shadows	None identified	None identified	None identified
Thermal Distortion	None identified	None identified	None identified
Light changes/contrast eye adaptation	None identified	None identified	None identified
Lighting and Atmospheric Limitations – Night			
Dawn	None identified	None identified	None identified
Dusk	None identified	None identified	None identified
Night	None identified	None identified	None identified
Artificial Lighting			
Airport lighting equipment outages	None identified	None identified	None identified
Lighting shadows	None identified	None identified	None identified
Airport lighting	None identified	None identified	None identified
Construction lighting	None identified	None identified	None identified
Residential/industrial lighting	None identified	None identified	None identified
Background clutter	None identified	None identified	None identified
Naturally Occurring Atmospheric Conditions			
Dust	None identified	None identified	None identified
Ash	None identified	None identified	None identified
Smoke	None identified	None identified	None identified
Haze	None identified	None identified	None identified
Fog	None identified	None identified	None identified
Rain	None	None	None

	identified	identified	identified
Sleet	None identified	None identified	None identified
Snow	None identified	None identified	None identified
Sun glare off snow	None identified	None identified	None identified
Industrial/municipal discharges			
Dust	None identified	None identified	None identified
Ash	None identified	None identified	None identified
Smoke	None identified	None identified	None identified
Access to proposed site does not cross existing ground/air traffic patterns	None identified	None identified	None identified
Interior physical barriers			
Position of ATC in Tower Cab	None identified	None identified	None identified
Position of Tower Cab equipment	None identified	None identified	None identified
Position of Tower Cab mullions	None identified	None identified	None identified
Exterior physical barriers			
Construction equipment	None identified	None identified	None identified
Proposed new structures and Airport expansion (ALP)	None identified	None identified	None identified
Existing ATCT	None identified	None identified	None identified

Section 7 – Phase 3 & 4: Risks Analysis & Risks Assessed

Hazard Identification

The SRMP discussed hazard identification using the ATCT Siting PHL. The SRMP validated the ATCT Siting PHL. Several items were identified for mitigation, and that mitigation was stipulated at the beginning of the SRMP:

1) Obstruction lighting on the tower was assumed for all sites as set forth in FAA Advisory Circular 70/7460-1K, *Obstruction Marking and Lighting*, Chapters 4, 5, and 12 (red lights).
2) If Runway 7-25 is extended in the future in accordance with the Airport Layout Plan, all tree removal/topping required to ensure line of sight between the tower and the Runway 25 end would be included in the runway extension project.

Hazard Analysis

Using the Worksheets identified below in Figure 4, the SRMP held a discussion on each of the identified hazards and conducted a Preliminary Hazard Analysis (PHA) on three (3) viable locations for the new ATCT. The purpose of this discussion was to examine the hazard causes and to determine the worst credible effect (severity of consequence) from the hazards on the PHL, and to determine a qualitative

likelihood of occurrence based on the expertise of the SRMP and all available data. The PHA is shown in Figure 6 on page 19.

Risk Determination

Risk is the composite of predicted severity and likelihood of the potential effect of a hazard in the identified system state. The CSA relied upon the input from the SRMP; the final likelihood determinations are qualitative. The ATCT CSA uses criteria identified in the FAA SMS Manual for severity of consequence and likelihood of occurrence. These tables are shown on the following pages.

Table 6 - Severity Definitions

Effect On: ↓	Hazard Severity Classification				
	Minimal	Minor	Major	Hazardous	Catastrophic
	5	4	3	2	1
ATC Services	Conditions resulting in a minimal reduction in ATC services, or a loss of separation resulting in a Category D Runway Incursion (RI)[1], Operational Deviation (OD)[2], or Proximity Event (PE)	Conditions resulting in a slight reduction in ATC services, or a loss of separation resulting in a Category C RI[1] or Operational Error (OE)[2]	Conditions resulting in a partial loss of ATC services, or a loss of separation resulting in a Category B RI[1] or OE[2]	Conditions resulting in a total loss of ATC services, (ATC Zero) or a loss of separation resulting in a Category A RI[1] or OE[2]	Conditions resulting in a collision between aircraft, obstacles or terrain
Flight Crew	– Flightcrew receives TCAS Traffic Advisory (TA) informing of nearby traffic, or, – PD where loss of airborne separation falls within the same parameters of a Category D OE[2] or PE – Minimal effect on operation of aircraft	– Potential for Pilot Deviation (PD) due to TCAS Preventive Resolution Advisory (PRA) advising crew not to deviate from present vertical profile or, – PD where loss of airborne separation falls within the same parameters of Category C (OE)[2] *or* – Reduction of functional capability of aircraft but does not impact overall safety (e.g., normal procedures as per AFM)	– PD due to response to TCAS Corrective Resolution Advisory (CRA) issued advising crew to take vertical action to avoid developing conflict with traffic or, – PD where loss of airborne separation falls within the same parameters of a Category B OE[2] or, – Reduction in safety margin or functional capability of the aircraft, requiring crew to follow abnormal procedures as per AFM	– Near mid-air collision (NMAC) results due to proximity of less than 500 feet from another aircraft or a report is filed by pilot or flight crew member that a collision hazard existed between two or more aircraft – Reduction in safety margin and functional capability of the aircraft requiring crew to follow emergency procedures as per AFM	– Conditions resulting in a mid-air collision (MAC) or impact with obstacle or terrain resulting in hull loss, multiple fatalities, or fatal injury

1 – As defined in the 2005 Runway Safety Report
2 – As defined in FAA Order 7210.56, *Air Traffic Quality Assurance*, and Notice JO 7210.663, *Operational Error Reporting, Investigation, and Severity Policies*
3 – Minor Injury - Any injury that is neither fatal nor serious.
4 – Serious Injury - Any injury which: (1) requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; (2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) involves any internal organ; or (5) involves second- or third-degree burns, or any burns affecting more than 5 percent of the body surface.
5 – Fatal Injury - Any injury that results in death within 30 days of the accident.

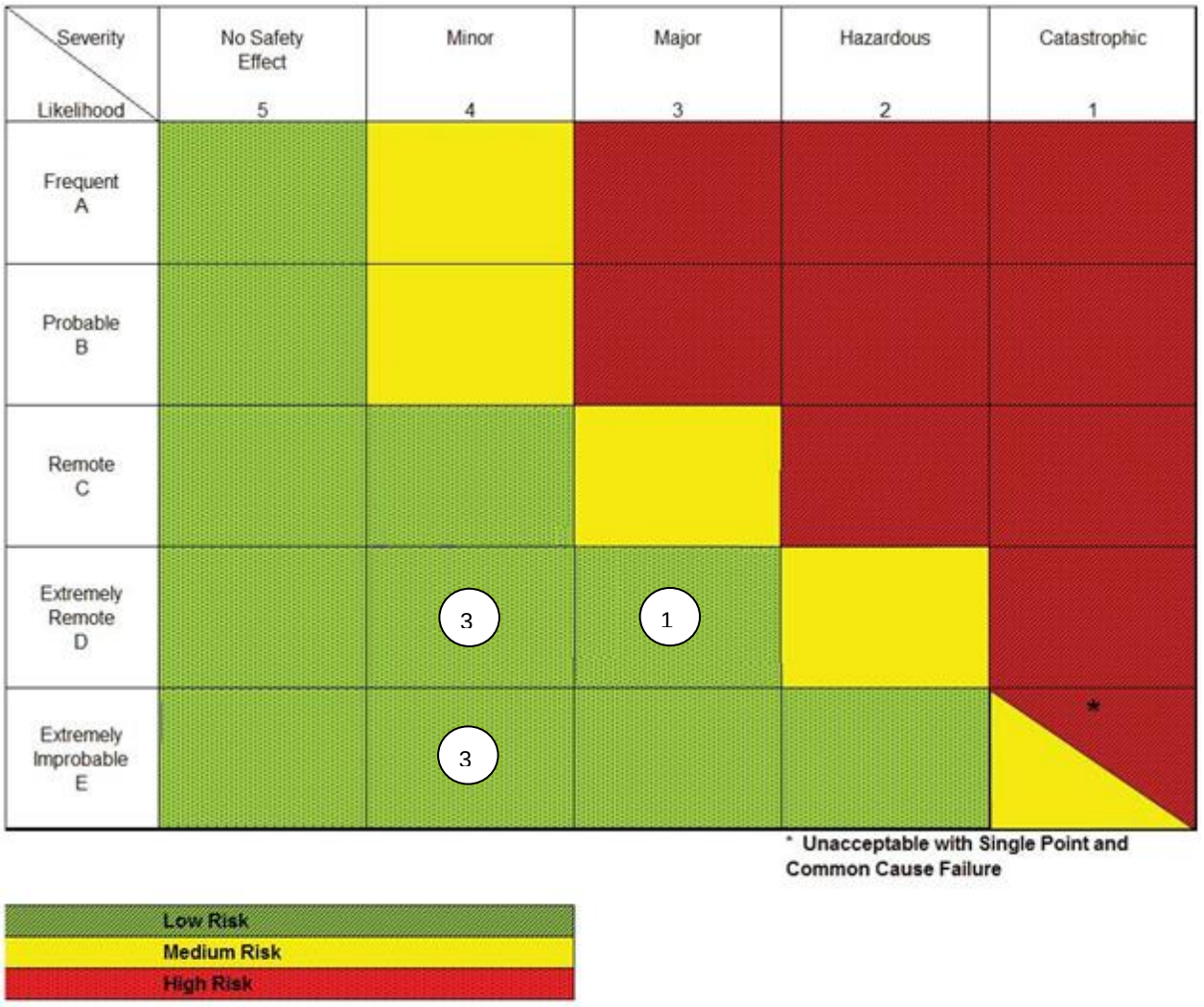
Table 7 – Likelihood Definitions

	NAS Systems & ATC Operational	NAS Systems		ATC Operational		Flight Procedures
	Quantitative	Qualitative				
		Individual Item/System	ATC Service NAS Level System	Per Facility	NAS-wide	
Frequent A	Probability of occurrence per operation/operational hour is equal to or greater than $1x10^{-3}$	Expected to occur about once every 3 months for an item	Continuously experienced in the system	Expected to occur more than once per week	Expected to occur more than every 1-2 days	Probability of occurrence per operation/operational hour is equal to or greater than $1x10^{-5}$
Probable B	Probability of occurrence per operation/operational hour is less than $1x10^{-3}$, but equal to or greater than $1x10^{-5}$	Expected to occur about once per year for an item	Expected to occur frequently in the system	Expected to occur about once every month	Expected to occur about several times per month	
Remote C	Probability of occurrence per operation/operational hour is less than or equal to $1x10^{-5}$ but equal to or greater than $1x10^{-7}$	Expected to occur several times in the life cycle of an item	Expected to occur numerous times in system life cycle	Expected to occur about once every year	Expected to occur about once every few months	Probability of occurrence per operation/operational hour is less than or equal to $1x10^{-5}$ but equal to or greater than $1x10^{-7}$
Extremely Remote D	Probability of occurrence per operation/operational hour is less than or equal to $1x10^{-7}$ but equal to or greater than $1x10^{-9}$	Unlikely to occur, but possible in an item's life cycle	Expected to occur several times in the system life cycle	Expected to occur about once every 10-100 years	Expected to occur about once every 3 years	Probability of occurrence per operation/operational hour is less than or equal to $1x10^{-7}$ but equal to or greater than $1x10^{-9}$
Extremely Improbable E	Probability of occurrence per operation/operational hour is less than $1x10^{-9}$	So unlikely that it can be assumed that it will not occur in an item's life cycle	Unlikely to occur, but possible in system life cycle	Expected to occur less than once every 100 years	Expected to occur less than once every 30 years	Probability of occurrence per operation/operational hour is less than $1x10^{-9}$

The SMS Manual and ATO-Terminal Policy require that medium and high hazards be tracked to closure and that all existing and recommended safety requirements are validated and verified prior to commissioning the facility. Safety issues shall be considered throughout the design and implementation of the ATCT.

The ATCT CSA Siting Report uses criteria identified in the FAA SMS Manual for both severity of consequence and likelihood of occurrence. These criteria are listed in the FAA SMS Manual. Figure 4 below and Figure 5 on the following pages depict both the initial risks and the predicted residual risks for the three (3) sites at Gainesville Regional Airport.

Figure 4 – GNV Initial Risk Matrix



Section 8 – Phase 5: Treatment of Risks / Mitigation of Hazards

Risk Treatment

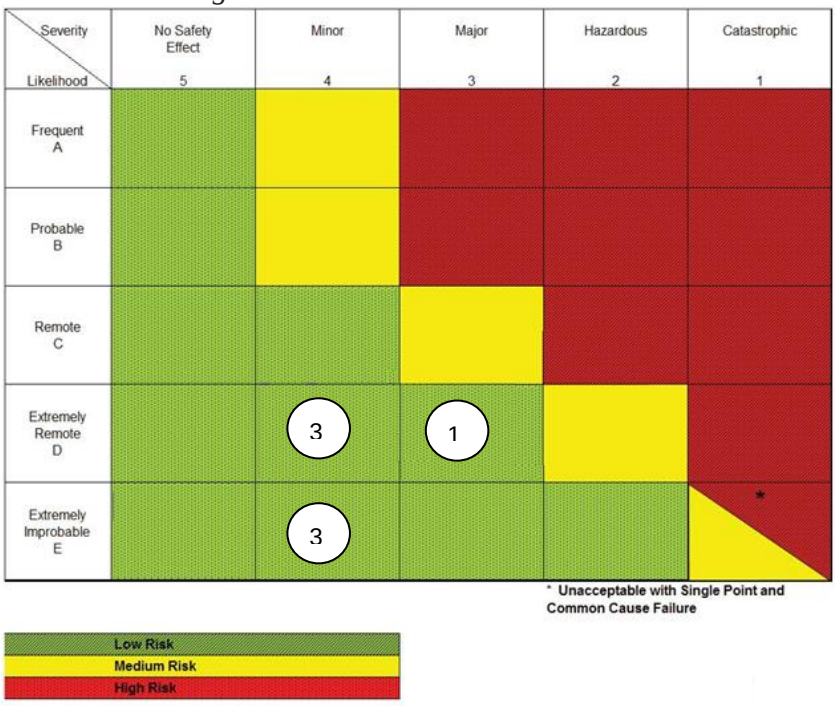
For each hazard, the SRMP identified existing and recommended safety requirements that mitigate or control the hazards. Safety requirements were developed from the hazard mitigations of all the GNV ATCT risks utilizing the Safety Order of Precedence in the SMS Manual. These mitigations reduced or maintain the hazard's risk to an acceptable level.

Table 8 – Gainesville Regional Airport Risk Summary describes the most significant risks associated with the candidate sites for the GNV Replacement ATCT. The initial risk describes a hazard's risk level prior to any mitigation. The predicted residual risk describes the risk remaining after all controls and mitigations have been implemented and are considered verified. The resulting residual risk is shown in Figure 5.

Table 8 – Gainesville Regional Airport Risk Summary

Site #	Hazard Description	Initial Risk	Safety Requirement	Predicted Residual Risk
1	Inability to properly identify object/vehicle/aircraft/person at Runway 29 end	3D Low	Existing controls acceptable	3D Low
3	Obstructed view to Runway 25 and Runway 29 ends	4D Low	Existing controls acceptable	4D Low
3	Impaired visibility due to sun glare	5E Low	Existing controls acceptable	5E Low

Figure 5 – GNV Residual Risk Matrix



Section 9 – Tracking and Monitoring of Hazards

AJT-T requires that all hazards be entered into the FAA's Hazard Tracking System (HTS) and that all high and medium hazards be tracked until mitigations are verified. This document identifies only low hazards; therefore there is no tracking requirement.

The Quality Control Group from the Eastern Service Center will enter all hazards into the Hazard Tracking System. Responsibility for data entry has been assigned to James McKenna, Contract Support, Quality Control Group, (404) 305-7039.

Figure 6 – Preliminary Hazard Worksheet

Hazard #	Hazard Description	Causes	System state	Existing Controls or Requirements	Possible Effect	Severity/ Rationale	Likelihood/ Rationale	Initial Current Risk	Recommended Safety Requirements	Predicted Residual Risk
Site 1										
1	Inability to properly identify object/vehicle/aircraft/person at Runway 29 end	Distance	During hours of Tower operation, Runway 29 in use	Binoculars, radio communications, access control, signage, PIREP, wigwag lights, add as HS on airport diagram	Runway incursion (Cat B)	3 Major	D Extremely Remote	Low 3D		Low 3D
Site 3										
1	Obstructed view to Rwy 25 and Rwy 29 ends	Growth of trees	During hours of Tower operation	Tree removal/trimming, radio communications, access control, signage, PIREP, wigwag lights, NOTAM	Runway incursion (Cat C)	4 Minor	D Extremely Remote	Low 4D		Low 4D
2	Impaired visibility	Sun glare due to to west view to runway 11 and runway 7 ends	Afternoon/sunset	shades, sunglasses	Runway incursion (Cat D)	5 Minimal	E Extremely improbable	Low 5E		Low 5E

Panoramic Photographs

Figure 7 – Site 1 Panoramic Photos

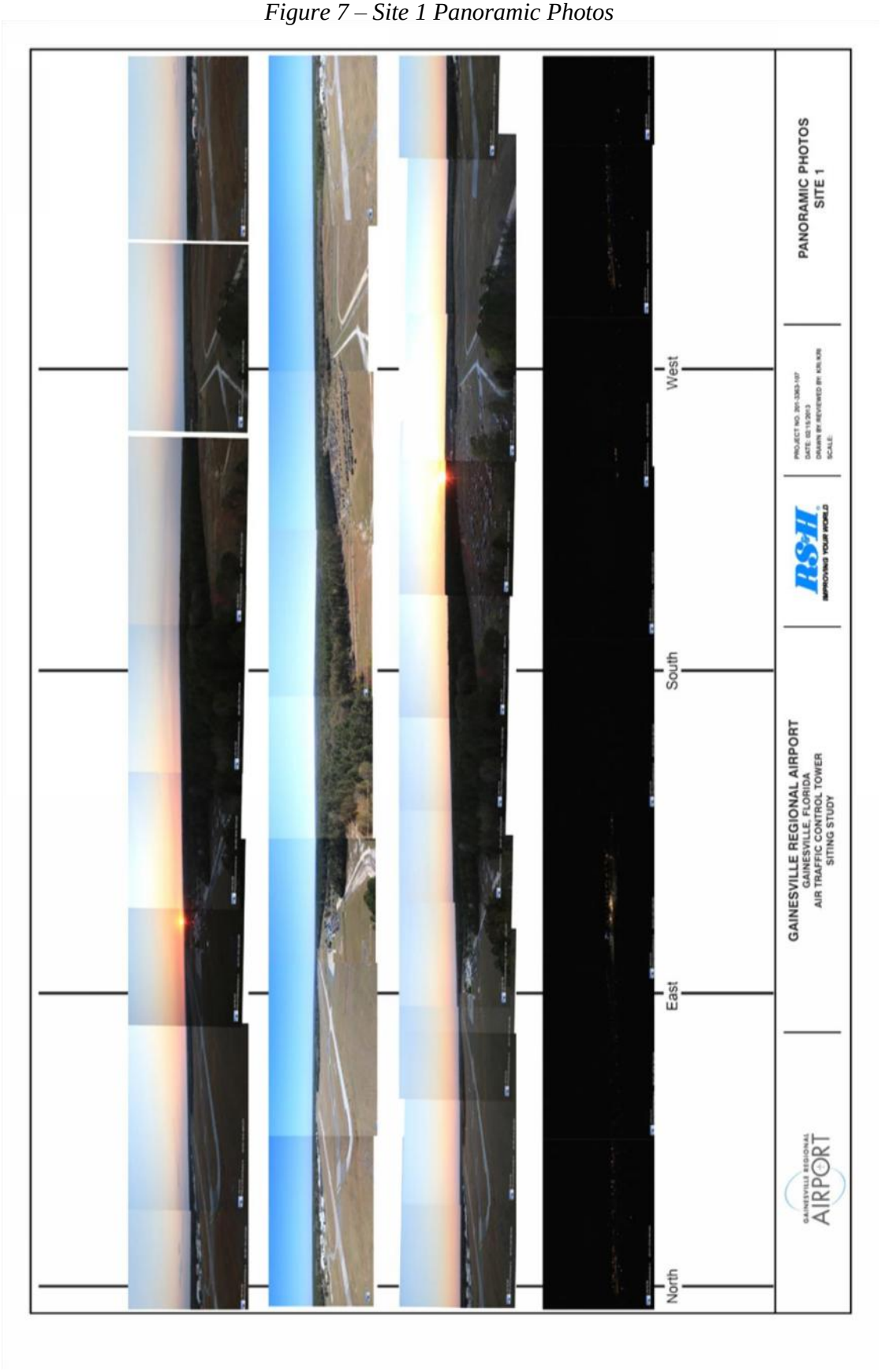


Figure 8 – Site 2 Panoramic Photos

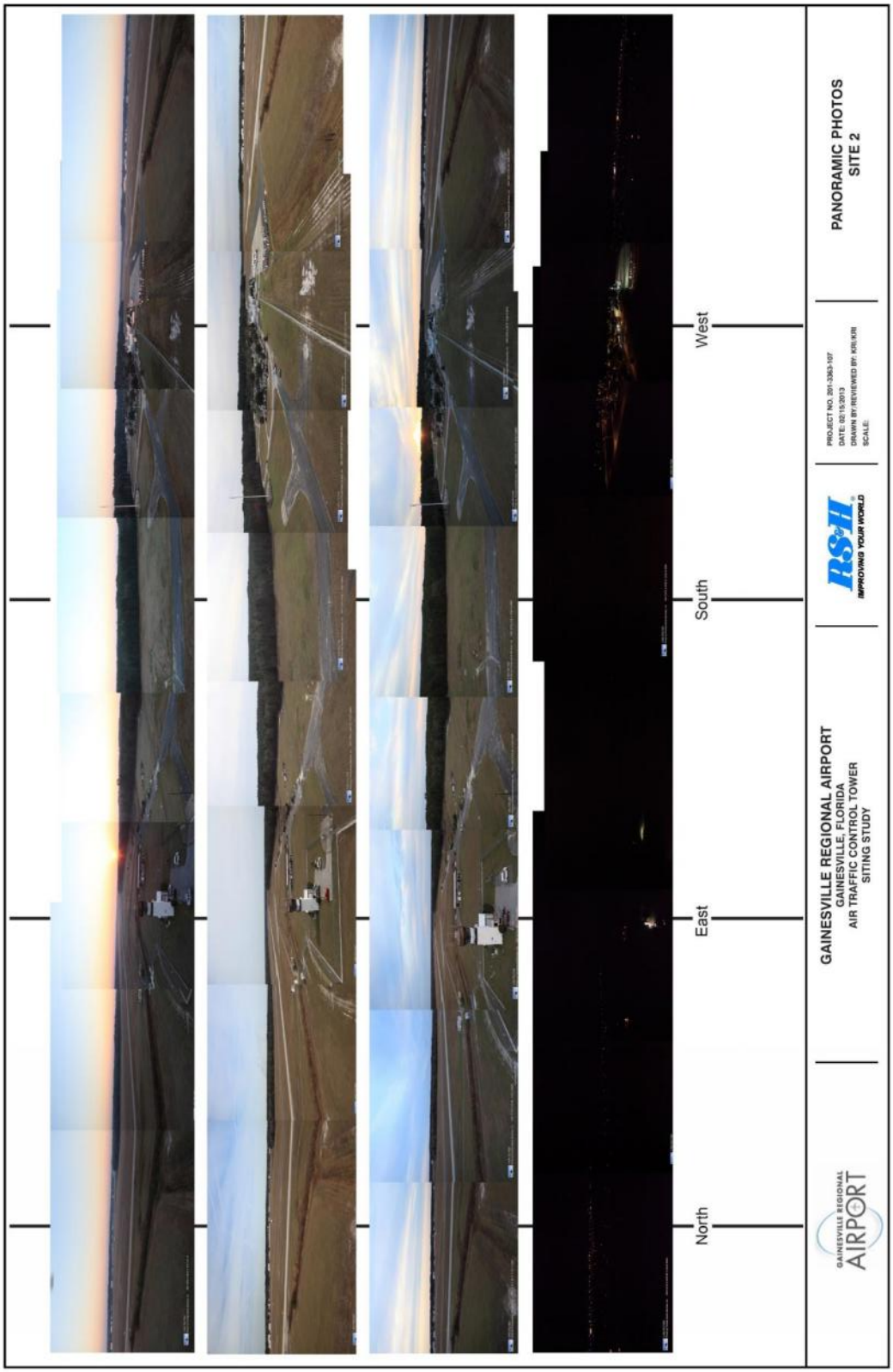
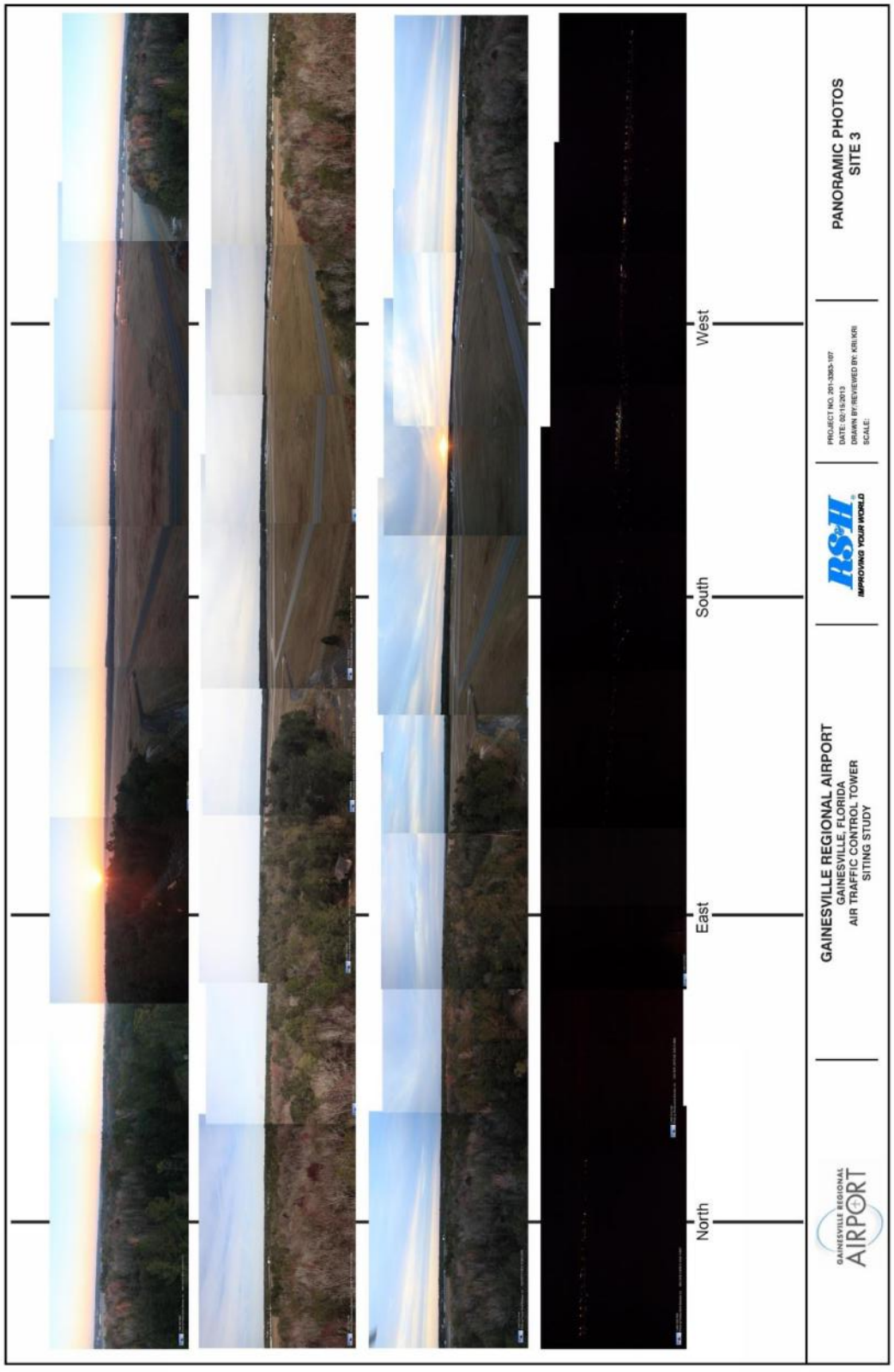


Figure 9 – Site 3 Panoramic Photos



Line of Sight Study

Figure 10 – Site 1 Line of Sight Study Site Plan

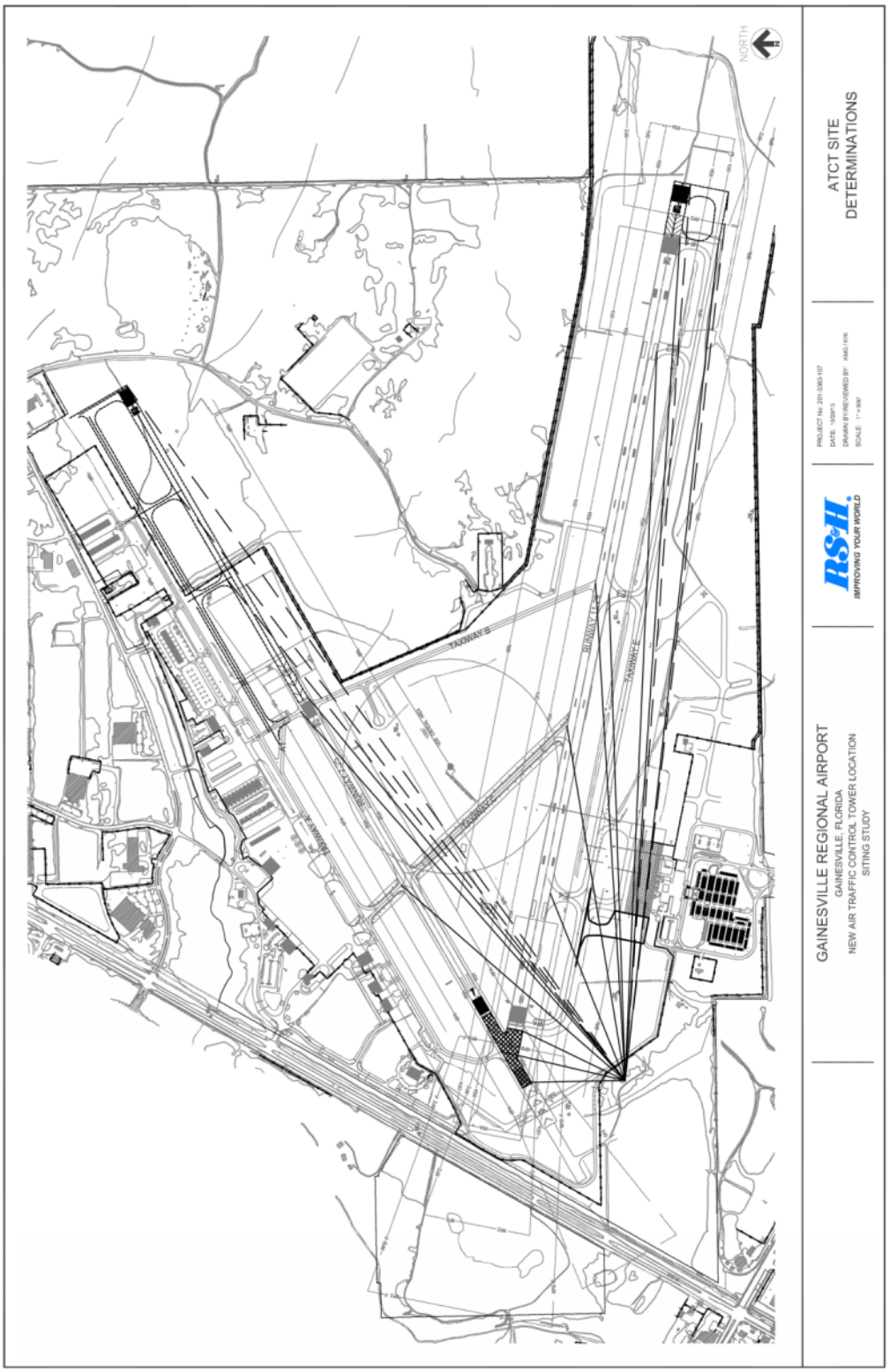


Figure 11 – Site 2 Line of Sight Study Site Plan

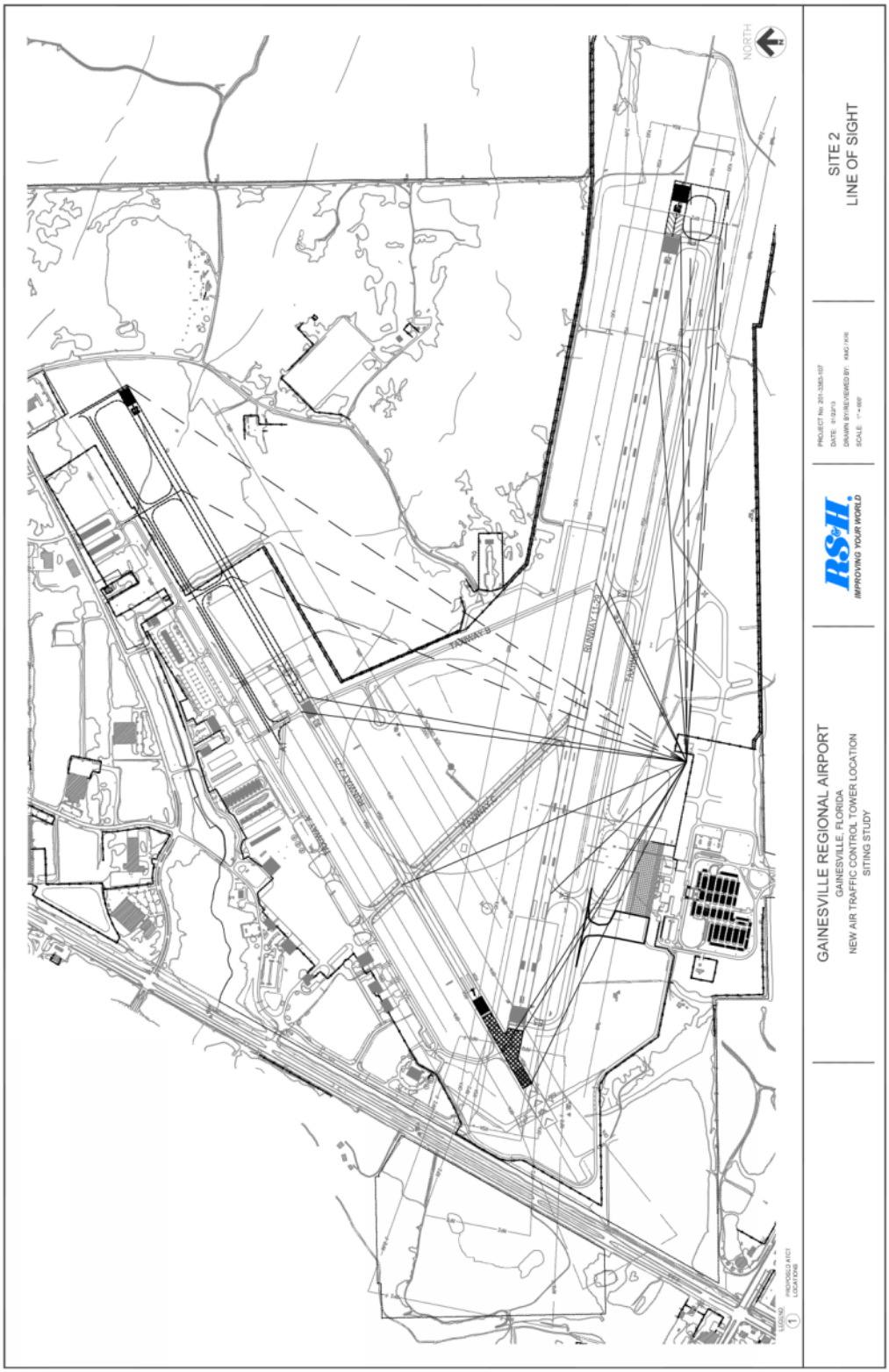
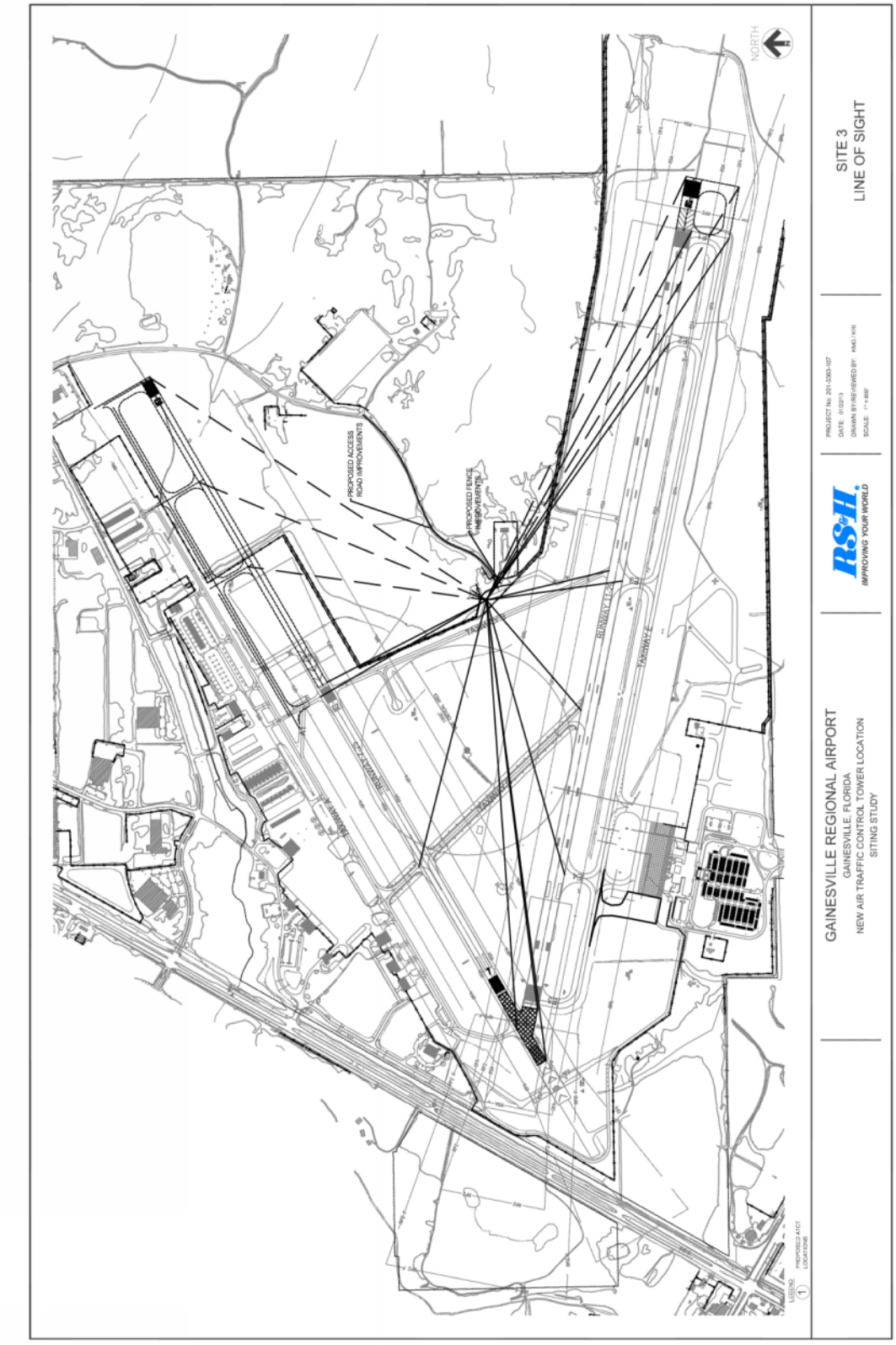


Figure 12 – Site 3 Line of Sight Study Site Plan



Interior Physical Barriers Study

Figure 13 – Site 1 Interior Physical Barriers Site Plan

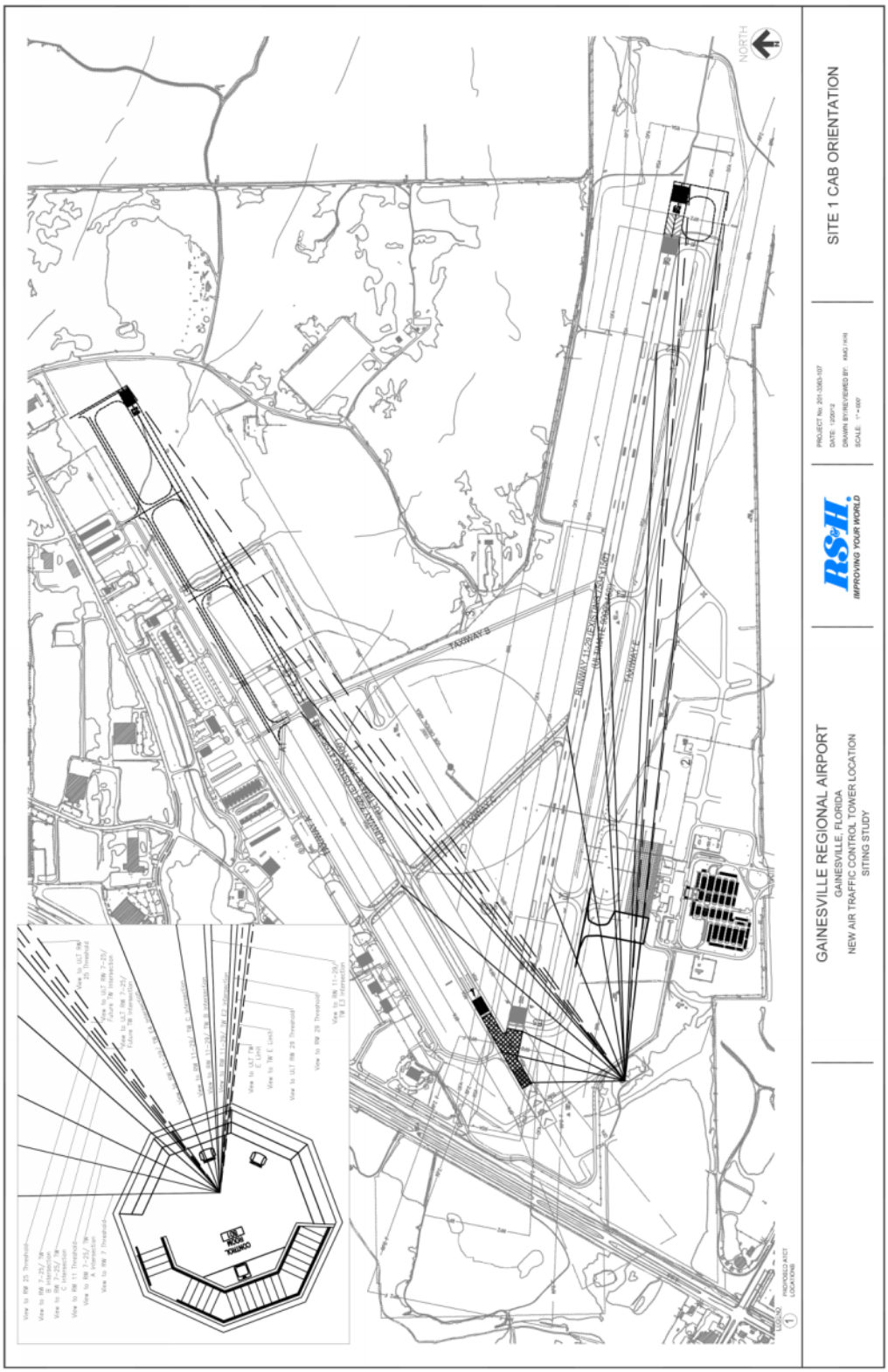


Figure 14 – Site 2 Interior Physical Barriers Site Plan

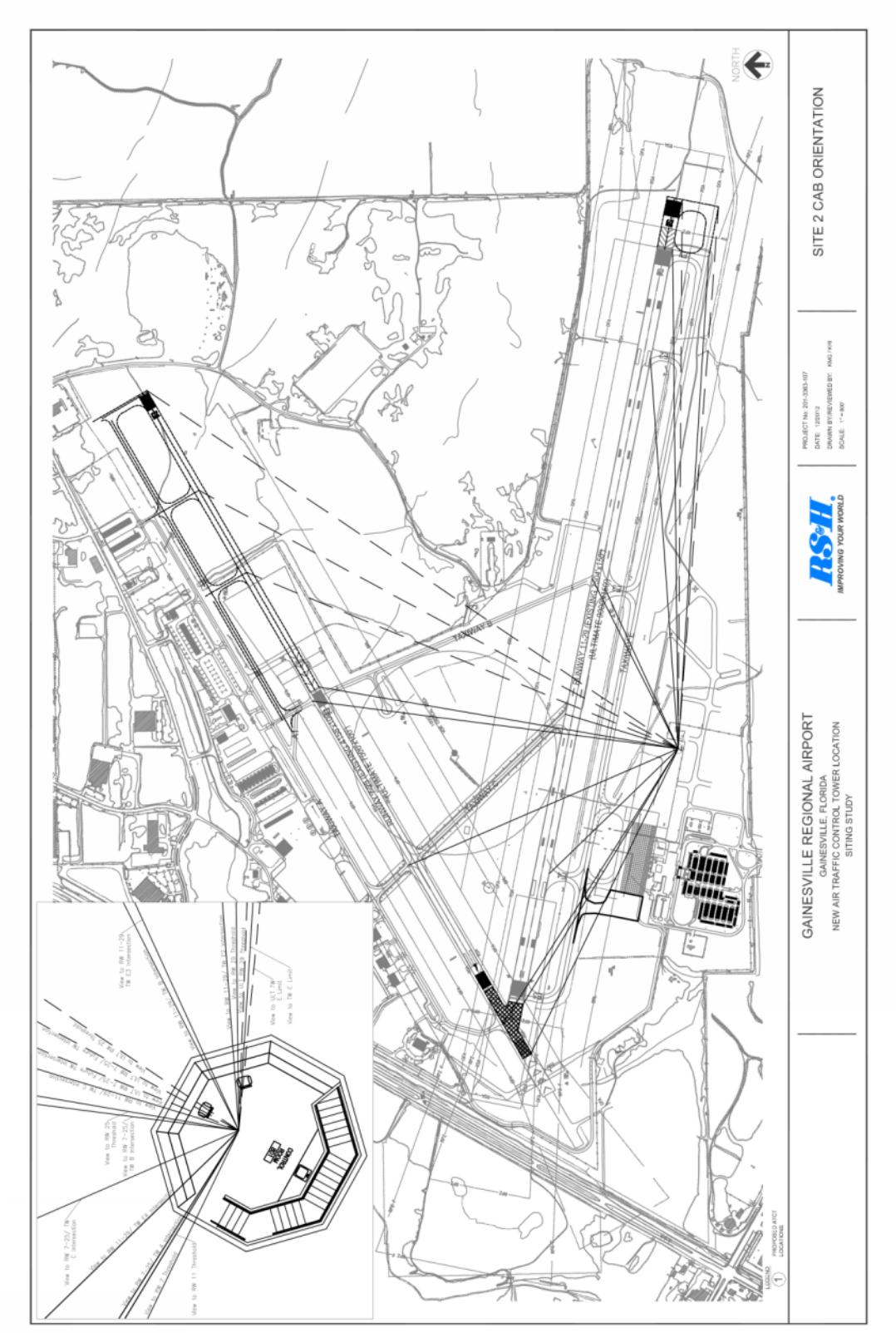
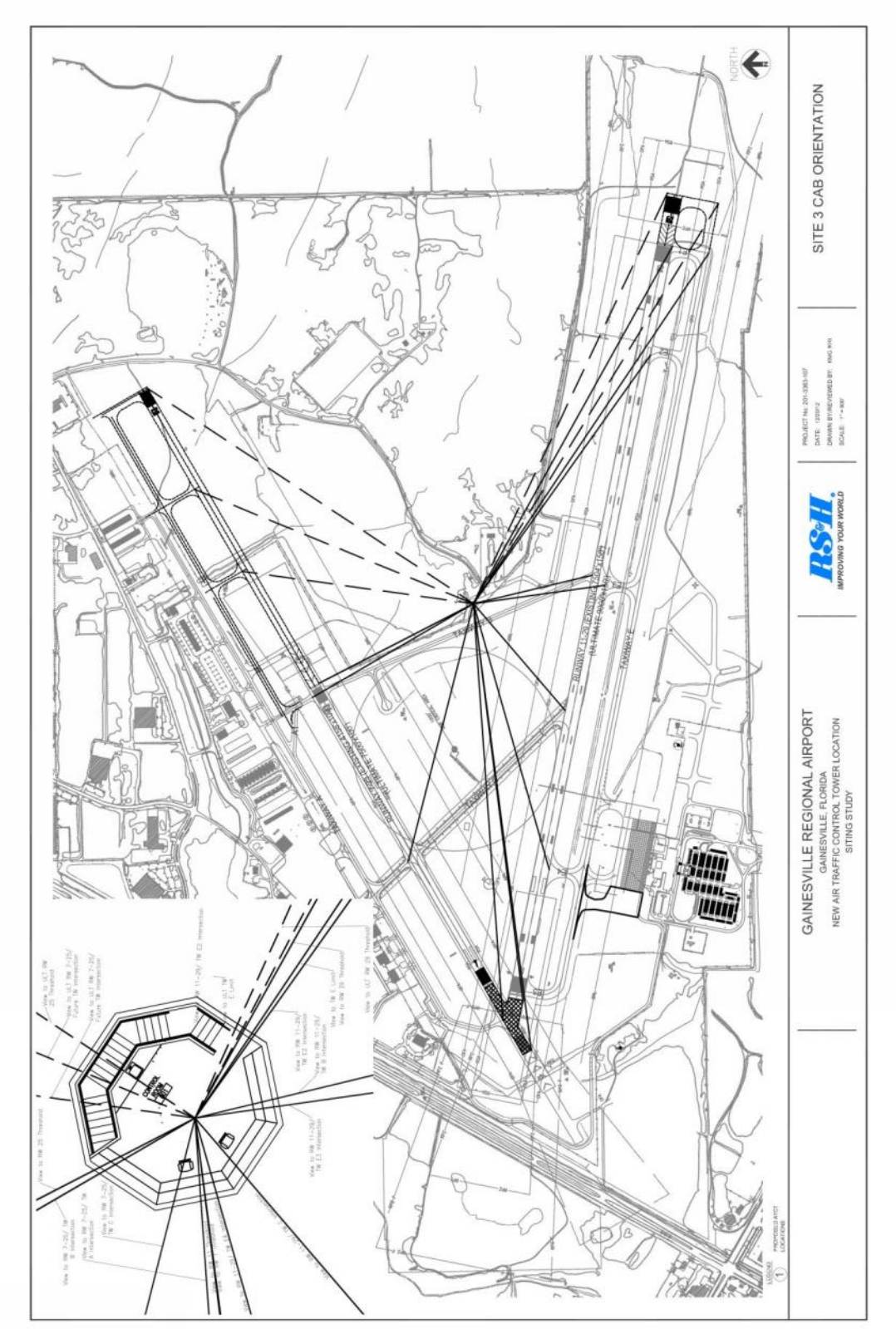


Figure 15 – Site 3 Interior Physical Barriers Site Plan



Acronyms

ADO – Airports District Office
AGL – Above Ground Level
AOV – Office of Air Traffic Oversight
ATC – Air Traffic Control
ATCS – Air Traffic Control Specialist
ATCT – Airport Traffic Control Tower
ATO – Air Traffic Organization
AVS – Aviation Safety Organization
CAT – Category
DBRITE – Digital Brite Radar Indicator Terminal Equipment
FAA – Federal Aviation Administration
FPO – Flight Procedures Office
GNV – Gainesville Regional Airport
GPS – Global Positioning System
HIRL – High Intensity Runway Lights
HTS – Hazard Tracking System
ILS – Instrument Landing System
IFR – Instrument Flight Rules
LOS – Line of Sight
MALSR - Medium Intensity Approach Lighting System with Runway Alignment Identifier Lights
NAS – National Airspace System
NASWATCH – Airway Facilities Radio Frequency Screening Tool
NAV – Navigation
PAPI – Precision Approach Path Indicator
PHA – Preliminary Hazard Analysis
PHL – Preliminary Hazard List
REIL – Runway End Identifier Lights
RVR – Runway Visual Range
RWY – Runway
SME – Subject Matter Expert
SMS – Safety Management System
SRM – Safety Risk Management
SRMP – Safety Risk Management Panel
SSMP – System Safety Management Plan
TERPS – Terminal Instrument Procedures
TWY - Taxiway
VFR – Visual Flight Rules

ATCT Siting Resources

FAA Order 6480.4B, Airport Traffic Control Tower Siting Criteria

TERPS Analysis

NASWATCH Analysis

Washington Airports District Office

Gainesville Regional Airport Preliminary ATCT Siting Report

Visibility Siting Requirements Human Factors Analyses

3DAAP Shadow Study

Google Maps

Wikipedia

APPENDIX F
PRELIMINARY HAZARD ASSESSMENT

Figure 6 – Preliminary Hazard Worksheet

Hazard #	Hazard Description	Causes	System state	Existing Controls or Requirements	Possible Effect	Severity/ Rationale	Likelihood/ Rationale	Initial Current Risk	Recommended Safety Requirements	Predicted Residual Risk
Site 1										
1	Inability to properly identify object/vehicle/aircraft/person at Runway 29 end	Distance	During hours of Tower operation, Runway 29 in use	Binoculars, radio communications, access control, signage, PIREP, wigwag lights, add as HS on airport diagram	Runway incursion (Cat B)	3 Major	D Extremely Remote	Low 3D		Low 3D
Site 3										
1	Obstructed view to Rwy 25 and Rwy 29 ends	Growth of trees	During hours of Tower operation	Tree removal/trimming, radio communications, access control, signage, PIREP, wigwag lights, NOTAM	Runway incursion (Cat C)	4 Minor	D Extremely Remote	Low 4D		Low 4D
2	Impaired visibility	Sun glare due to to west view to runway 11 and runway 7 ends	Afternoon/sunset	shades, sunglasses	Runway incursion (Cat D)	5 Minimal	E Extremely improbable	Low 5E		Low 5E

APPENDIX G
FORM 7460-1

Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - On Airport

Overview

Study (ASN): 2012-ASO-2029-NRA
Prior Study:
Status: Determined

Received Date: 12/05/2012
Entered Date: 12/05/2012
Completion Date: 04/18/2013
Map: View Map

Sponsor Information

Sponsor: Gainesville Regional Airport
Attention Of: Allan Penksa
Address: 3880 NE 39th Avenue
Address2: Suite A
City: Gainesville
State: FL
Postal Code: 32609
Country: US
Phone: 352-373-0249
Fax:

Sponsor's Representative Information

Representative: RS&H
Attention Of: Matt Thomason
Address: 10748 Deerwood Park Blvd South
Address2:
City: Jacksonville
State: FL
Postal Code: 32256
Country: US
Phone: 904-256-2206
Fax:

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
if Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

Case Information

Component Type: BUILDINGS
Development Type: BUILDINGS - Miscellaneous
Other Desc: Proposed ATCT
Prior Study:
Date Determined: 04/18/2013
Letters: 04/18/2013 OBJ746

Structure Details

Nearest State: FL
Loc ID: GNV
Airport: GAINESVILLE RGNL
City: GAINESVILLE
Latitude: 29-41-16.24 N
Longitude: 82-16-56.2 W
Horizontal Datum: NAD83
Site Elevation (SE): 150 (nearest foot)
Structure Height (AGL): 125 (nearest foot)

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Describe/Remarks

Proposed ATCT Site 1: Gainesville Regional Airport (GNV) proposes to site, design, and construct an Air Traffic Control Tower (ATCT) suitable for a Part 139 Class I Airport. This proposed ATCT will replace the existing ATCT facility at GNV. Intended design is a control cab on top of a functional shaft. Site 1 is located at Latitude 29° 41' 16.24" N; Longitude 82° 16' 56.20" W. Site ground elevation is 150 feet MSL. Observer eye height is 100 feet AGL; Structure height is 110 feet AGL; Overall tower height including a lightning rod and antennas is 125 feet AGL. All heights specified are for planning purposes only.

Specific Frequencies

Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - On Airport

Overview

Study (ASN): 2012-ASO-2030-NRA
Prior Study:
Status: Determined

Received Date: 12/05/2012
Entered Date: 12/05/2012
Completion Date: 04/22/2013
Map: View Map

Sponsor Information

Sponsor: Gainesville Regional Airport
Attention Of: Allan Penksa
Address: 3880 NE 39th Avenue
Address2: Suite A
City: Gainesville
State: FL
Postal Code: 32609
Country: US
Phone: 352-373-0249
Fax:

Sponsor's Representative Information

Representative: RS&H
Attention Of: Matt Thomason
Address: 10748 Deerwood Park Blvd South
Address2:
City: Jacksonville
State: FL
Postal Code: 32256
Country: US
Phone: 904-256-2206
Fax:

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
if Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

Case Information

Component Type: BUILDINGS
Development Type: BUILDINGS - Miscellaneous
Other Desc: Proposed ATCT
Prior Study:
Date Determined: 04/22/2013
Letters: 04/22/2013 NO7460

Structure Details

Nearest State: FL
Loc ID: GNV
Airport: GAINESVILLE RGNL
City: GAINESVILLE
Latitude: 29-41-9.89 N
Longitude: 82-16-22.74 W
Horizontal Datum: NAD83
Site Elevation (SE): 128 (nearest foot)
Structure Height (AGL): 123 (nearest foot)

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Describe/Remarks

Proposed ATCT Site 2: Gainesville Regional Airport (GNV) proposes to site, design, and construct an Air Traffic Control Tower (ATCT) suitable for a Part 139 Class I Airport. This proposed ATCT will replace the existing ATCT facility at GNV. Intended design is a control cab on top of a functional shaft. Site 2 is located at Latitude 29° 41' 9.89" N; Longitude 82° 16' 22.74" W. Site ground elevation is 128 feet MSL. Observer eye height is 98 feet AGL; Structure height is 108 feet AGL; Overall tower height including a lightning rod and antennas is 123 feet AGL. All heights specified are for planning purposes only.

Specific Frequencies

Federal Aviation Administration

« OE/AAA

Notice of Proposed Construction or Alteration - On Airport

Overview

Study (ASN): 2012-ASO-2031-NRA
Prior Study:
Status: Determined

Received Date: 12/05/2012
Entered Date: 12/05/2012
Completion Date: 04/22/2013
Map: View Map

Sponsor Information

Sponsor: Gainesville Regional Airport
Attention Of: Allan Penksa
Address: 3880 NE 39th Avenue
Address2: Suite A
City: Gainesville
State: FL
Postal Code: 32609
Country: US
Phone: 352-373-0249
Fax:

Sponsor's Representative Information

Representative: RS&H
Attention Of: Matt Thomason
Address: 10748 Deerwood Park Blvd South
Address2:
City: Jacksonville
State: FL
Postal Code: 32256
Country: US
Phone: 904-256-2206
Fax:

Construction / Alteration Information

Notice Of: Construction
Duration: Permanent
if Temporary : Months: Days:
Work Schedule - Start:
Work Schedule - End:

Case Information

Component Type: BUILDINGS
Development Type: BUILDINGS - Miscellaneous
Other Desc: Proposed ATCT
Prior Study:
Date Determined: 04/22/2013
Letters: 04/22/2013 NO7460

Structure Details

Nearest State: FL
Loc ID: GNV
Airport: GAINESVILLE RGNL
City: GAINESVILLE
Latitude: 29-41-29.48 N
Longitude: 82-16-6.58 W
Horizontal Datum: NAD83
Site Elevation (SE): 118 (nearest foot)
Structure Height (AGL): 121 (nearest foot)

Common Frequency Bands

Low Freq	High Freq	Freq Unit	ERP	ERP Unit

Describe/Remarks

Proposed ATCT Site 3: Gainesville Regional Airport (GNV) proposes to site, design, and construct an Air Traffic Control Tower (ATCT) suitable for a Part 139 Class I Airport. This proposed ATCT will replace the existing ATCT facility at GNV. Intended design is a control cab on top of a functional shaft. Site 3 is located at Latitude 29° 41' 29.48" N; Longitude 82° 16' 6.577" W. Site ground elevation is 118 feet MSL. Observer eye height is 96 feet AGL; Structure height is 106 feet AGL; Overall tower height including a lightning rod and antennas is 121 feet AGL. All heights specified are for planning purposes only.

Specific Frequencies

APPENDIX H
RESULTS FROM AFTIL TRIP #2

AFTIL was not utilized in this analysis.

APPENDIX I
ATCVAT PRINTOUTS

Visibility Siting Requirements Human Factors Analyses

Objective: Two human performance metrics, Object Discrimination Analysis and Object Discrimination and Line of Sight (LOS) Angle of Incidence, were used to assess the impact of tower height on air traffic control tower specialist distance perception.

Technical Approach: the tower visibility analysis tool (http://www.hf.faa.gov/visibility) was used to assess the human performance metrics[1].

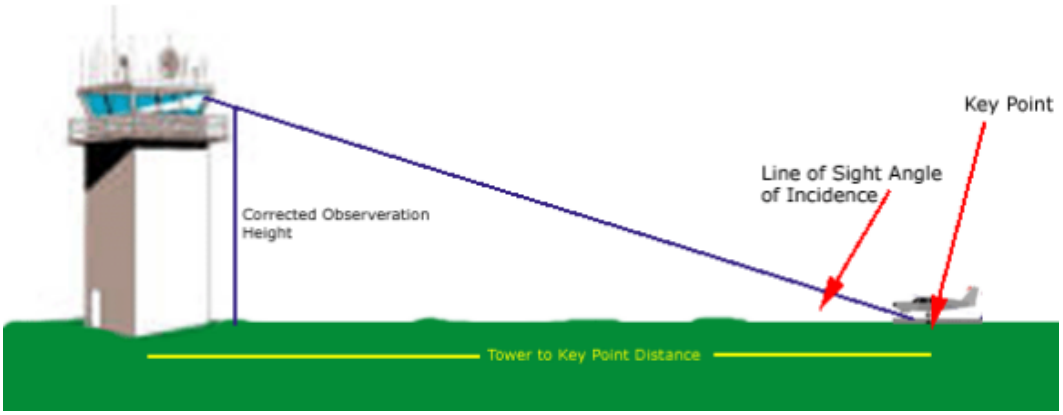
Air Traffic Control Tower: **GNV Site 1**
Light Level: **Sunlight Clouds**
Ground Turbulence: **Medium**
Target Object: **Dodge Caravan**, target orientation: **Front View**
Observer Eye Height: **100**
Vertical Elevation Change Between Observer and Key Point (feet): **110**
Ground Elevation at Tower (MSL): **150**
Ground Elevation at Key Point (MSL): **140**
Tower to Key Point Distance: **7927** (feet) **2.42** (km)
Visibility Range: **10**(Miles) **16.09** (km)

1. Object Discrimination Analysis Results

Criteria	Threshold	Tower Results	Pass/Fail
probability(detection)	95.5%	96.6%	Pass
probability(recognition)	11.5%	13.4%	Pass

2. Line of Sight (LOS) Angle of Incidence

Threshold	Tower Results	Pass/Fail
0.8 degrees or 48 minutes	.80 degrees	Pass



[1]Krebs, Hewitt, Murrill, and Driggers, 2005. *How High is High Enough? Quantifying the Impact of Air Traffic Control Tower Observation Height on Distance Perception*, International Symposium on Aviation Psychology, 1-5.

Visibility Siting Requirements Human Factors Analyses

Objective: Two human performance metrics, Object Discrimination Analysis and Object Discrimination and Line of Sight (LOS) Angle of Incidence, were used to assess the impact of tower height on air traffic control tower specialist distance perception.

Technical Approach: the tower visibility analysis tool (http://www.hf.faa.gov/visibility) was used to assess the human performance metrics[1].

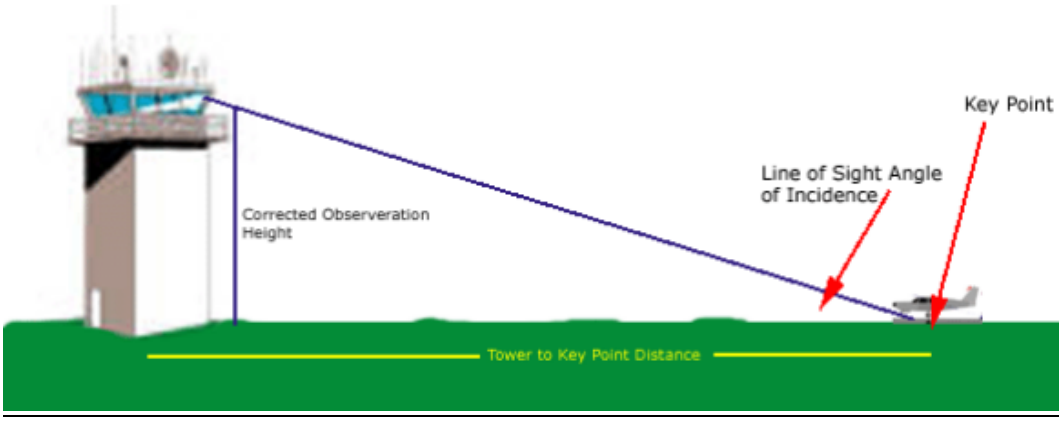
Air Traffic Control Tower: **GNV Site 2**
Light Level: **Sunlight Clouds**
Ground Turbulence: **Medium**
Target Object: **Dodge Caravan**, target orientation: **Front View**
Observer Eye Height: **98**
Vertical Elevation Change Between Observer and Key Point (feet): **86**
Ground Elevation at Tower (MSL): **128**
Ground Elevation at Key Point (MSL): **140**
Tower to Key Point Distance: **6125** (feet) **1.87** (km)
Visibility Range: **10**(Miles) **16.09** (km)

1. Object Discrimination Analysis Results

Criteria	Threshold	Tower Results	Pass/Fail
probability(detection)	95.5%	98.9%	Pass
probability(recognition)	11.5%	32.7%	Pass

2. Line of Sight (LOS) Angle of Incidence

Threshold	Tower Results	Pass/Fail
0.8 degrees or 48 minutes	.80 degrees	Pass



[1]Krebs, Hewitt, Murrill, and Driggers, 2005. *How High is High Enough? Quantifying the Impact of Air Traffic Control Tower Observation Height on Distance Perception*, International Symposium on Aviation Psychology, 1-5.

Visibility Siting Requirements Human Factors Analyses

Objective: Two human performance metrics, Object Discrimination Analysis and Object Discrimination and Line of Sight (LOS) Angle of Incidence, were used to assess the impact of tower height on air traffic control tower specialist distance perception.

Technical Approach: the tower visibility analysis tool (http://www.hf.faa.gov/visibility) was used to assess the human performance metrics[1].

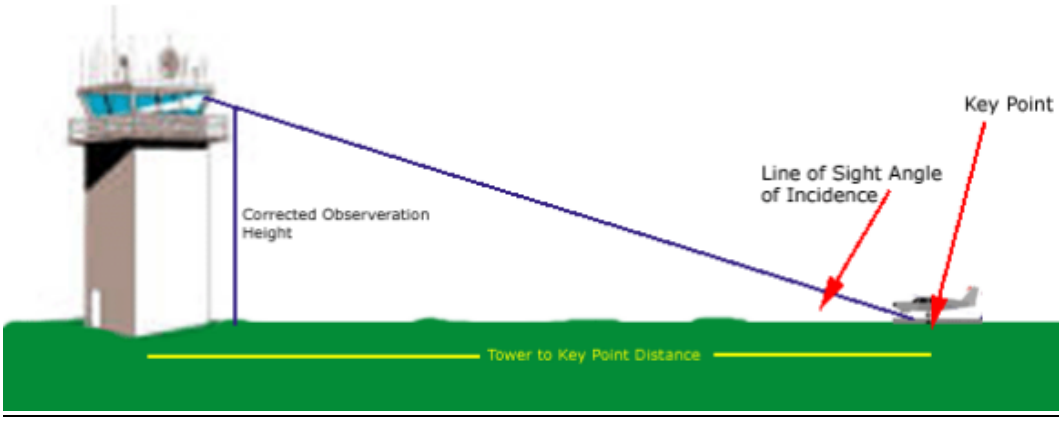
Air Traffic Control Tower: **GNV Site 3**
Light Level: **Sunlight Clouds**
Ground Turbulence: **Medium**
Target Object: **Dodge Caravan**, target orientation: **Front View**
Observer Eye Height: **96**
Vertical Elevation Change Between Observer and Key Point (feet): **62**
Ground Elevation at Tower (MSL): **118**
Ground Elevation at Key Point (MSL): **152**
Tower to Key Point Distance: **4439** (feet) **1.35** (km)
Visibility Range: **10**(Miles) **16.09** (km)

1. Object Discrimination Analysis Results

Criteria	Threshold	Tower Results	Pass/Fail
probability(detection)	95.5%	99.7%	Pass
probability(recognition)	11.5%	65.8%	Pass

2. Line of Sight (LOS) Angle of Incidence

Threshold	Tower Results	Pass/Fail
0.8 degrees or 48 minutes	.80 degrees	Pass



[1]Krebs, Hewitt, Murrill, and Driggers, 2005. *How High is High Enough? Quantifying the Impact of Air Traffic Control Tower Observation Height on Distance Perception*, International Symposium on Aviation Psychology, 1-5.

APPENDIX J
ENVIRONMENTAL INFORMATION

ENVIRONMENTAL OVERVIEW

This appendix describes a preliminary analysis of the potential environmental impact of natural, physical, and human resources associated with the construction and operation of a replacement Air Traffic Control Tower (ATCT) at Gainesville Regional Airport (GNV). This appendix does not represent an environmental document under the provisions of the National Environmental Policy Act of 1969 (NEPA). According to Federal Aviation Administration Order 1050.1E, Change 1, *Environmental Impacts, Policies and Procedures*, Part 401g, the establishment of an ATCT normally requires the development of an Environmental Assessment (EA).[1] The preparation of an EA will require coordination with Federal, state, or local environmental agencies to secure the necessary approvals and permits to implement this project. There is the potential to use the Orlando Airports District Office (ADO) Focused EA form; however, consultation with the Orlando ADO would need to occur to ensure the form is appropriate for this project.

Resource categories that have been examined for potential environmental impacts associated with a replacement ATCT at GNV are:

- Air Quality
- Coastal Resources
- Compatible Land Use
- Construction Impacts
- Department of Transportation Act: Section 4(f)
- Farmlands
- Fish, Wildlife, and Plants
- Floodplains
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Historical, Architectural, Archeological, and Cultural Resources
- Light Emissions and Visual Impacts
- Natural Resources and Energy Supply
- Noise
- Secondary (Induced Impacts)
- Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks
- Water Quality
- Wetlands
- Wild and Scenic Rivers

The following resource categories have the potential to result in potential environmental impacts.

Construction Impacts

Short-term construction impacts that would result from construction of a replacement ATCT include noise, air emissions, temporary water quality impacts from the use of construction equipment and ground disturbing activities, and disposal of construction debris. There may also be temporary positive socioeconomic impacts associated with construction (e.g., construction workers).

[1] FAA Order 1050.1E, *Environmental Impacts, Policies and Procedures*, Chapter 4, Part 401g, March 2006.

Temporary noise impacts as a result of construction vehicles and machinery would be limited to the immediate vicinity of the replacement ATCT site. Site preparation would result in temporary noise generation while construction activities are taking place. Noise levels would vary depending on the nature of construction activities and the type and model of equipment being used. The closest noise sensitive land uses to the three potential ATCT sites are two mobile home parks. Brittany Estates is approximately 0.8-, 1, and 0.9- mile northwest of Sites 1, 2, and 3, respectively. Lamplighter Mobile Home Park is approximately 1.5, 0.9-, and 1 mile(s) southeast of Sites 1, 2, and 3, respectively.

The amount of airborne suspended particulates would temporarily increase in the Airport vicinity during certain construction activities. Heavy construction equipment used at the ATCT site would emit exhaust containing carbon monoxide (CO), nitrogen oxide (NO_x), volatile organic compounds (VOCs), and particulate matter. To minimize temporary air quality impacts, the contractor could be required to implement Best Management Practices (BMPs), such as treating excavated areas with water, covering haul trucks, using plastic sheet coverings, maintaining construction vehicles appropriately, using reduced speeds, suspending certain activities during high wind conditions, and covering graded areas with stabilizing materials.

Construction of a replacement ATCT may result in temporary effects to water quality. There is a possibility that contaminants could affect groundwater resources during construction activities. However, water-related BMPs and construction permit conditions associated with the construction of an ATCT at Site 1, 2, or 3 is not expected to have a significant impact on groundwater resources.

A temporary increase of on-site hazardous material storage, predominately diesel fuel, which is necessary for the operation of construction equipment, would also be a result of construction. Construction activities would also result in short-term and temporary increases in the quantity of solid waste generated to the Airport.

A positive socioeconomic impact of construction is the construction-related employment of local contractors that could occur as a result of a replacement ATCT.

Federal, state, or local ordinances and regulations would be followed to address the potential impacts of construction activities. FAA Advisory Circular 150/5370-10F, *Standards for Specifying Construction of Airports*,[2] would be incorporated into construction planning of a replacement ATCT to minimize potential environmental impacts as a result of construction activities.

Hazardous Materials, Pollution Prevention, and Solid Waste

The current ATCT was built in the early 1970s and may contain asbestos. Generally, buildings constructed prior to 1981 are presumed to contain asbestos.[3] According to the U.S. EPA, asbestos is a mineral fiber that has been used commonly in a variety of building construction materials for insulation and as a fire-retardant.[4] While asbestos does not pose a significant harm when in good condition, the EPA states that asbestos can cause significant health problems if microscopic fibers become airborn and inhaled into the lungs. This usually occurs when asbestos-containing materials are damaged or disturbed by repair, remodeling, or demolition activities.

[2] FAA Advisory Circular 150/5370-10F, *Standards for Specifying Construction of Airports*, September 2011.
[3] Princeton University, Asbestos fact Sheet, http://web.princeton.edu/sites/ehs/workplacesafety/asbestosfactsheet.htm, accessed October 2013.
[4] EPA, Asbestos, http://www.epa.gov/asbestos/, accessed October 2013.

An asbestos assessment would need to occur prior to the deconstruction of the current ATCT. If asbestos is present in the current ATCT, applicable Federal, state, and local ordinances and regulations regarding the proper handling of asbestos would need to be followed to mitigate the potential impacts of deconstruction.

Light Emission and Visual Impacts

Aesthetic impacts are generally more difficult to quantify due to the subjective nature of annoyances associated with light emissions and visual impacts. There is no special purpose law that identifies thresholds for light emissions and visual impacts. FAA Order 1050.1E, Change 1, indicates that when a proposed action results in light emissions that create annoyances that interfere with normal activities, it may constitute a light emission impact.[5] Additionally, when consultation with Federal, state, and local public, or tribes indicate proposed actions effect contrasts with the existing visual environment, and the agencies state the effect is objectionable, an action may constitute an impact and require mitigation.

All three potential replacement ATCT sites are centrally located within the Airport property. Site 1 is approximately 0.5-mile west of the current ATCT, Site 2 is directly adjacent to the current ATCT, and Site 3 is approximately 0.5-mile northeast of the current ATCT. The primary visual impact of the replacement ATCT would be its height. The height of each proposed replacement ATCT is based on the minimum height required for necessary equipment, as well as the ability to view the Airport's runway ends.

Based on aerial images, there are residential areas to the northwest and southeast of the Airport. The existing vegetative buffer, consisting primarily of trees and shrubs, would minimize potential visual impacts. It is unlikely that the replacement ATCT would be visible from any of the three potential sites given the distance of the residential areas from the potential replacement ATCT sites and the dense vegetation existing between the two areas.

Water Quality

The primary framework for considering water quality is the Clean Water Act.[6] Landside development, such as the construction of an ATCT, may temporarily or permanently affect surface waters, groundwater, or drinking water supplies.

As previously discussed, construction of the replacement ATCT may temporarily effect water quality. These effects may be mitigated through the use of water-related BMPs (see previous **Construction Impacts** section).

Aside from construction, the addition of impervious surface to the area may also affect water quality. The new impervious surface as a result of the ATCT, service road, and parking may increase stormwater runoff. Stormwater runoff may include additional pollutants that result from the use of the replacement ATCT (i.e., oil from vehicles). This stormwater may be absorbed into the surrounding ground. However, stormwater treatment facilities could be developed to prevent stormwater from affecting groundwater quality. Stormwater runoff is not likely to have an impact on surface water and/or drinking water given that the Airport is not located near a sole source aquifer, a wild and scenic river, or other type of water body.

[5] FAA, Order 1050.1E, Change 1, *Environmental Impacts: Policies and Procedures*, March 20, 2006.
[6] FAA, *Environmental Desk Reference for Airport Actions*, October 2007.

Wetlands

None of the three potential replacement ATCT sites are located on ground that is considered to be a wetland. However, there are wetlands in the vicinity of the Airport, primarily freshwater forested/shrub wetlands.[7]

Analysis of potential wetland impacts was based on ultimate development at the Airport and line-of-sight from each potential replacement ATCT site (see **Exhibit E-1**). The replacement ATCT at Site 1 would have a clear line-of-sight to the current and potential future ends of all runways. Therefore, no wetlands would be affected. The replacement ATCT at Site 2 would have a clear line-of-sight to all runway ends at their existing location. However, approximately 5.5 acres of trees in the wetland area would need to be removed to provide a clear line-of-sight to the future proposed end of Runway 25. Site 3 is located approximately 450 feet south of a delineated wetland. Approximately 1 acre of trees in the wetland area would need to be removed in order for the replacement ATCT to have a clear line-of-sight to the current end of Runway 25 from Site 3. Approximately 6.5 acres of trees in this wetland area may need to be removed in order for the replacement ATCT to have a clear line-of-sight to the proposed future end of Runway 25.

The western portion of the wetland that may need to be removed if the replacement ATCT is located at Sites 2 or 3 would not cause segmentation of the wetland, and therefore, would not negatively affect the rest of the wetland area. Permits associated with wetland construction would need to be acquired and BMPs could be used to minimize harm to the rest of the wetland area.

Conclusion

The potential environmental impacts of a replacement ATCT at GNV include construction impacts (e.g., noise, air quality, water quality), hazardous materials, visual impacts, water quality, and wetlands. None of these potential impacts are expected to be significant. Consultation with the FAA ADO is recommended to determine the appropriate NEPA documentation. According to FAA Order 1050.1E, Change 1, Section 401(g), actions normally that normally require an EA include the establishment or relocation of ATCTs.[8] There is the potential for use of the ADO's Focused EA given FAA's guidance and that the construction of a replacement ATCT at GNV is not anticipated to result in any significant impacts.

The following table provides a summary of the potential environmental impacts associated with implementation of a replacement ATCT at GNV.

[7] U.S. Fish and Wildlife, National Wetlands Inventory, http://www.fws.gov/wetlands/Wetlands-Mapper.html, accessed October 2013.
[8] FAA, Order 1050.1E, Change 1, *Environmental Impacts: Policies and Procedures*, Section 401(g), p.4-2, March 20, 2006.

Environmental Resource[9]	Preliminary Environmental Impact Assessment
Air Quality	No Impact
Coastal Resources	No Impact
Compatible Land Use	No Impact
Construction Impacts	Less than Significant Impact
Department of Transportation Act: Section 4(f)	No Impact
Farmlands	No Impact
Fish, Wildlife, and Plants	No Impact
Floodplains	No Impact
Hazardous Materials, Pollution Prevention, and Solid Waste	Less than Significant Impact
Historical, Architectural, Archeological, and Cultural Resources	No Impact
Light Emissions and Visual Impacts	Less than Significant Impact
Natural Resources and Energy Supply	No Impact
Noise	No Impact
Secondary (Induced) Impacts	No Impact
Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks	No Impact
Water Quality	Less than Significant Impact
Wetlands	Less than Significant Impact
Wild and Scenic Rivers	No Impact

Source: Reynolds, Smith, & Hills, 2013.

[9] FAA Order 1050.1E, *Environmental Impacts, Policies and Procedures*, Appendix A, *Analysis of Environmental Impact Categories*, March 2006.



Sources: RS&H, 2013; USFWS, 2013

0 500 1,000 2,000 Feet

N

- Site 1
- Site 2
- Site 3
- Proposed Future Runway Ends (Approximate Location)

Wetlands

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

RS&H
IMPROVING YOUR WORLD

Exhibit 1
Potential Wetland Impacts

APPENDIX K
AIRPORT CONCURRENCE FORM

APPENDIX K
AIRPORT CONCURRENCE FORM

This form identifies the siting requirements and impacts of the replacement FAA Airport Traffic Control Tower (ATCT) planned to be constructed at the Gainesville Regional Airport (LYH). The signed document will satisfy FAA national policy regarding written confirmation from the Airport owner/operator stating they have advised the GNV airport user community about the new ATCT and the impacts the above project would have on their operations.

Section I. The siting requirements are as follows:

Item I: The location of the ATCT (NAD-83)
Latitude: 29°-41'-09.889" N
Longitude: 82°-16'-22.741" W

Item 2: The ATCT height is 251' MSL (123' AGL).

Item 3: The ATCS eye height used is 226' MSL (98' AGL).

Item 4: The exact location of the ATCT is subject to moving no more than 80 feet within the boundaries of the site to efficiently accommodate the base building. This may impact the ATCT height no more than 5 feet.

Item 5: The exact ATCT height is subject to Official Air Space Approval per FAA Form 7460-1.

Item 6: Sunrise, sunset, fog, snow, rain, look down angle, ramp lighting, glare and other issues that can adversely affect the ATCS sight have been considered for the ATCT location.

Section 2. Identified Impacts

None

Section 3. The submission of this signed document constitutes concurrence and adherence to FAA [construction] policy concerning appropriate public notification of the airport community regarding the intent to build a new ATCT and any impacts therein concerning the use of said airfield. The submission of this document does not waive the requirement of public comment as defined in the National Environmental Policy Act, the Council on Environmental Quality regulations implementing NEPA, Title 40 of the United States Code of Federal Regulations, Parts 1500-1517, and other statues, orders, directives, or policy concerning environmental assessment and alternatives.

Section 4. Airport Submission

For the Airport Sponsor
City of Gainesville, FL

June 3, 2014

Allan Penksa
Chief Executive Officer
Gainesville Regional Airport

Date

APPENDIX L
CONSTRUCTION COST ESTIMATES

Site 1 Preliminary Cost Estimates

Cost Function	
Tower & Cab	$1,500,000
Federal Contract Tower Controllers Equipment	$180,000
Site Improvements and Clearing ($7,500/AC)	$15,000
Access Road Improvements ($100/LF Access Road)	$0
Utilities Extensions	$25,000
Engineering Services	$850,000
Total	**$2,570,000**

Site 2 Preliminary Cost Estimates

Cost Function	
Tower & Cab	$1,500,000
Federal Contract Tower Controller Equipment	$180,000
Site Improvements and Clearing ($7,500/AC)	$300,000
Access Road Improvements ($100/LF Access Road)	$0
Utilities Extensions	$0
Engineering Services	$800,000
Total	**$2,780,000**

Site 3 Preliminary Cost Estimates

Cost Function	
Tower & Cab	$1,500,000
Federal Contract Tower Controllers Equipment	$180,000
Site Improvements and Clearing ($7,500/AC)	$360,000
Access Road Improvements ($100/LF Access Road)	$220,000
Utilities Extensions	$50,000
Engineering Services	$850,000
Total	**$3,160,000**

APPENDIX M
DRAWINGS

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE, FLORIDA

AIRPORT LAYOUT PLAN UPDATE

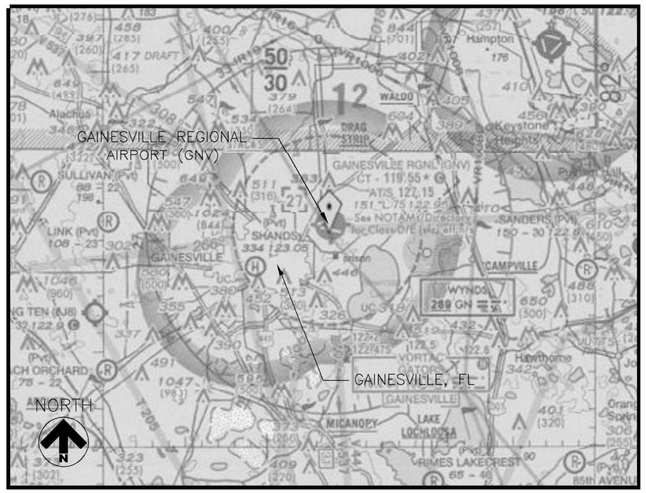
RS&H®
IMPROVING YOUR WORLD
Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Boulevard South
Jacksonville, Florida 32256-0597
904-256-2500 FAX 904-256-2502
www.rsandh.com
FL.Cert.Nos. AAC001886 EB0005620 LCC000210

PREPARED FOR

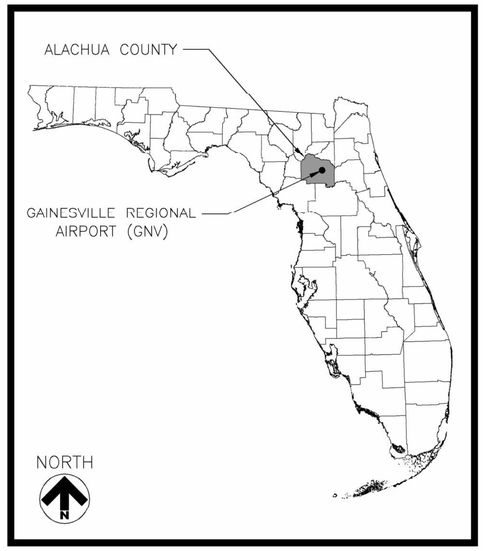
GAINESVILLE - ALACHUA COUNTY REGIONAL AIRPORT AUTHORITY

GAINESVILLE REGIONAL AIRPORT

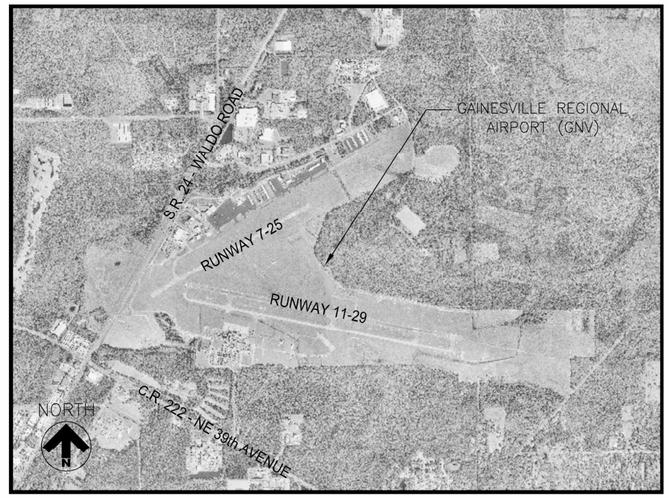
FAA AIP NO.: 3-12-0028-035-2012
RS&H PROJECT NO.: 201-3363-007
JANUARY 2014



LOCATION MAP
N.T.S.



STATE MAP
N.T.S.



VICINITY MAP
N.T.S.

FDOT SPONSOR APPROVAL

THIS AIRPORT DRAWING IS APPROVED BY:

(SIGNATURE)_____ DATE:_____

NAME: _____

TITLE: _____

AIRPORT SPONSOR APPROVAL

THIS AIRPORT DRAWING IS APPROVED BY:

(SIGNATURE)_____ DATE:_____

NAME: _____

TITLE: _____

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION	REVISION DATE
1	TITLE SHEET	
2	AIRPORT DATA SHEET	
3	FACILITIES LAYOUT PLAN	
4	AIRPORT LAYOUT PLAN	
5	AIRPORT AIRSPACE DRAWING (1 OF 2)	
6	AIRPORT AIRSPACE DRAWING (2 OF 2)	
7	AIRPORT AIRSPACE PROFILES	
8	INNER PORTION OF THE APPROACH SURFACE RUNWAY 11	
9	INNER PORTION OF THE APPROACH SURFACE RUNWAY 29	
10	INNER PORTION OF THE APPROACH SURFACE RUNWAY 7	
11	INNER PORTION OF THE APPROACH SURFACE RUNWAY 25	
12	ONE ENGINE INOPERATIVE SURFACE (OIS) RUNWAY 29	
13	TERMINAL AREA PLAN	
14	GENERAL AVIATION AREA PLAN (1 OF 2)	
15	GENERAL AVIATION AREA PLAN (2 OF 2)	
16	LAND USE COMPATIBILITY PLAN	
17	AIRPORT PROPERTY MAP	

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE, FLORIDA

AIRPORT LAYOUT PLANS

PREPARED FOR

ALACHUA COUNTY, FLORIDA

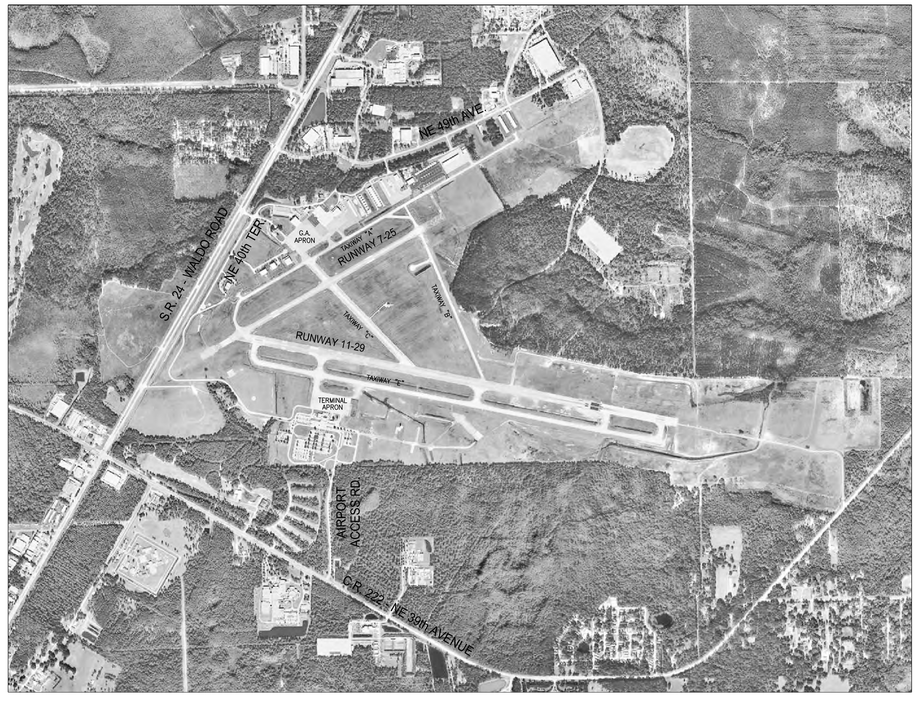
FAA AIP NO.: 3-12-0028-019-2002
FDOT PROJECT NO.: FP21674719401
RS&H PROJECT NO.: 201-3363-001

AUGUST 2006









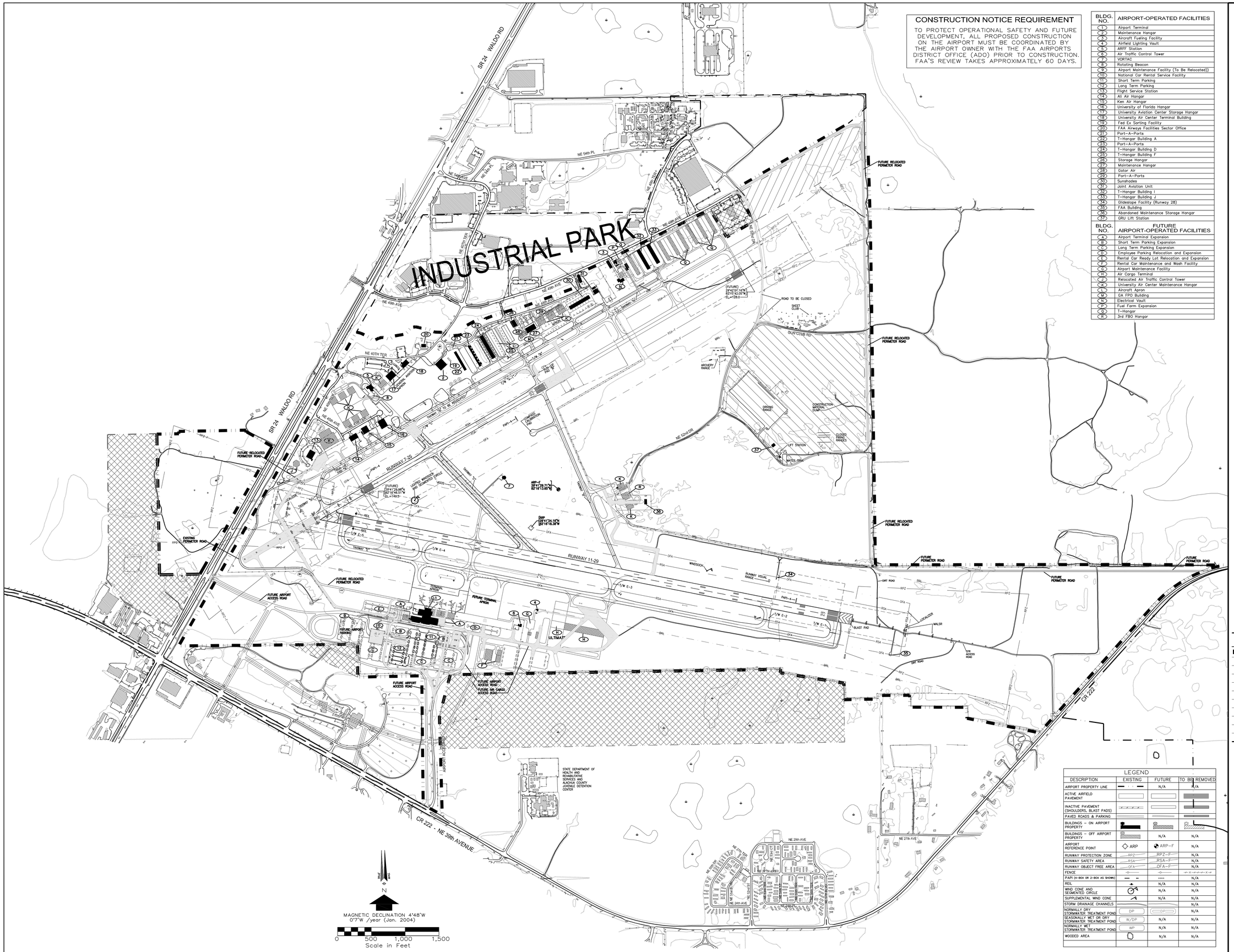
RS&H®

Architectural, Engineering, Planning and Environmental Services

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	FACILITY LAYOUT PLAN
3	AIRPORT LAYOUT PLAN
4	TERMINAL BUILDING AREA PLAN
5	GENERAL AVIATION BUILDING AREA PLAN
6	RUNWAY APPROACH PROFILE and RUNWAY PROTECTION ZONE - RUNWAY 11
7	RUNWAY APPROACH PROFILE and RUNWAY PROTECTION ZONE - RUNWAY 29
8	RUNWAY APPROACH PROFILE and RUNWAY PROTECTION ZONE - RUNWAY 07
9	RUNWAY APPROACH PROFILE and RUNWAY PROTECTION ZONE - RUNWAY 25
10	PART 77 IMAGINARY SURFACE PLAN
11	PART 77 IMAGINARY SURFACE PLAN
12	LAND USE COMPATIBILITY
13	AIRPORT PROPERTY MAP

GAINESVILLE REGIONAL AIRPORT


INDUSTRIAL PARK
SR 24 WALDO RD
NE 54th PL
NE 53rd AVE
NE 52nd PL
NE 51st PL
NE 50th TER
NE 49th AVE
NE 48th TER
NE 47th TER
NE 46th AVE
NE 45th AVE
NE 40TH TER
NE 39th AVE
NE 52nd DR
GUY CLUB RD
FUTURE RELOCATED PERIMETER ROAD
ROAD TO BE CLOSED
RUNWAY 7-25
RUNWAY 11-29
TAXIWAY A
TAXIWAY B
TAXIWAY C
TAXIWAY D
TAXIWAY E
TAXIWAY F
TAXIWAY G
TERMINAL APRON
FUTURE TERMINAL APRON
FUTURE AIRPORT ACCESS ROAD
FUTURE AIRPORT PARKING
FUTURE AIRPORT ACCESS ROAD
FUTURE AIR CARGO ACCESS ROAD
EXISTING PERIMETER ROAD
FUTURE PERIMETER ROAD
ARCHERY RANGE
DRIVING RANGE
CONSTRUCTION MATERIAL DUMP
CLOSED PISTOL RANGES
LIFT STATION
WATER TANK
RUNWAY VISUAL RANGE
LOCALIZER
MALSR
BLAST PAD
SRE ACCESS ROAD
ORT ROAD
CR 222
CR 222 - NE 39th AVENUE
STATE DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES AND ALACHUA COUNTY JUVENILE DETENTION CENTER
NE 29th AVE
NE 28TH AVE
NE 27th AVE
NE 26th AVE
NE 24th AVE
NE 23rd AVE
NE 22nd AVE
NE 21st AVE
NE 20th AVE
NE 19th AVE
NE 18th AVE
NE 17th AVE
NE 16th AVE
NE 15th AVE
NE 14th AVE
NE 13th AVE
NE 12th AVE
NE 11th AVE
NE 10th AVE
NE 9th AVE
NE 8th AVE
NE 7th AVE
NE 6th AVE
NE 5th AVE
NE 4th AVE
NE 3rd AVE
NE 2nd AVE
NE 1st AVE
NE 1st PL
NE 2nd PL
NE 3rd PL
NE 4th PL
NE 5th PL
NE 6th PL
NE 7th PL
NE 8th PL
NE 9th PL
NE 10th PL
NE 11th PL
NE 12th PL
NE 13th PL
NE 14th PL
NE 15th PL
NE 16th PL
NE 17th PL
NE 18th PL
NE 19th PL
NE 20th PL
NE 21st PL
NE 22nd PL
NE 23rd PL
NE 24th PL
NE 25th PL
NE 26th PL
NE 27th PL
NE 28th PL
NE 29th PL
NE 30th PL
NE 31st PL
NE 32nd PL
NE 33rd PL
NE 34th PL
NE 35th PL
NE 36th PL
NE 37th PL
NE 38th PL
NE 39th PL
NE 40th PL
NE 41st PL
NE 42nd PL
NE 43rd PL
NE 44th PL
NE 45th PL
NE 46th PL
NE 47th PL
NE 48th PL
NE 49th PL
NE 50th PL
NE 51st PL
NE 52nd PL
NE 53rd PL
NE 54th PL
NE 55th PL
NE 56th PL
NE 57th PL
NE 58th PL
NE 59th PL
NE 60th PL
NE 61st PL
NE 62nd PL
NE 63rd PL
NE 64th PL
NE 65th PL
NE 66th PL
NE 67th PL
NE 68th PL
NE 69th PL
NE 70th PL
NE 71st PL
NE 72nd PL
NE 73rd PL
NE 74th PL
NE 75th PL
NE 76th PL
NE 77th PL
NE 78th PL
NE 79th PL
NE 80th PL
NE 81st PL
NE 82nd PL
NE 83rd PL
NE 84th PL
NE 85th PL
NE 86th PL
NE 87th PL
NE 88th PL
NE 89th PL
NE 90th PL
NE 91st PL
NE 92nd PL
NE 93rd PL
NE 94th PL
NE 95th PL
NE 96th PL
NE 97th PL
NE 98th PL
NE 99th PL
NE 100th PL
NE 101st PL
NE 102nd PL
NE 103rd PL
NE 104th PL
NE 105th PL
NE 106th PL
NE 107th PL
NE 108th PL
NE 109th PL
NE 110th PL
NE 111th PL
NE 112th PL
NE 113th PL
NE 114th PL
NE 115th PL
NE 116th PL
NE 117th PL
NE 118th PL
NE 119th PL
NE 120th PL
NE 121st PL
NE 122nd PL
NE 123rd PL
NE 124th PL
NE 125th PL
NE 126th PL
NE 127th PL
NE 128th PL
NE 129th PL
NE 130th PL
NE 131st PL
NE 132nd PL
NE 133rd PL
NE 134th PL
NE 135th PL
NE 136th PL
NE 137th PL
NE 138th PL
NE 139th PL
NE 140th PL
NE 141st PL
NE 142nd PL
NE 143rd PL
NE 144th PL
NE 145th PL
NE 146th PL
NE 147th PL
NE 148th PL
NE 149th PL
NE 150th PL
NE 151st PL
NE 152nd PL
NE 153rd PL
NE 154th PL
NE 155th PL
NE 156th PL
NE 157th PL
NE 158th PL
NE 159th PL
NE 160th PL
NE 161st PL
NE 162nd PL
NE 163rd PL
NE 164th PL
NE 165th PL
NE 166th PL
NE 167th PL
NE 168th PL
NE 169th PL
NE 170th PL
NE 171st PL
NE 172nd PL
NE 173rd PL
NE 174th PL
NE 175th PL
NE 176th PL
NE 177th PL
NE 178th PL
NE 179th PL
NE 180th PL
NE 181st PL
NE 182nd PL
NE 183rd PL
NE 184th PL
NE 185th PL
NE 186th PL
NE 187th PL
NE 188th PL
NE 189th PL
NE 190th PL
NE 191st PL
NE 192nd PL
NE 193rd PL
NE 194th PL
NE 195th PL
NE 196th PL
NE 197th PL
NE 198th PL
NE 199th PL
NE 200th PL
NE 201st PL
NE 202nd PL
NE 203rd PL
NE 204th PL
NE 205th PL
NE 206th PL
NE 207th PL
NE 208th PL
NE 209th PL
NE 210th PL
NE 211th PL
NE 212th PL
NE 213th PL
NE 214th PL
NE 215th PL
NE 216th PL
NE 217th PL
NE 218th PL
NE 219th PL
NE 220th PL
NE 221st PL
NE 222nd PL
NE 223rd PL
NE 224th PL
NE 225th PL
NE 226th PL
NE 227th PL
NE 228th PL
NE 229th PL
NE 230th PL
NE 231st PL
NE 232nd PL
NE 233rd PL
NE 234th PL
NE 235th PL
NE 236th PL
NE 237th PL
NE 238th PL
NE 239th PL
NE 240th PL
NE 241st PL
NE 242nd PL
NE 243rd PL
NE 244th PL
NE 245th PL
NE 246th PL
NE 247th PL
NE 248th PL
NE 249th PL
NE 250th PL
NE 251st PL
NE 252nd PL
NE 253rd PL
NE 254th PL
NE 255th PL
NE 256th PL
NE 257th PL
NE 258th PL
NE 259th PL
NE 260th PL
NE 261st PL
NE 262nd PL
NE 263rd PL
NE 264th PL
NE 265th PL
NE 266th PL
NE 267th PL
NE 268th PL
NE 269th PL
NE 270th PL
NE 271st PL
NE 272nd PL
NE 273rd PL
NE 274th PL
NE 275th PL
NE 276th PL
NE 277th PL
NE 278th PL
NE 279th PL
NE 280th PL
NE 281st PL
NE 282nd PL
NE 283rd PL
NE 284th PL
NE 285th PL
NE 286th PL
NE 287th PL
NE 288th PL
NE 289th PL
NE 290th PL
NE 291st PL
NE 292nd PL
NE 293rd PL
NE 294th PL
NE 295th PL
NE 296th PL
NE 297th PL
NE 298th PL
NE 299th PL
NE 300th PL
NE 301st PL
NE 302nd PL
NE 303rd PL
NE 304th PL
NE 305th PL
NE 306th PL
NE 307th PL
NE 308th PL
NE 309th PL
NE 310th PL
NE 311th PL
NE 312th PL
NE 313th PL
NE 314th PL
NE 315th PL
NE 316th PL
NE 317th PL
NE 318th PL
NE 319th PL
NE 320th PL
NE 321st PL
NE 322nd PL
NE 323rd PL
NE 324th PL
NE 325th PL
NE 326th PL
NE 327th PL
NE 328th PL
NE 329th PL
NE 330th PL
NE 331st PL
NE 332nd PL
NE 333rd PL
NE 334th PL
NE 335th PL
NE 336th PL
NE 337th PL
NE 338th PL
NE 339th PL
NE 340th PL
NE 341st PL
NE 342nd PL
NE 343rd PL
NE 344th PL
NE 345th PL
NE 346th PL
NE 347th PL
NE 348th PL
NE 349th PL
NE 350th PL
NE 351st PL
NE 352nd PL
NE 353rd PL
NE 354th PL
NE 355th PL
NE 356th PL
NE 357th PL
NE 358th PL
NE 359th PL
NE 360th PL
NE 361st PL
NE 362nd PL
NE 363rd PL
NE 364th PL
NE 365th PL
NE 366th PL
NE 367th PL
NE 368th PL
NE 369th PL
NE 370th PL
NE 371st PL
NE 372nd PL
NE 373rd PL
NE 374th PL
NE 375th PL
NE 376th PL
NE 377th PL
NE 378th PL
NE 379th PL
NE 380th PL
NE 381st PL
NE 382nd PL
NE 383rd PL
NE 384th PL
NE 385th PL
NE 386th PL
NE 387th PL
NE 388th PL
NE 389th PL
NE 390th PL
NE 391st PL
NE 392nd PL
NE 393rd PL
NE 394th PL
NE 395th PL
NE 396th PL
NE 397th PL
NE 398th PL
NE 399th PL
NE 400th PL
NE 401st PL
NE 402nd PL
NE 403rd PL
NE 404th PL
NE 405th PL
NE 406th PL
NE 407th PL
NE 408th PL
NE 409th PL
NE 410th PL
NE 411th PL
NE 412th PL
NE 413th PL
NE 414th PL
NE 415th PL
NE 416th PL
NE 417th PL
NE 418th PL
NE 419th PL
NE 420th PL
NE 421st PL
NE 422nd PL
NE 423rd PL
NE 424th PL
NE 425th PL
NE 426th PL
NE 427th PL
NE 428th PL
NE 429th PL
NE 430th PL
NE 431st PL
NE 432nd PL
NE 433rd PL
NE 434th PL
NE 435th PL
NE 436th PL
NE 437th PL
NE 438th PL
NE 439th PL
NE 440th PL
NE 441st PL
NE 442nd PL
NE 443rd PL
NE 444th PL
NE 445th PL
NE 446th PL
NE 447th PL
NE 448th PL
NE 449th PL
NE 450th PL
NE 451st PL
NE 452nd PL
NE 453rd PL
NE 454th PL
NE 455th PL
NE 456th PL
NE 457th PL
NE 458th PL
NE 459th PL
NE 460th PL
NE 461st PL
NE 462nd PL
NE 463rd PL
NE 464th PL
NE 465th PL
NE 466th PL
NE 467th PL
NE 468th PL
NE 469th PL
NE 470th PL
NE 471st PL
NE 472nd PL
NE 473rd PL
NE 474th PL
NE 475th PL
NE 476th PL
NE 477th PL
NE 478th PL
NE 479th PL
NE 480th PL
NE 481st PL
NE 482nd PL
NE 483rd PL
NE 484th PL
NE 485th PL
NE 486th PL
NE 487th PL
NE 488th PL
NE 489th PL
NE 490th PL
NE 491st PL
NE 492nd PL
NE 493rd PL
NE 494th PL
NE 495th PL
NE 496th PL
NE 497th PL
NE 498th PL
NE 499th PL
NE 500th PL
NE 501st PL
NE 502nd PL
NE 503rd PL
NE 504th PL
NE 505th PL
NE 506th PL
NE 507th PL
NE 508th PL
NE 509th PL
NE 510th PL
NE 511th PL
NE 512th PL
NE 513th PL
NE 514th PL
NE 515th PL
NE 516th PL
NE 517th PL
NE 518th PL
NE 519th PL
NE 520th PL
NE 521st PL
NE 522nd PL
NE 523rd PL
NE 524th PL
NE 525th PL
NE 526th PL
NE 527th PL
NE 528th PL
NE 529th PL
NE 530th PL
NE 531st PL
NE 532nd PL
NE 533rd PL
NE 534th PL
NE 535th PL
NE 536th PL
NE 537th PL
NE 538th PL
NE 539th PL
NE 540th PL
NE 541st PL
NE 542nd PL
NE 543rd PL
NE 544th PL
NE 545th PL
NE 546th PL
NE 547th PL
NE 548th PL
NE 549th PL
NE 550th PL
NE 551st PL
NE 552nd PL
NE 553rd PL
NE 554th PL
NE 555th PL
NE 556th PL
NE 557th PL
NE 558th PL
NE 559th PL
NE 560th PL
NE 561st PL
NE 562nd PL
NE 563rd PL
NE 564th PL
NE 565th PL
NE 566th PL
NE 567th PL
NE 568th PL
NE 569th PL
NE 570th PL
NE 571st PL
NE 572nd PL
NE 573rd PL
NE 574th PL
NE 575th PL
NE 576th PL
NE 577th PL
NE 578th PL
NE 579th PL
NE 580th PL
NE 581st PL
NE 582nd PL
NE 583rd PL
NE 584th PL
NE 585th PL
NE 586th PL
NE 587th PL
NE 588th PL
NE 589th PL
NE 590th PL
NE 591st PL
NE 592nd PL
NE 593rd PL
NE 594th PL
NE 595th PL
NE 596th PL
NE 597th PL
NE 598th PL
NE 599th PL
NE 600th PL
NE 601st PL
NE 602nd PL
NE 603rd PL
NE 604th PL
NE 605th PL
NE 606th PL
NE 607th PL
NE 608th PL
NE 609th PL
NE 610th PL
NE 611th PL
NE 612th PL
NE 613th PL
NE 614th PL
NE 615th PL
NE 616th PL
NE 617th PL
NE 618th PL
NE 619th PL
NE 620th PL
NE 621st PL
NE 622nd PL
NE 623rd PL
NE 624th PL
NE 625th PL
NE 626th PL
NE 627th PL
NE 628th PL
NE 629th PL
NE 630th PL
NE 631st PL
NE 632nd PL
NE 633rd PL
NE 634th PL
NE 635th PL
NE 636th PL
NE 637th PL
NE 638th PL
NE 639th PL
NE 640th PL
NE 641st PL
NE 642nd PL
NE 643rd PL
NE 644th PL
NE 645th PL
NE 646th PL
NE 647th PL
NE 648th PL
NE 649th PL
NE 650th PL
NE 651st PL
NE 652nd PL
NE 653rd PL
NE 654th PL
NE 655th PL
NE 656th PL
NE 657th PL
NE 658th PL
NE 659th PL
NE 660th PL
NE 661st PL
NE 662nd PL
NE 663rd PL
NE 664th PL
NE 665th PL
NE 666th PL
NE 667th PL
NE 668th PL
NE 669th PL
NE 670th PL
NE 671st PL
NE 672nd PL
NE 673rd PL
NE 674th PL
NE 675th PL
NE 676th PL
NE 677th PL
NE 678th PL
NE 679th PL
NE 680th PL
NE 681st PL
NE 682nd PL
NE 683rd PL
NE 684th PL
NE 685th PL
NE 686th PL
NE 687th PL
NE 688th PL
NE 689th PL
NE 690th PL
NE 691st PL
NE 692nd PL
NE 693rd PL
NE 694th PL
NE 695th PL
NE 696th PL
NE 697th PL
NE 698th PL
NE 699th PL
NE 700th PL
NE 701st PL
NE 702nd PL
NE 703rd PL
NE 704th PL
NE 705th PL
NE 706th PL
NE 707th PL
NE 708th PL
NE 709th PL
NE 710th PL
NE 711th PL
NE 712th PL
NE 713th PL
NE 714th PL
NE 715th PL
NE 716th PL
NE 717th PL
NE 718th PL
NE 719th PL
NE 720th PL
NE 721st PL
NE 722nd PL
NE 723rd PL
NE 724th PL
NE 725th PL
NE 726th PL
NE 727th PL
NE 728th PL
NE 729th PL
NE 730th PL
NE 731st PL
NE 732nd PL
NE 733rd PL
NE 734th PL
NE 735th PL
NE 736th PL
NE 737th PL
NE 738th PL
NE 739th PL
NE 740th PL
NE 741st PL
NE 742nd PL
NE 743rd PL
NE 744th PL
NE 745th PL
NE 746th PL
NE 747th PL
NE 748th PL
NE 749th PL
NE 750th PL
NE 751st PL
NE 752nd PL
NE 753rd PL
NE 754th PL
NE 755th PL
NE 756th PL
NE 757th PL
NE 758th PL
NE 759th PL
NE 760th PL
NE 761st PL
NE 762nd PL
NE 763rd PL
NE 764th PL
NE 765th PL
NE 766th PL
NE 767th PL
NE 768th PL
NE 769th PL
NE 770th PL
NE 771st PL
NE 772nd PL
NE 773rd PL
NE 774th PL
NE 775th PL
NE 776th PL
NE 777th PL
NE 778th PL
NE 779th PL
NE 780th PL
NE 781st PL
NE 782nd PL
NE 783rd PL
NE 784th PL
NE 785th PL
NE 786th PL
NE 787th PL
NE 788th PL
NE 789th PL
NE 790th PL
NE 791st PL
NE 792nd PL
NE 793rd PL
NE 794th PL
NE 795th PL
NE 796th PL
NE 797th PL
NE 798th PL
NE 799th PL
NE 800th PL
NE 801st PL
NE 802nd PL
NE 803rd PL
NE 804th PL
NE 805th PL
NE 806th PL
NE 807th PL
NE 808th PL
NE 809th PL
NE 810th PL
NE 811th PL
NE 812th PL
NE 813th PL
NE 814th PL
NE 815th PL
NE 816th PL
NE 817th PL
NE 818th PL
NE 819th PL
NE 820th PL
NE 821st PL
NE 822nd PL
NE 823rd PL
NE 824th PL
NE 825th PL
NE 826th PL
NE 827th PL
NE 828th PL
NE 829th PL
NE 830th PL
NE 831st PL
NE 832nd PL
NE 833rd PL
NE 834th PL
NE 835th PL
NE 836th PL
NE 837th PL
NE 838th PL
NE 839th PL
NE 840th PL
NE 841st PL
NE 842nd PL
NE 843rd PL
NE

RUNWAY DATA TABLE

ITEM	11-29 EXISTING	11-29 FUTURE	7-25 EXISTING	7-25 FUTURE
Runway True Bearing	N 102° 16' 06.65" E	Same	N 61° 01' 20.43" E	Same
Runway Dimensions	150' x 7,501'	Same	100' x 4,158'	100' x 6,500'
Airport Reference Code (ARC)	C-III	Same	B-II	C-III
Design/Critical Aircraft (ADG)	B-727	B-737	LEARJET 24	CANADAIR REGIONAL JET
Runway Marking	PIR	Same	NPI	PIR
Runway Surface Type	Asphalt-Grooved	Same	Asphalt-Grooved	Same
Paved Shoulder Width	25'	Same	None	Same
Effective Runway Gradient (Percent)	-0.6%	Same	-0.5%	Same
Rated Pavement Strength (Lbs.) Aircraft Gear Type: S=Single D=Dual DT=Dual Tandem	S: 75,000 D: 260,000 DT: 320,000	Same	S: 75,000 D: 150,000 DT: 210,000	Same

RUNWAY THRESHOLD	11 EXISTING	11 FUTURE	29 EXISTING	29 FUTURE	7 EXISTING	7 FUTURE	25 EXISTING	25 FUTURE
Runway End Coordinates	29° 41' 26.007" N 82° 16' 50.155" W	Same	29° 41' 10.214" N 82° 15' 27.028" W	Same	29° 41' 25.102" N 82° 16' 56.609" W	29° 41' 29.98" N 82° 16' 46.51" W	29° 41' 45.038" N 82° 16' 15.366" W	29° 42' 01.16" N 82° 15' 42.05" W
Runway End Elevation (NAVD 1988)	147.0'	Same	104.6'	Same	151.5'	149.5	130.0'	128.0'
Displaced Threshold	None	Same	None	Same	None	2,377	None	Same
Runway Safety Area (Width x Length)	500' x 1,000'	Same	500' x 1,000'	Same	150' x 300'	500' x 1,000'	150' x 300'	500' x 1,000'
Runway Object Free Area (W x L)	800' x 1,000'	Same	800' x 1,000'	Same	500' x 300'	800' x 1,000'	500' x 300'	800' x 1,000'
Runway Instrument Approaches	GPS, VOR/DME	Same + ILS	ILS, GPS, VOR, NDB	Same	GPS, VOR/DME	Same + ILS	GPS, VOR	Same
Runway Lighting	HIRL	Same + CL, TDZ	HIRL	Same + CL	MIRL	HIRL	MIRL	HIRL
NAVAIDS and VISUAL AIDS	REIL, VASI-4	MALSR	MALSR	Same	PAPI-4	Same	PAPI-4	Same
Approach Surface Slope	34:1	50:1	50:1	Same	34:1	50:1	34:1	Same
Approach Visibility Minimums	1 Mile	1/2 Mile	1/2 Mile	Same	1 Mile	1/2 Mile	1 Mile	Same
Part 77 Approach Category	NPI	PIR	PIR	Same	NPI	PIR	NPI	Same

AIRPORT DATA TABLE

ITEM	EXISTING	FUTURE
Airport Role	Commercial Service	Same
Airport ARC	C-III	C-III
Airport Elevation	152.2' MSL	Same
Airport Reference Point – Latitude – Longitude	29° 41' 24.16" N 82° 16' 18.38" W	29° 41' 29.71" N 82° 16' 13.65" W
Airport Acreage – Aeronautical	1,870 ±	2,052 ±
Airport Acreage – Industrial and Office	150 ±	150 ±
Temperature Mean–Max. Hottest Month	91°F, July	Same
Visual Aids/NAVAIDS	MALSR, REIL, PAPI-4 ILS, VORTAC, NDB, Rotating Beacon, ATCT	Same

MODIFICATIONS TO FAA DESIGN STANDARDS

DATE OF FAA LETTER	DESCRIPTION

APPROVALS

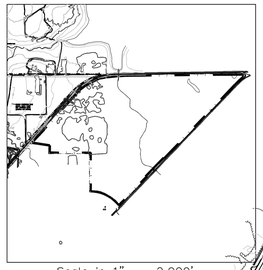
SPONSOR: GAINESVILLE–ALACHUA COUNTY REGIONAL AIRPORT AUTHORITY

_____ APPROVED BY _____ DATE

FAA: _____ APPROVED BY _____ DATE

FDOT: _____ APPROVED BY _____ DATE

DETAILED VIEW OF PROPERTY ON EAST SIDE OF S.R. 222



Scale in 1" = 2,000'

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE (ADO) PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

BLDG. NO.	EXISTING AIRPORT-OPERATED FACILITIES
1	Airport Terminal
2	Aircraft Maintenance Hangar
3	Aircraft Fueling Facility
4	Airfield Lighting Vault
5	ARFF Station
6	Air Traffic Control Tower
7	VORTAC
8	Rotating Beacon
9	Airport Maintenance Facility (To Be Relocated)
10	National Car Rental Service Facility (To Be Removed)
11	Short Term Parking
12	Long Term Parking
13	Flight Service Station
14	Ali Air Hangar
15	Ken Air Hangar
16	University of Florida Hangar (See Note 3)
17	University Aviation Center Storage Hangar
18	University Air Center Terminal Building
19	Federal Express Sort Facility
20	FAA Airways Facilities Sector Office
21	Port–A–Ports
22	T–Hangar Building A
23	Port–A–Ports
24	T–Hangar Building D
25	T–Hangar Building F
26	Storage Hangar
27	University Air Center Maintenance Hangar
28	Gator Air
29	Port–A–Ports
30	Sunshades
31	Joint Aviation Unit
32	T–Hangar Building I
33	T–Hangar Building J
34	Glideslope Facility (Runway 29)
35	FAA Building
36	Abandoned Maintenance Storage Hangar
37	GRU Lift Station

BLDG. NO.	FUTURE AIRPORT-OPERATED FACILITIES
A	Airport Terminal Expansion
B	Short Term Parking Expansion
C	Long Term Parking Expansion
D	Employee Parking Relocation and Expansion
E	Rental Car Ready Lot Relocation and Expansion
F	Rental Car Maintenance and Wash Facility
G	Airport Maintenance Facility (Approx. 6,000 sq Ft)
H	Air Cargo Terminal
J	Relocated Air Traffic Control Tower
K	Corporate Hangars
L	Aircraft Apron
M	GA FBO Building
N	Electrical Vault
P	Fuel Farm Expansion
Q	T–Hangar
R	3rd FBO Hangar
S	Glideslope Facility (Runway 7)
T	Glideslope Facility (Runway 11)

NOTES

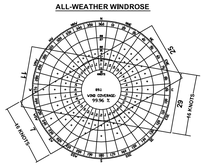
1. BUILDING RESTRICTION LINE CAN BE SHOWN AT AN IMAGINARY 35' HEIGHT BUILDING ALONG RUNWAY 11/29 AND A 25' HEIGHT BUILDING ALONG 7/25. ALL FUTURE BUILDINGS SHOULD BE CHECKED AGAINST FAA FAR PART 77 SURFACES

2. THE RUNWAYS ARE DESIGNATED 7/25 AND 11/29 ACCORDING TO RECENT MAGNETIC DECLINATION. THESE CHANGES HAVE BEEN MADE ON THE ALP. THE NARRATIVE REPORT WILL SHOW 6/24 AND 10/28

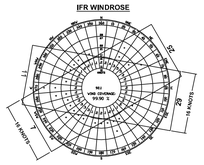
3. PRIOR TO IMPLEMENTATION OF AN ILS ON RUNWAY 7/25, AN AIRSPACE ANALYSIS WILL NEED TO BE CONDUCTED ON BUILDING 16 TO SEE IF IT VIOLATES THE BRL.

WIND ROSES

ALL-WEATHER WINDROSE



IFR WINDROSE



WIND COVERAGE

RUNWAY	CROSSWIND COMPONENT (KNOTS) 10.5 (12.0)	13.0 (15.0)	16.0 (18.0)
11/29	96.78%	99.02%	99.80%
7/25	96.91%	98.92%	99.66%
COMBINED	96.97%	99.04%	99.86%

WIND COVERAGE

RUNWAY	CROSSWIND COMPONENT (KNOTS) 10.5 (12.0)	13.0 (15.0)	16.0 (18.0)
11/29	96.78%	99.02%	99.80%
7/25	96.91%	98.92%	99.66%
COMBINED	96.97%	99.04%	99.86%

VFR WIND COVERAGE

RUNWAY	CROSSWIND COMPONENT (KNOTS) 10.5 (12.0)	13.0 (15.0)	16.0 (18.0)
11/29	92.92%	98.15%	99.58%
7/25	92.92%	98.15%	99.58%
COMBINED	92.92%	98.15%	99.58%

OBSERVATIONS: GAINESVILLE REGIONAL AIRPORT (1992-2001)

MAGNETIC DECLINATION 4°48'W
0°7'W /year (Jan. 2004)

0 500 1,000 1,500
Scale in Feet

LEGEND			
DESCRIPTION	EXISTING	FUTURE	TO BE REMOVED
LAND ACQUISITION HATCH	N/A		N/A
AIRPORT PROPERTY LINE			N/A
AIRPORT INDUSTRIAL PARK		N/A	N/A
FUTURE AVIATION RELATED DEVELOPMENT	N/A		N/A
FUTURE NON– AVIATION RELATED DEVELOPMENT	N/A		N/A
ACTIVE AIRFIELD PAVEMENT			
INACTIVE PAVEMENT (SHOULDERS, BLAST PADS)			
PAVED ROADS & PARKING			
BUILDINGS – ON AIRPORT PROPERTY			
BUILDINGS – OFF AIRPORT PROPERTY		N/A	N/A
AIRPORT REFERENCE POINT	ARP	ARP–F	N/A
RUNWAY PROTECTION ZONE	RPZ	RPZ–F	N/A
RUNWAY SAFETY AREA	RSA	RSA–F	N/A
RUNWAY OBJECT FREE AREA	OFA	OFA–F	N/A
BRL	BRL	N/A	N/A
FENCE			
PAPI (4–BOX OR 2–BOX AS SHOWN)			N/A
REIL		N/A	N/A
WIND CONE AND SEGMENTED CIRCLE		N/A	N/A
SUPPLEMENTAL WIND CONE		N/A	N/A
STORM DRAINAGE CHANNELS			N/A
NORMALLY DRY STORMWATER TREATMENT POND	DP	DP–F	N/A
SEASONALLY WET OR DRY STORMWATER TREATMENT POND	W/DP	N/A	N/A
NORMALLY WET STORMWATER TREATMENT POND	WP	N/A	N/A
WOODED AREA		N/A	N/A

RS&H®
Architectural, Engineering, Planning and Environmental Services

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256
904-256-2500 FAX 904-256-2501
www.rsandh.com
FL.Cert.Nos. AAC001886 · EB0005620 · LCC000210

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE ISSUED: AUGUST 2006
REVIEWED BY: JB
DRAWN BY: DB
DESIGNED BY: RO

AEP PROJECT NUMBER

© 1998 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

AIRPORT LAYOUT PLAN

SHEET NUMBER

ALP-3

RUNWAY DATA TABLE

ITEM	11-29 EXISTING	11-29 FUTURE	7-25 EXISTING	7-25 FUTURE
Runway True Bearing	N 102° 16' 06.65" E	Same	N 61° 01' 20.43" E	Same
Runway Dimensions	150' x 7,501'	Same	100' x 4,158'	100' x 6,500'
Airport Reference Code (ARC)	C-III	Same	B-II	C-III
Design/Critical Aircraft (ADG)	B-727	B-737	LEARJET 24	CANADAIR REGIONAL JET
Runway Marking	PIR	Same	NPI	PIR
Runway Surface Type	Asphalt-Grooved	Same	Asphalt-Grooved	Same
Paved Shoulder Width	25'	Same	None	Same
Effective Runway Gradient (Percent)	-0.6%	Same	-0.5%	Same
Rated Pavement Strength (Lbs.) Aircraft Gear Type: S=Single D=Dual DT=Dual Tandem	S: 75,000 D: 260,000 DT: 320,000	Same	S: 75,000 D: 150,000 DT: 210,000	Same

RUNWAY THRESHOLD	11 EXISTING	11 FUTURE	29 EXISTING	29 FUTURE	7 EXISTING	7 FUTURE	25 EXISTING	25 FUTURE
Runway End Coordinates	29° 41' 26.007" N 82° 16' 50.155" W	Same	29° 41' 10.214" N 82° 15' 27.028" W	Same	29° 41' 25.102" N 82° 16' 56.609" W	29° 41' 29.98" N 82° 16' 46.51" W	29° 41' 45.038" N 82° 16' 15.366" W	29° 42' 01.16" N 82° 15' 42.05" W
Runway End Elevation (NAVD 1988)	147.0'	Same	104.6'	Same	151.5'	149.5	130.0'	128.0'
Displaced Threshold	None	Same	None	Same	None	2,377	None	Same
Runway Safety Area (Width x Length)	500' x 1,000'	Same	500' x 1,000'	Same	150' x 300'	500' x 1,000'	150' x 300'	500' x 1,000'
Runway Object Free Area (W x L)	800' x 1,000'	Same	800' x 1,000'	Same	500' x 300'	800' x 1,000'	500' x 300'	800' x 1,000'
Runway Instrument Approaches	GPS, VOR/DME	Same + ILS	ILS, GPS, VOR, NDB	Same	GPS, VOR/DME	Same + ILS	GPS, VOR	Same
Runway Lighting	HIRL	Same + CL, TDZ	HIRL	Same + CL	MIRL	HIRL	MIRL	HIRL
NAVAIDS and VISUAL AIDS	REIL, VASI-4	MALSR	MALSR	Same	PAPI-4	Same	PAPI-4	Same
Approach Surface Slope	34:1	50:1	50:1	Same	34:1	50:1	34:1	Same
Approach Visibility Minimums	1 Mile	1/2 Mile	1/2 Mile	Same	1 Mile	1/2 Mile	1 Mile	Same
Part 77 Approach Category	NPI	PIR	PIR	Same	NPI	PIR	NPI	Same

AIRPORT DATA TABLE

ITEM	EXISTING	FUTURE
Airport Role	Commercial Service	Same
Airport ARC	C-III	C-III
Airport Elevation	152.2' MSL	Same
Airport Reference Point – Latitude – Longitude	29° 41' 24.16" N 82° 16' 18.38" W	29° 41' 29.71" N 82° 16' 13.65" W
Airport Acreage – Aeronautical	1,870 ±	2,052 ±
Airport Acreage – Industrial and Office	150 ±	150 ±
Temperature Mean–Max. Hottest Month	91°F, July	Same
Visual Aids/NAVAIDS	MALSR, REIL, PAPI-4 ILS, VORTAC, NDB, Rotating Beacon, ATCT	Same

MODIFICATIONS TO FAA DESIGN STANDARDS

DATE OF FAA LETTER	DESCRIPTION

APPROVALS

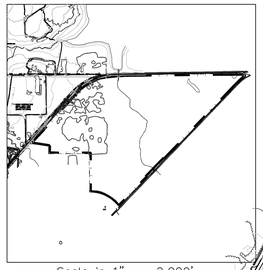
SPONSOR: GAINESVILLE–ALACHUA COUNTY REGIONAL AIRPORT AUTHORITY

_____ APPROVED BY _____ DATE

FAA: _____ APPROVED BY _____ DATE

FDOT: _____ APPROVED BY _____ DATE

DETAILED VIEW OF PROPERTY ON EAST SIDE OF S.R. 222



Scale in 1" = 2,000'

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE (ADO) PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

BLDG. NO.	EXISTING AIRPORT-OPERATED FACILITIES
1	Airport Terminal
2	Aircraft Maintenance Hangar
3	Aircraft Fueling Facility
4	Airfield Lighting Vault
5	ARFF Station
6	Air Traffic Control Tower
7	VORTAC
8	Rotating Beacon
9	Airport Maintenance Facility (To Be Relocated)
10	National Car Rental Service Facility (To Be Removed)
11	Short Term Parking
12	Long Term Parking
13	Flight Service Station
14	Ali Air Hangar
15	Ken Air Hangar
16	University of Florida Hangar (See Note 3)
17	University Aviation Center Storage Hangar
18	University Air Center Terminal Building
19	Federal Express Sort Facility
20	FAA Airways Facilities Sector Office
21	Port–A–Ports
22	T–Hangar Building A
23	Port–A–Ports
24	T–Hangar Building D
25	T–Hangar Building F
26	Storage Hangar
27	University Air Center Maintenance Hangar
28	Gator Air
29	Port–A–Ports
30	Sunshades
31	Joint Aviation Unit
32	T–Hangar Building I
33	T–Hangar Building J
34	Glideslope Facility (Runway 29)
35	FAA Building
36	Abandoned Maintenance Storage Hangar
37	GRU Lift Station

BLDG. NO.	FUTURE AIRPORT-OPERATED FACILITIES
A	Airport Terminal Expansion
B	Short Term Parking Expansion
C	Long Term Parking Expansion
D	Employee Parking Relocation and Expansion
E	Rental Car Ready Lot Relocation and Expansion
F	Rental Car Maintenance and Wash Facility
G	Airport Maintenance Facility (Approx. 6,000 sq Ft)
H	Air Cargo Terminal
J	Relocated Air Traffic Control Tower
K	Corporate Hangars
L	Aircraft Apron
M	GA FBO Building
N	Electrical Vault
P	Fuel Farm Expansion
Q	T–Hangar
R	3rd FBO Hangar
S	Glideslope Facility (Runway 7)
T	Glideslope Facility (Runway 11)

NOTES

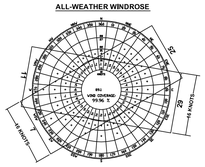
1. BUILDING RESTRICTION LINE CAN BE SHOWN AT AN IMAGINARY 35' HEIGHT BUILDING ALONG RUNWAY 11/29 AND A 25' HEIGHT BUILDING ALONG 7/25. ALL FUTURE BUILDINGS SHOULD BE CHECKED AGAINST FAA FAR PART 77 SURFACES

2. THE RUNWAYS ARE DESIGNATED 7/25 AND 11/29 ACCORDING TO RECENT MAGNETIC DECLINATION. THESE CHANGES HAVE BEEN MADE ON THE ALP. THE NARRATIVE REPORT WILL SHOW 6/24 AND 10/28

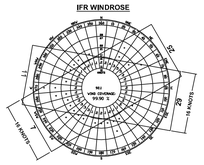
3. PRIOR TO IMPLEMENTATION OF AN ILS ON RUNWAY 7/25, AN AIRSPACE ANALYSIS WILL NEED TO BE CONDUCTED ON BUILDING 16 TO SEE IF IT VIOLATES THE BRL.

WIND ROSES

ALL-WEATHER WINDROSE



IFR WINDROSE



WIND COVERAGE

RUNWAY	CROSSWIND COMPONENT (KNOTS) 10.5 (12.0)	13.0 (15.0)	16.0 (18.0)
11/29	96.78%	99.02%	99.80%
7/25	96.91%	98.92%	99.66%
COMBINED	96.97%	99.04%	99.86%

WIND COVERAGE

RUNWAY	CROSSWIND COMPONENT (KNOTS) 10.5 (12.0)	13.0 (15.0)	16.0 (18.0)
11/29	96.78%	99.02%	99.80%
7/25	96.91%	98.92%	99.66%
COMBINED	96.97%	99.04%	99.86%

VFR WIND COVERAGE

RUNWAY	CROSSWIND COMPONENT (KNOTS) 10.5 (12.0)	13.0 (15.0)	16.0 (18.0)
11/29	92.92%	98.15%	99.58%
7/25	92.92%	98.15%	99.58%
COMBINED	92.92%	98.15%	99.58%

OBSERVATIONS: GAINESVILLE REGIONAL AIRPORT (1992-2001)

MAGNETIC DECLINATION 4°48'W
0°7'W /year (Jan. 2004)

0 500 1,000 1,500
Scale in Feet

LEGEND			
DESCRIPTION	EXISTING	FUTURE	TO BE REMOVED
LAND ACQUISITION HATCH	N/A		N/A
AIRPORT PROPERTY LINE			N/A
AIRPORT INDUSTRIAL PARK		N/A	N/A
FUTURE AVIATION RELATED DEVELOPMENT	N/A		N/A
FUTURE NON– AVIATION RELATED DEVELOPMENT	N/A		N/A
ACTIVE AIRFIELD PAVEMENT			
INACTIVE PAVEMENT (SHOULDERS, BLAST PADS)			
PAVED ROADS & PARKING			
BUILDINGS – ON AIRPORT PROPERTY			
BUILDINGS – OFF AIRPORT PROPERTY		N/A	N/A
AIRPORT REFERENCE POINT	ARP	ARP–F	N/A
RUNWAY PROTECTION ZONE	RPZ	RPZ–F	N/A
RUNWAY SAFETY AREA	RSA	RSA–F	N/A
RUNWAY OBJECT FREE AREA	OFA	OFA–F	N/A
BRL	BRL	N/A	N/A
FENCE			
PAPI (4–BOX OR 2–BOX AS SHOWN)			N/A
REIL		N/A	N/A
WIND CONE AND SEGMENTED CIRCLE		N/A	N/A
SUPPLEMENTAL WIND CONE		N/A	N/A
STORM DRAINAGE CHANNELS			N/A
NORMALLY DRY STORMWATER TREATMENT POND	DP	DP–F	N/A
SEASONALLY WET OR DRY STORMWATER TREATMENT POND	W/DP	N/A	N/A
NORMALLY WET STORMWATER TREATMENT POND	WP	N/A	N/A
WOODED AREA		N/A	N/A

RS&H®
Architectural, Engineering, Planning and Environmental Services

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256
904-256-2500 FAX 904-256-2501
www.rsandh.com
FL.Cert.Nos. AAC001886 · EB0005620 · LCC000210

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE ISSUED: AUGUST 2006
REVIEWED BY: JB
DRAWN BY: DB
DESIGNED BY: RO

AEP PROJECT NUMBER

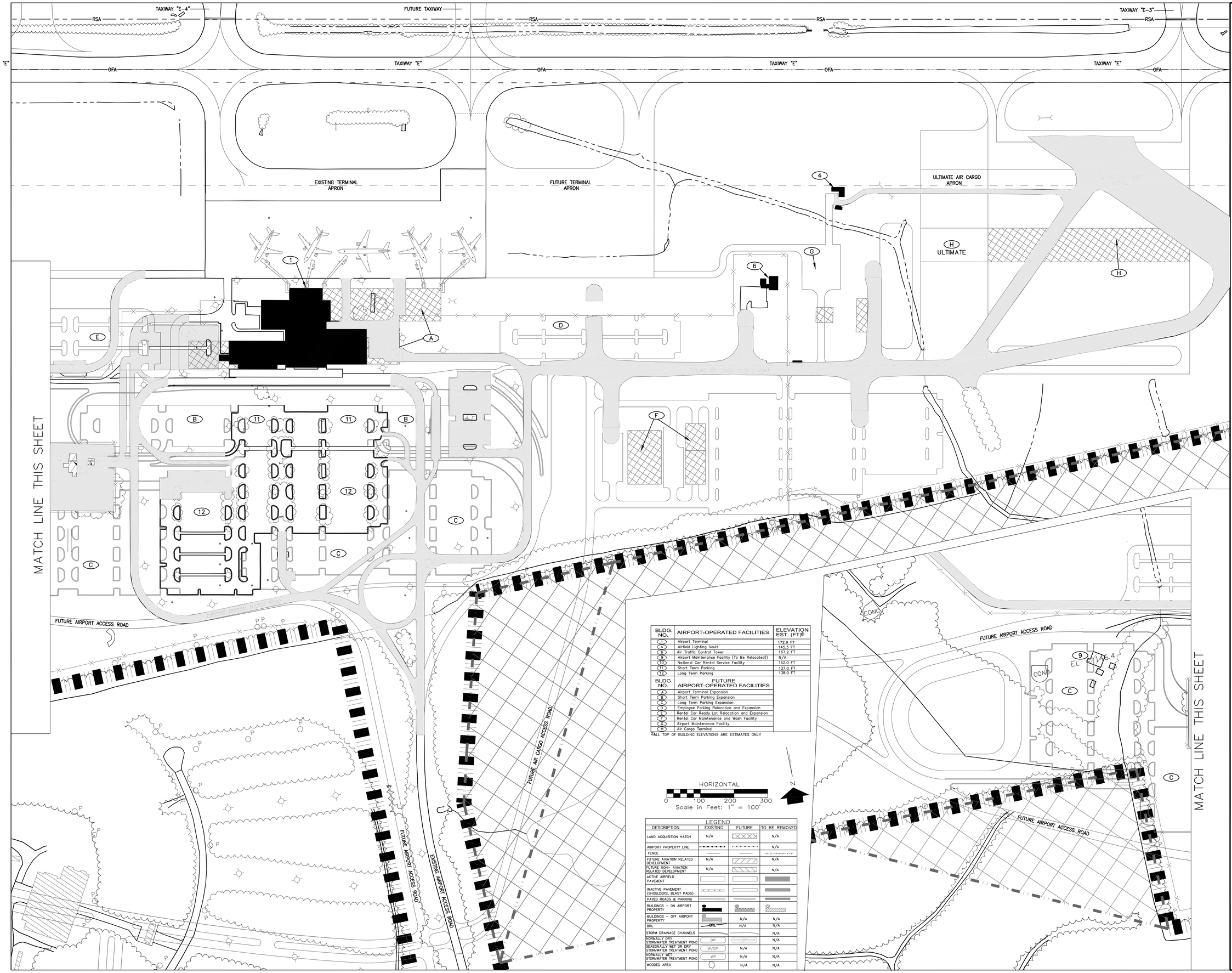
© 1998 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

AIRPORT LAYOUT PLAN

SHEET NUMBER

ALP-3



BLDG. NO.	AIRPORT-OPERATED FACILITIES	ELEVATION EST. (FT)①
1	Airport Terminal	172.9 FT
4	Airfield Lighting Vault	145.3 FT
6	Air Traffic Control Tower	167.2 FT
9	Airport Maintenance Facility (To Be Relocated))	N/A
10	National Car Rental Service Facility	162.0 FT
11	Short Term Parking	137.0 FT
12	Long Term Parking	138.0 FT
BLDG. NO.	FUTURE AIRPORT-OPERATED FACILITIES	
A	Airport Terminal Expansion	
B	Short Term Parking Expansion	
C	Long Term Parking Expansion	
D	Employee Parking Relocation and Expansion	
E	Rental Car Ready Lot Relocation and Expansion	
F	Rental Car Maintenance and Wash Facility	
G	Airport Maintenance Facility	
H	Air Cargo Terminal	

① ALL TOP OF BUILDING ELEVATIONS ARE ESTIMATES ONLY

LEGEND

DESCRIPTION	EXISTING	FUTURE	TO BE REMOVED
LAND ACQUISITION HATCH	N/A		N/A
AIRPORT PROPERTY LINE			N/A
FENCE			
FUTURE AVIATION RELATED DEVELOPMENT	N/A		N/A
FUTURE NON- AVIATION RELATED DEVELOPMENT	N/A		N/A
ACTIVE AIRFIELD PAVEMENT			
INACTIVE PAVEMENT (SHOULDERS, BLAST PADS)			
PAVED ROADS & PARKING			
BUILDINGS – ON AIRPORT PROPERTY			
BUILDINGS – OFF AIRPORT PROPERTY		N/A	N/A
BRL	BRL	N/A	N/A
STORM DRAINAGE CHANNELS			N/A
NORMALLY DRY STORMWATER TREATMENT POND	DP	DP	N/A
SEASONALLY WET OR DRY STORMWATER TREATMENT POND	W/DP	N/A	N/A
NORMALLY WET STORMWATER TREATMENT POND	WP	N/A	N/A
WOODED AREA		N/A	N/A

RS&H®
Architectural, Engineering, Planning and Environmental Services

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256
904-256-2500 FAX 904-256-2501
www.rsandh.com
FL.Cert.Nos. AAC001886 · EB0005620 · LC0000210

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE ISSUED: AUGUST 2006
REVIEWED BY: JB
DRAWN BY: DB
DESIGNED BY: RO

AEP PROJECT NUMBER

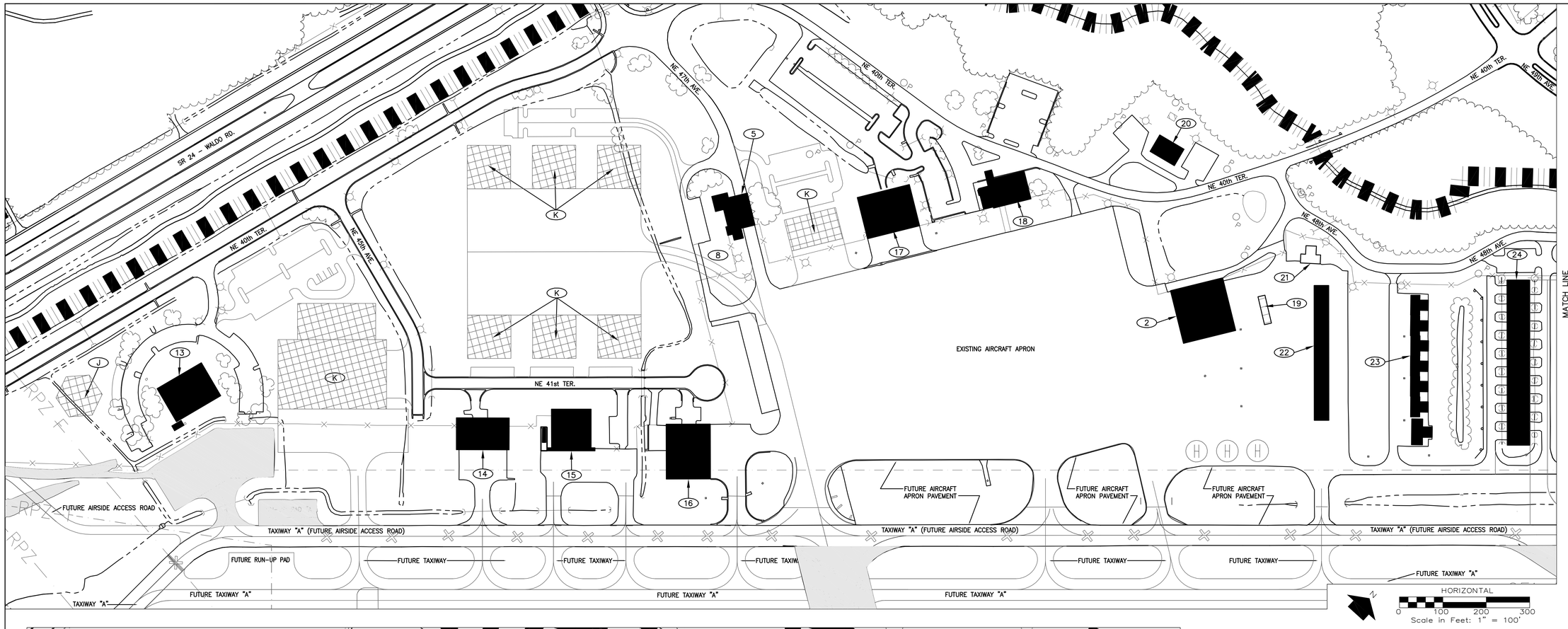
© 1998 REYNOLDS, SMITH AND HILLS INC.

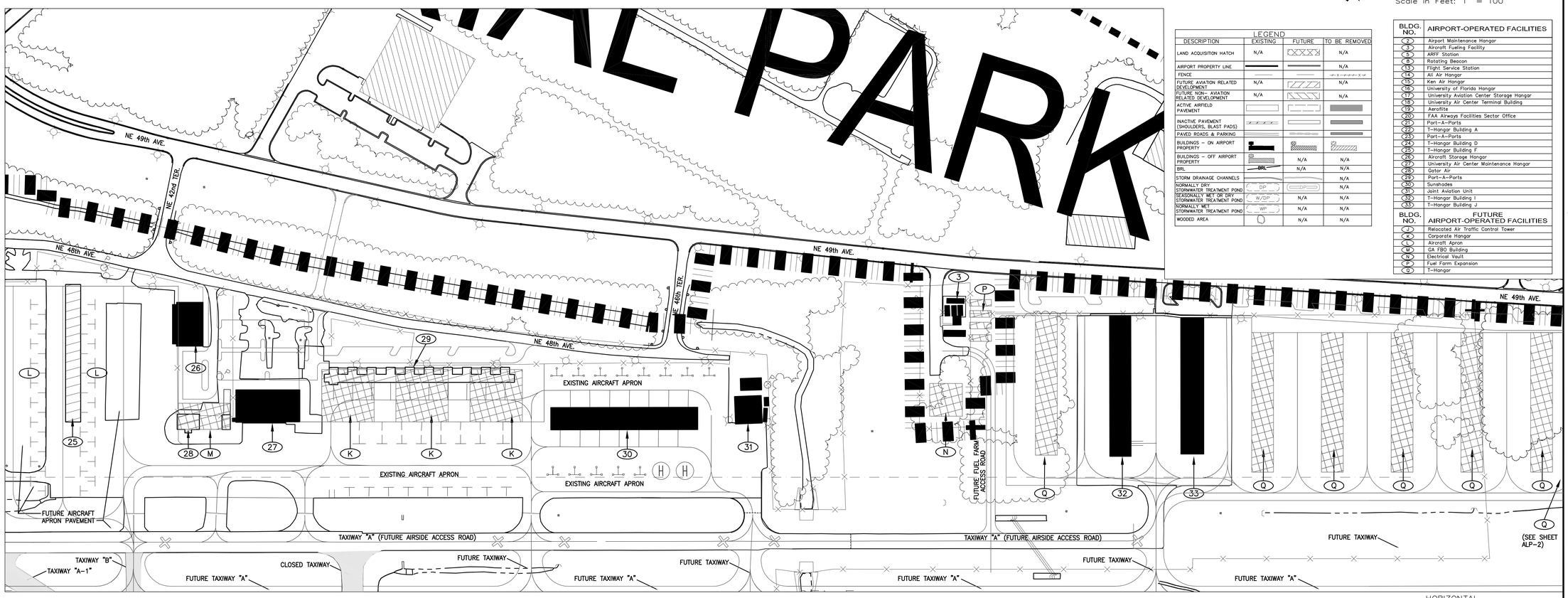
SHEET TITLE

TERMINAL AREA PLAN

SHEET NUMBER

ALP-4





LEGEND

DESCRIPTION	EXISTING	FUTURE	TO BE REMOVED
LAND ACQUISITION HATCH	N/A		N/A
AIRPORT PROPERTY LINE			N/A
FENCE			
FUTURE AVIATION RELATED DEVELOPMENT	N/A		N/A
FUTURE NON- AVIATION RELATED DEVELOPMENT	N/A		N/A
ACTIVE AIRFIELD PAVEMENT			
INACTIVE PAVEMENT (SHOULDERS, BLAST PADS)			
PAVED ROADS & PARKING			
BUILDINGS – ON AIRPORT PROPERTY			
BUILDINGS – OFF AIRPORT PROPERTY		N/A	N/A
BRL	BRL	N/A	N/A
STORM DRAINAGE CHANNELS			N/A
NORMALLY DRY STORMWATER TREATMENT POND	DP	DP	N/A
SEASONALLY WET OR DRY STORMWATER TREATMENT POND	W/DP	N/A	N/A
NORMALLY WET STORMWATER TREATMENT POND	WP	N/A	N/A
WOODED AREA		N/A	N/A

BLDG. NO.	AIRPORT-OPERATED FACILITIES
2	Airport Maintenance Hangar
3	Aircraft Fueling Facility
5	ARFF Station
8	Rotating Beacon
13	Flight Service Station
14	All Air Hangar
15	Ken Air Hangar
16	University of Florida Hangar
17	University Aviation Center Storage Hangar
18	University Air Center Terminal Building
19	Aerofilte
20	FAA Airways Facilities Sector Office
21	Port-A-Ports
22	T-Hangar Building A
23	Port-A-Ports
24	T-Hangar Building D
25	T-Hangar Building F
26	Aircraft Storage Hangar
27	University Air Center Maintenance Hangar
28	Gator Air
29	Port-A-Ports
30	Sunshades
31	Joint Aviation Unit
32	T-Hangar Building I
33	T-Hangar Building J

BLDG. NO.	FUTURE AIRPORT-OPERATED FACILITIES
J	Relocated Air Traffic Control Tower
K	Corporate Hangar
L	Aircraft Apron
M	GA FBO Building
N	Electrical Vault
P	Fuel Farm Expansion
Q	T-Hangar

RS&H®

Architectural, Engineering, Planning and Environmental Services

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256
904-256-2500 FAX 904-256-2501
www.rsandh.com
FL.Cert.Nos. AAC001886 · EB0005620 · LC0000210

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE ISSUED: AUGUST 2006
REVIEWED BY: JB
DRAWN BY: DB
DESIGNED BY: RO

AEP PROJECT NUMBER

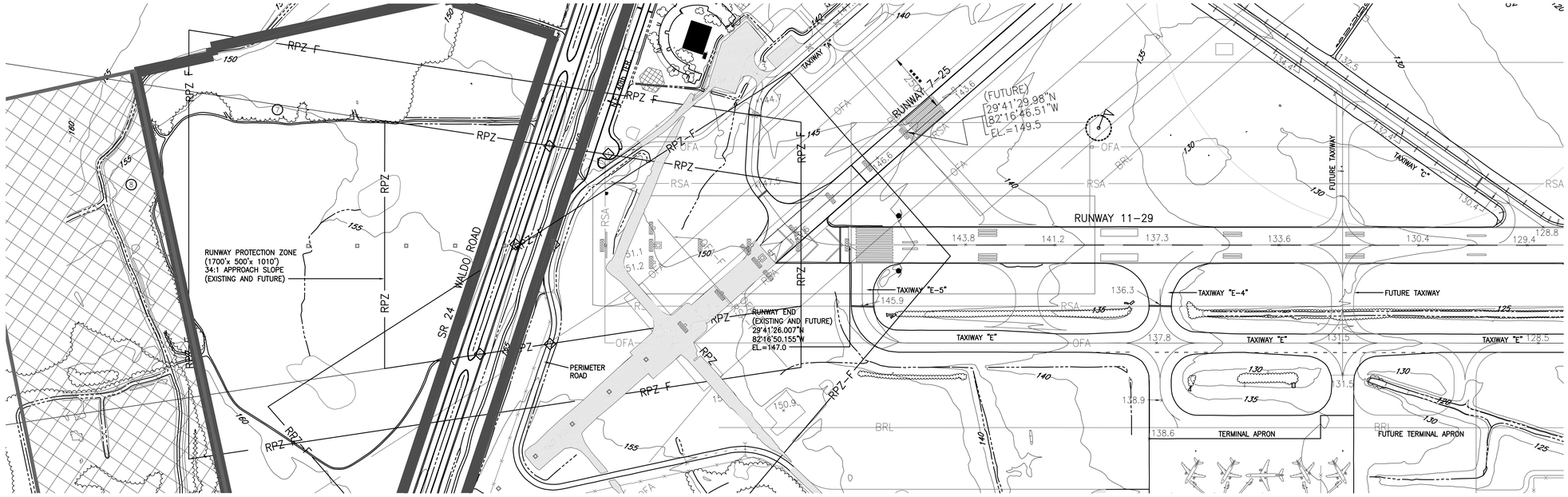
© 1998 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

GENERAL AVIATION AREA PLAN

SHEET NUMBER

ALP-5

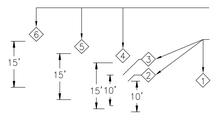


RUNWAY 11 INNER PLAN VIEW

LEGEND

- ○ OBSTRUCTION TO FAR PART 77 SURFACE(S).
- ◇ TRAVERSE WAY BENEATH APPROACH SURFACE.

0 200 400 600
Scale in Feet: 1" = 200'



OBSTRUCTION CHART

OBJECT DESCRIPTION	OBJECT IDENTIFIER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	SURFACE ELEVATION	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
Perimeter Road	1	159'	NPI	None	169'	None	None
Perimeter Road	2	161'	NPI	None	176'	None	None
Perimeter Road	3	163'	NPI	None	177'	None	None
Waldo Road	4	167'	NPI	None	177'	None	None
Waldo Road	5	170'	NPI	None	181'	None	None
Waldo Road	6	174'	NPI	None	185'	None	None
Tree	7	214'	NPI	34:1 Approach	210'	4'	Remove
Tree	8	229'	NPI	34:1 Approach	227'	2'	Purchase/Remove

OBSTRUCTION CHART(FUTURE 50:1)

OBJECT DESCRIPTION	OBJECT IDENTIFIER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	SURFACE ELEVATION	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
Perimeter Road	1	159'	NPI	None	169'	None	None
Perimeter Road	2	161'	NPI	None	176'	None	None
Perimeter Road	3	163'	NPI	None	177'	None	None
Waldo Road	4	167'	NPI	None	177'	None	None
Waldo Road	5	170'	NPI	None	181'	None	None
Waldo Road	6	174'	NPI	50:1 Approach	185'	1'	Remove/Relocate
Tree	7	214'	NPI	50:1 Approach	210'	4'	Remove
Tree	8	229'	NPI	50:1 Approach	227'	2'	Purchase/Remove

N

HORIZONTAL
0 200 400 600
Scale in Feet: 1" = 200'

VERTICAL
0 20 40 60
Scale in Feet: 1" = 20'

RS&H®
Architectural, Engineering, Planning and Environmental Services

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256
904-256-2500 FAX 904-256-2501
www.rsandh.com
FL.Cert.Nos. AAC001886 · EB0005620 · LCC000210

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE ISSUED: AUGUST 2006
REVIEWED BY: JB
DRAWN BY: DB
DESIGNED BY: RO

AEP PROJECT NUMBER

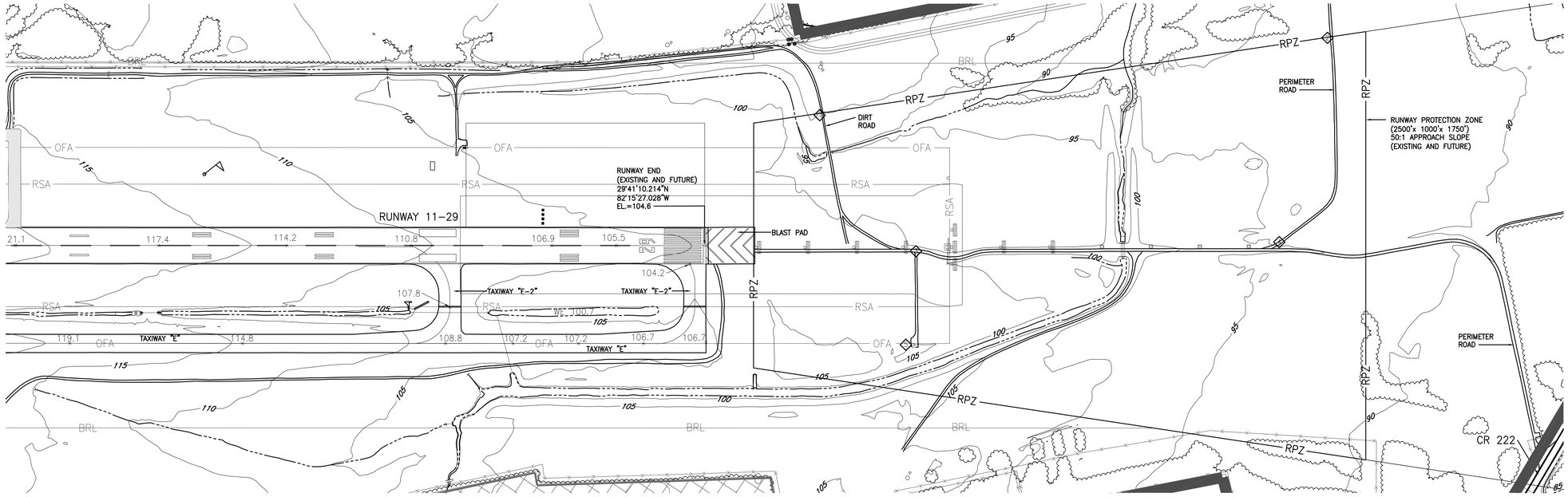
© 1998 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

RUNWAY APPROACH PROFILE and RUNWAY PROTECTON ZONE RUNWAY 11

SHEET NUMBER

ALP-6



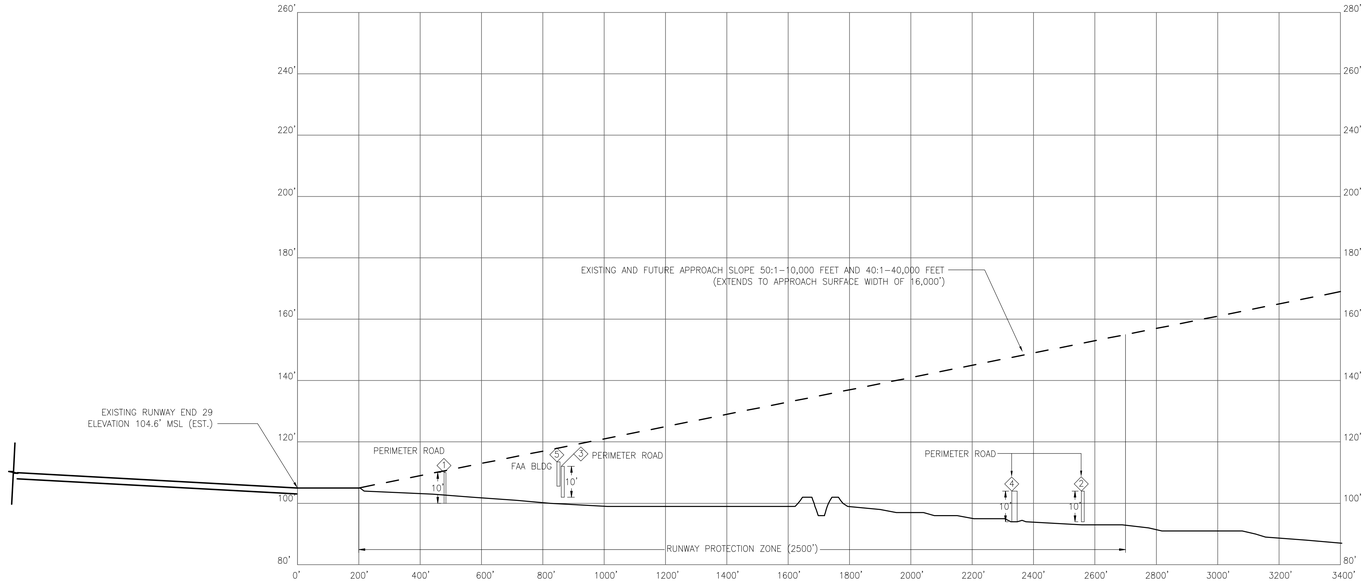
0 200 400 600
Scale in Feet: 1" = 200'

RUNWAY 29 INNER PLAN VIEW

LEGEND

○ OBSTRUCTION TO FAR PART 77 SURFACE(S).

◇ TRAVERSE WAY BENEATH APPROACH SURFACE.



RUNWAY 29 INNER PROFILE VIEW

OBSTRUCTION CHART

OBJECT DESCRIPTION	OBJECT IDENTIFIER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	SURFACE ELEVATION	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
Perimeter Road	1	110'	PIR	None	111'	None	None
Perimeter Road	2	104'	PIR	None	153'	None	None
Perimeter Road	3	112'	PIR	None	119'	None	None
Perimeter Road	4	104'	PIR	None	148'	None	None
FAA Building	5	113'	PIR	None	119'	None	None

N

HORIZONTAL
0 200 400 600
Scale in Feet: 1" = 200'

VERTICAL
0 20 40 60
Scale in Feet: 1" = 20'

RS&H®
Architectural, Engineering, Planning and Environmental Services
Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256
904-256-2500 FAX 904-256-2501
www.rsandh.com
FL.Cert.Nos. AAC001886 · EB0005620 · LCC000210

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE ISSUED: AUGUST 2006
REVIEWED BY: JB
DRAWN BY: DB
DESIGNED BY: RO

AEP PROJECT NUMBER

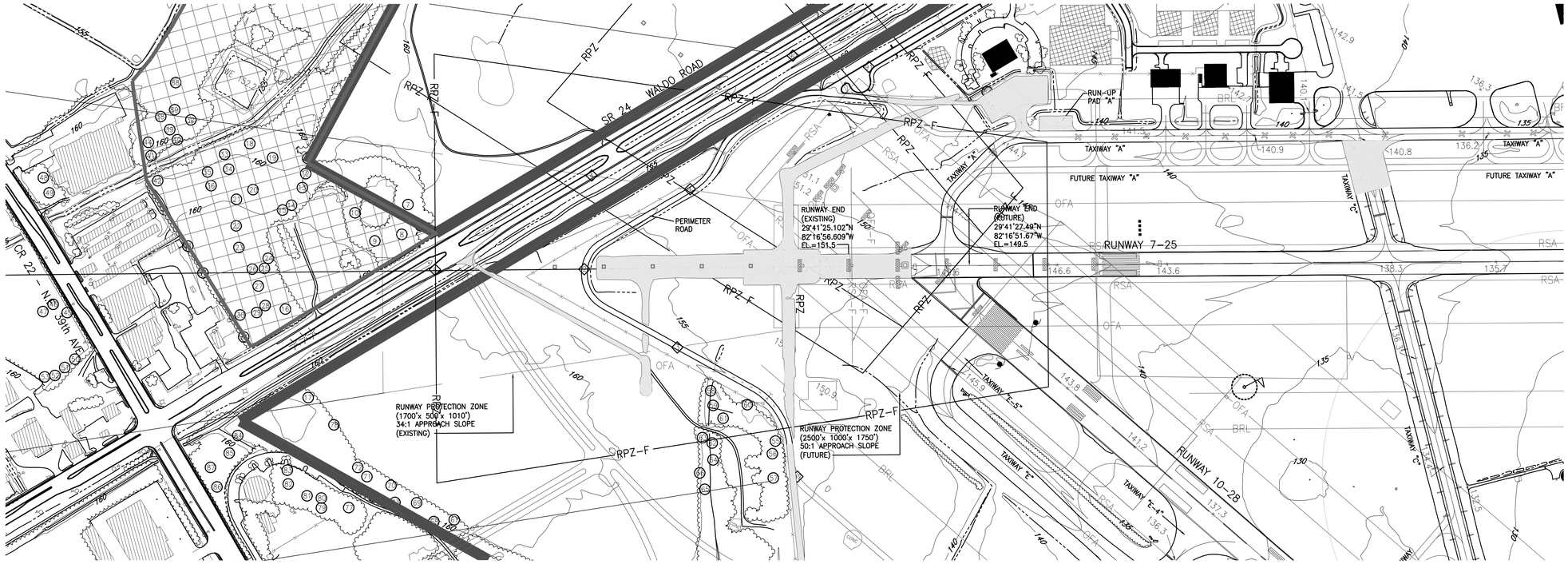
© 1998 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

RUNWAY APPROACH PROFILE and RUNWAY PROTECTON ZONE RUNWAY 29

SHEET NUMBER

ALP-7



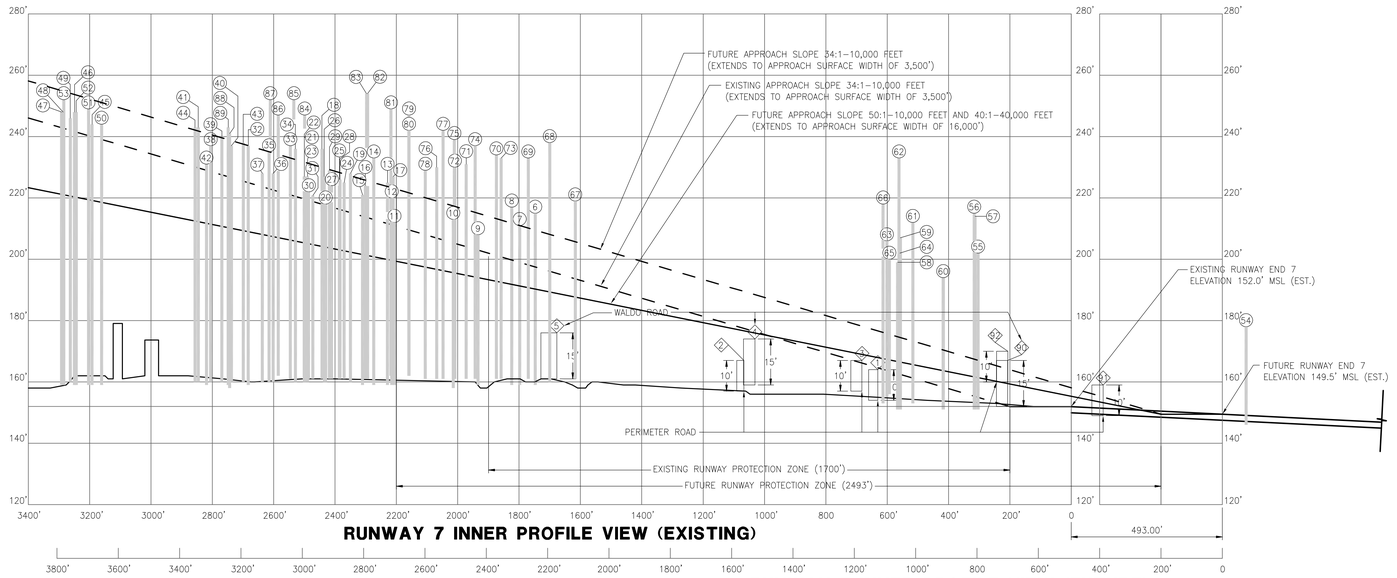
RUNWAY 7 INNER PLAN VIEW

LEGEND

○ OBSTRUCTION TO FAR PART 77 SURFACE(S).

◇ TRAVERSE WAY BENEATH APPROACH SURFACE.

0 200 400
Scale in Feet: 1" = 200'



RUNWAY 7 INNER PROFILE VIEW (EXISTING)

RUNWAY 7 INNER PROFILE VIEW (FUTURE)

VERTICAL
0 20 40 60
Scale in Feet: 1" = 20'

HORIZONTAL
0 200 400 600
Scale in Feet: 1" = 200'

OBSTRUCTION CHART (EXISTING)

OBJECT DESCRIPTION	OBJECT IDENTIFIER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	SURFACE ELEVATION	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
Perimeter Road	1	164'	NPI	None	165'	None	None
Perimeter Road	2	167'	NPI	None	177'	None	None
Perimeter Road	3	167'	NPI	34:1 Approach	166'	None	None
Waldo Road	4	174'	NPI	None	176'	None	None
Waldo Road	5	176'	NPI	None	195'	None	None
Tree	6	215'	NPI	34:1 Approach	197'	18'	Purchase/Remove
Tree	7	211'	NPI	34:1 Approach	199'	12'	Remove
Tree	8	217'	NPI	34:1 Approach	200'	17'	Purchase/Remove
Tree	9	208'	NPI	34:1 Approach	203'	5'	Purchase/Remove
Tree	10	214'	NPI	34:1 Approach	205'	9'	Purchase/Remove
Tree	11	212'	NPI	34:1 Approach	210'	2'	Purchase/Remove
Tree	12	220'	NPI	34:1 Approach	211'	9'	Purchase/Remove
Tree	13	225'	NPI	34:1 Approach	212'	13'	Purchase/Remove
Tree	14	233'	NPI	34:1 Approach	213'	20'	Purchase/Remove
Tree	15	221'	NPI	34:1 Approach	214'	7'	Purchase/Remove
Tree	16	224'	NPI	34:1 Approach	214'	10'	Purchase/Remove
Tree	17	227'	NPI	34:1 Approach	211'	16'	Remove
Tree	18	236'	NPI	34:1 Approach	218'	18'	Purchase/Remove
Tree	19	228'	NPI	34:1 Approach	215'	13'	Purchase/Remove
Tree	20	218'	NPI	34:1 Approach	217'	1'	Purchase/Remove
Tree	21	227'	NPI	34:1 Approach	220'	7'	Purchase/Remove
Tree	22	227'	NPI	34:1 Approach	220'	7'	Purchase/Remove
Tree	23	225'	NPI	34:1 Approach	219'	6'	Purchase/Remove
Tree	24	225'	NPI	34:1 Approach	216'	9'	Purchase/Remove
Tree	25	224'	NPI	34:1 Approach	216'	8'	Purchase/Remove
Tree	26	227'	NPI	34:1 Approach	218'	9'	Purchase/Remove
Tree	27	224'	NPI	34:1 Approach	217'	7'	Purchase/Remove
Tree	28	226'	NPI	34:1 Approach	216'	10'	Purchase/Remove
Tree	29	229'	NPI	34:1 Approach	217'	12'	Purchase/Remove
Tree	30	222'	NPI	34:1 Approach	219'	3'	Purchase/Remove

OBSTRUCTION CHART (EXISTING)

OBJECT DESCRIPTION	OBJECT IDENTIFIER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	SURFACE ELEVATION	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
Tree	31	221'	NPI	34:1 Approach	219'	2'	Purchase/Remove
Tree	32	237'	NPI	34:1 Approach	224'	13'	Purchase/Remove
Tree	33	237'	NPI	34:1 Approach	221'	16'	Purchase/Remove
Tree	34	236'	NPI	34:1 Approach	220'	16'	Purchase/Remove
Tree	35	235'	NPI	34:1 Approach	223'	12'	Purchase/Remove
Tree	36	228'	NPI	34:1 Approach	223'	5'	Purchase/Remove
Tree	37	228'	NPI	34:1 Approach	224'	4'	Purchase/Remove
Tree	38	237'	NPI	34:1 Approach	229'	8'	Purchase/Remove
Tree	39	240'	NPI	34:1 Approach	228'	12'	Purchase/Remove
Tree	40	237'	NPI	34:1 Approach	227'	10'	Purchase/Remove
Tree	41	243'	NPI	34:1 Approach	230'	13'	Purchase/Remove
Tree	42	231'	NPI	34:1 Approach	229'	2'	Purchase/Remove
Tree	43	238'	NPI	34:1 Approach	225'	13'	Purchase/Remove
Tree	44	243'	NPI	34:1 Approach	230'	13'	Purchase/Remove
Tree	45	244'	NPI	34:1 Approach	240'	4'	Purchase/Remove
Tree	46	248'	NPI	34:1 Approach	242'	6'	Purchase/Remove
Tree	47	248'	NPI	34:1 Approach	243'	5'	Purchase/Remove
Tree	48	248'	NPI	34:1 Approach	243'	5'	Purchase/Remove
Tree	49	246'	NPI	34:1 Approach	242'	4'	Purchase/Remove
Tree	50	244'	NPI	34:1 Approach	239'	5'	Purchase/Remove
Tree	51	249'	NPI	34:1 Approach	240'	9'	Purchase/Remove
Tree	52	248'	NPI	34:1 Approach	241'	7'	Purchase/Remove
Tree	53	252'	NPI	34:1 Approach	242'	10'	Purchase/Remove

OBSTRUCTION CHART (FUTURE 50:1)

OBJECT DESCRIPTION	OBJECT IDENTIFIER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	SURFACE ELEVATION	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
Perimeter Road	2	167'	NPI	None	205'	None	None
Waldo Road	5	176'	NPI	None	217'	None	None
Tree	14	233'	NPI	50:1 Approach	229'	4'	Purchase/Remove
Tree	18	236'	NPI	50:1 Approach	232'	4'	Purchase/Remove
Tree	33	237'	NPI	50:1 Approach	235'	2'	Purchase/Remove
Tree	34	236'	NPI	50:1 Approach	234'	2'	Purchase/Remove
Tree	39	240'	NPI	50:1 Approach	239'	1'	Purchase/Remove
Tree	41	243'	NPI	50:1 Approach	240'	3'	Purchase/Remove
Tree	44	243'	NPI	50:1 Approach	241'	2'	Purchase/Remove
Tree	51	249'	NPI	50:1 Approach	240'	9'	Purchase/Remove
Tree	53	252'	NPI	50:1 Approach	249'	3'	Purchase/Remove
Light Pole	54	178'	NPI	50:1 Approach	172'	6'	Remove
Tree	55	202'	NPI	50:1 Approach	190'	12'	Remove
Tree	56	215'	NPI	50:1 Approach	190'	25'	Remove
Tree	57	214'	NPI	50:1 Approach	190'	24'	Remove
Tree	58	199'	NPI	50:1 Approach	195'	4'	Remove
Tree	59	207'	NPI	50:1 Approach	195'	12'	Remove
Tree	60	194'	NPI	50:1 Approach	192'	2'	Remove
Tree	61	212'	NPI	50:1 Approach	194'	18'	Remove
Tree	62	233'	NPI	50:1 Approach	195'	38'	Remove
Tree	63	206'	NPI	50:1 Approach	196'	10'	Remove
Tree	64	202'	NPI	50:1 Approach	195'	7'	Remove
Tree	65	200'	NPI	50:1 Approach	196'	4'	Remove
Tree	66	218'	NPI	50:1 Approach	196'	22'	Remove
Tree	67	219'	NPI	50:1 Approach	216'	3'	Remove
Tree	68	238'	NPI	50:1 Approach	218'	20'	Remove
Tree	69	233'	NPI	50:1 Approach	219'	14'	Remove
Tree	70	234'	NPI	50:1 Approach	221'	13'	Remove
Tree	71	231'	NPI	50:1 Approach	223'	8'	Remove
Tree	72	230'	NPI	50:1 Approach	224'	6'	Remove

OBSTRUCTION CHART (FUTURE 50:1)

OBJECT DESCRIPTION	OBJECT IDENTIFIER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	SURFACE ELEVATION	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
Tree	73	233'	NPI	50:1 Approach	221'	12'	Remove
Tree	74	237'	NPI	50:1 Approach	223'	14'	Remove
Tree	75	239'	NPI	50:1 Approach	224'	15'	Remove
Tree	76	230'	NPI	50:1 Approach	225'	5'	Remove
Tree	77	242'	NPI	50:1 Approach	225'	17'	Purchase/Remove
Tree	78	229'	NPI	50:1 Approach	226'	3'	Purchase/Remove
Tree	79	247'	NPI	50:1 Approach	227'	20'	Purchase/Remove
Tree	80	242'	NPI	50:1 Approach	227'	15'	Purchase/Remove
Tree	81	249'	NPI	50:1 Approach	228'	21'	Purchase/Remove
Tree	82	254'	NPI	50:1 Approach	230'	24'	Purchase/Remove
Tree	83	254'	NPI	50:1 Approach	230'	24'	Purchase/Remove
Tree	84	247'	NPI	50:1 Approach	234'	13'	Purchase/Remove
Tree	85	252'	NPI	50:1 Approach	234'	18'	Purchase/Remove
Tree	86	247'	NPI	50:1 Approach	235'	12'	Purchase/Remove
Tree	87	252'	NPI	50:1 Approach	236'	16'	Purchase/Remove
Tree	88	241'	NPI	50:1 Approach	238'	3'	Purchase/Remove
Tree	89	243'	NPI	50:1 Approach	238'	5'	Purchase/Remove
Tree	90	167'	NPI	None	188'	None	None
Tree	91	159'	NPI	None	182'	None	None
Tree	92	160'	NPI	None	188'	None	None

RS&H®
Architectural, Engineering, Planning and Environmental Services

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256
904-256-2500 FAX 904-256-2501
www.rsandh.com
FL.Cert.Nos. AAC001886 · EB0005620 · LCC000210

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE ISSUED: AUGUST 2006
REVIEWED BY: JB
DRAWN BY: DB
DESIGNED BY: RO

AEP PROJECT NUMBER

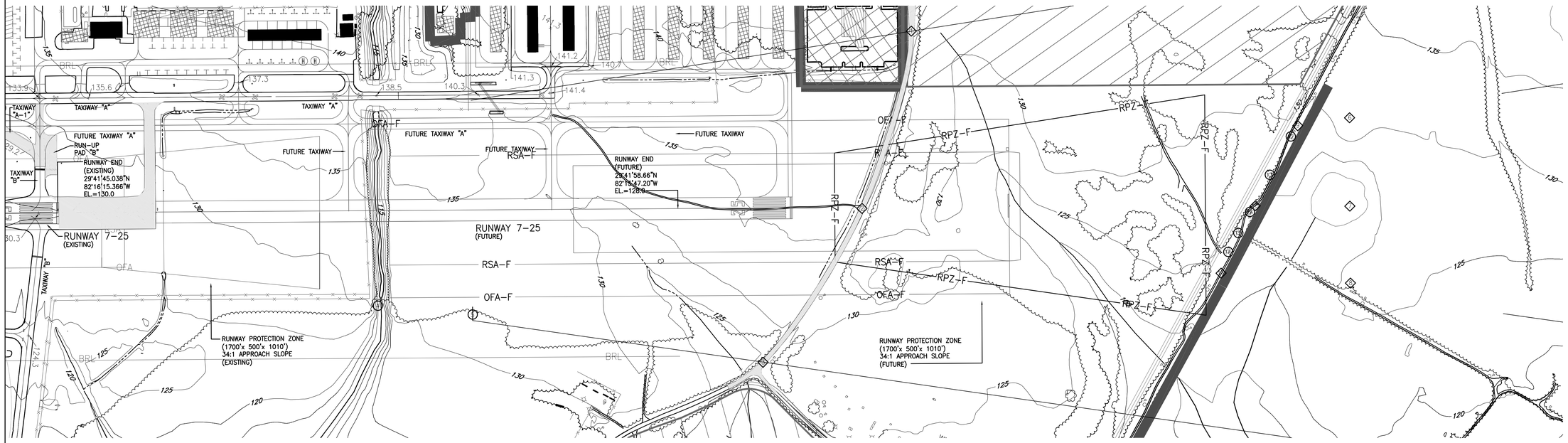
© 1998 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

RUNWAY APPROACH PROFILE and RUNWAY PROTECTON ZONE RUNWAY 07

SHEET NUMBER

ALP-8



RUNWAY 25 INNER PLAN VIEW

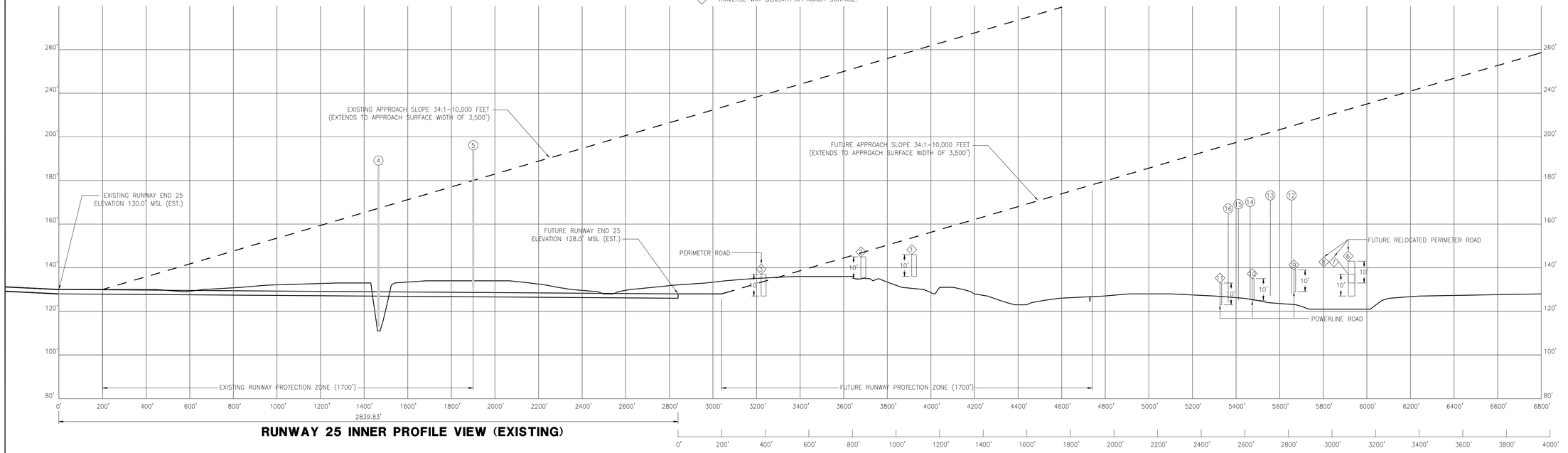
LEGEND

○ OBSTRUCTION TO FAR PART 77 SURFACE(S).

◇ TRAVERSE WAY BENEATH APPROACH SURFACE.

0 200 400 600

Scale in Feet: 1" = 200'



RUNWAY 25 INNER PROFILE VIEW (EXISTING)

RUNWAY 25 INNER PROFILE VIEW (FUTURE)

OBSTRUCTION CHART (EXISTING)

OBJECT DESCRIPTION	OBJECT IDENTIFIER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	SURFACE ELEVATION	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
Perimeter Road	1	146'	NPI	None	259'	None	None
Perimeter Road	2	145'	NPI	None	252'	None	None
Perimeter Road	3	137'	NPI	None	219'	None	None
Tree	4	187'	NPI	34:1 Approach	167'	20'	Remove
Tree	5	194'	NPI	34:1 Approach	180'	14'	Remove

OBSTRUCTION CHART (FUTURE)

OBJECT DESCRIPTION	OBJECT IDENTIFIER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	SURFACE ELEVATION	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
Perimeter Road (Future)	6	143'±	NPI	None	156'	None	None
Perimeter Road (Future)	7	137'±	NPI	None	156'	None	None
Perimeter Road (Future)	8	137'±	NPI	None	156'	None	None
Powerline Road	9	139'	NPI	None	148'	None	None
Powerline Road	10	135'	NPI	None	143'	None	None
Powerline Road	11	133'	NPI	None	138'	None	None
Power Pole	12	171'	NPI	34:1 Approach	148'	23'	Relocate
Power Pole	13	171'	NPI	34:1 Approach	145'	26'	Relocate
Power Pole	14	168'	NPI	34:1 Approach	142'	26'	Relocate
Power Pole	15	167'	NPI	34:1 Approach	140'	27'	Relocate
Power Pole	16	165'	NPI	34:1 Approach	139'	26'	Relocate

Remove all trees within the Future Object Free Area and Future Runway Protection Zone.
Relocate Existing Perimeter Road and Power lines within the Future Object Free Area and Future Runway Protection Zone. Purchase and Remove any trees beyonf the Future Runway Protection Zone that penetrate the Future Part 77 Surface.

HORIZONTAL
0 200 400 600
Scale in Feet: 1" = 200'

VERTICAL
0 20 40 60
Scale in Feet: 1" = 20'

RS&H®

Architectural, Engineering, Planning and Environmental Services

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256
904-256-2500 FAX 904-256-2501
www.rsandh.com
FL.Cert.Nos. AAC001886 · EB0005620 · LCC000210

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE ISSUED: AUGUST 2006
REVIEWED BY: JB
DRAWN BY: DB
DESIGNED BY: RO

AEP PROJECT NUMBER

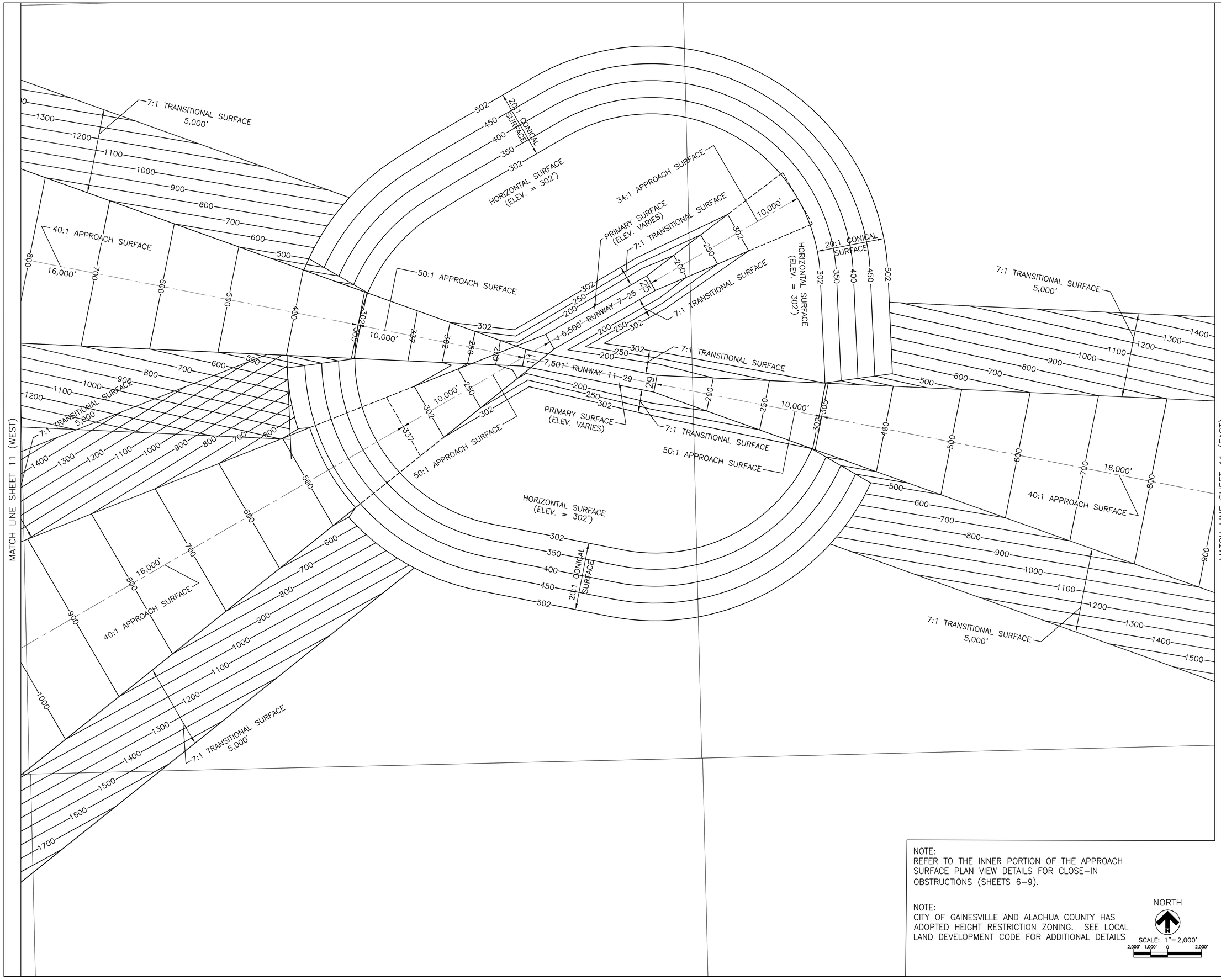
© 1998 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

RUNWAY APPROACH PROFILE and RUNWAY PROTECTON ZONE RUNWAY 25

SHEET NUMBER

ALP-9



NOTE:
REFER TO THE INNER PORTION OF THE APPROACH SURFACE PLAN VIEW DETAILS FOR CLOSE-IN OBSTRUCTIONS (SHEETS 6-9).

NOTE:
CITY OF GAINESVILLE AND ALACHUA COUNTY HAS ADOPTED HEIGHT RESTRICTION ZONING. SEE LOCAL LAND DEVELOPMENT CODE FOR ADDITIONAL DETAILS

NORTH

SCALE: 1"= 2,000'
2,000' 1,000' 0 2,000'

RS&H®
Architectural, Engineering, Planning and Environmental Services
Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256
904-256-2500 FAX 904-256-2501
www.rsandh.com
FL.Cert.Nos. AAC001886 · EB0005620 · LCC000210

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE ISSUED: AUGUST 2006
REVIEWED BY: JB
DRAWN BY: DB
DESIGNED BY: RO

AEP PROJECT NUMBER

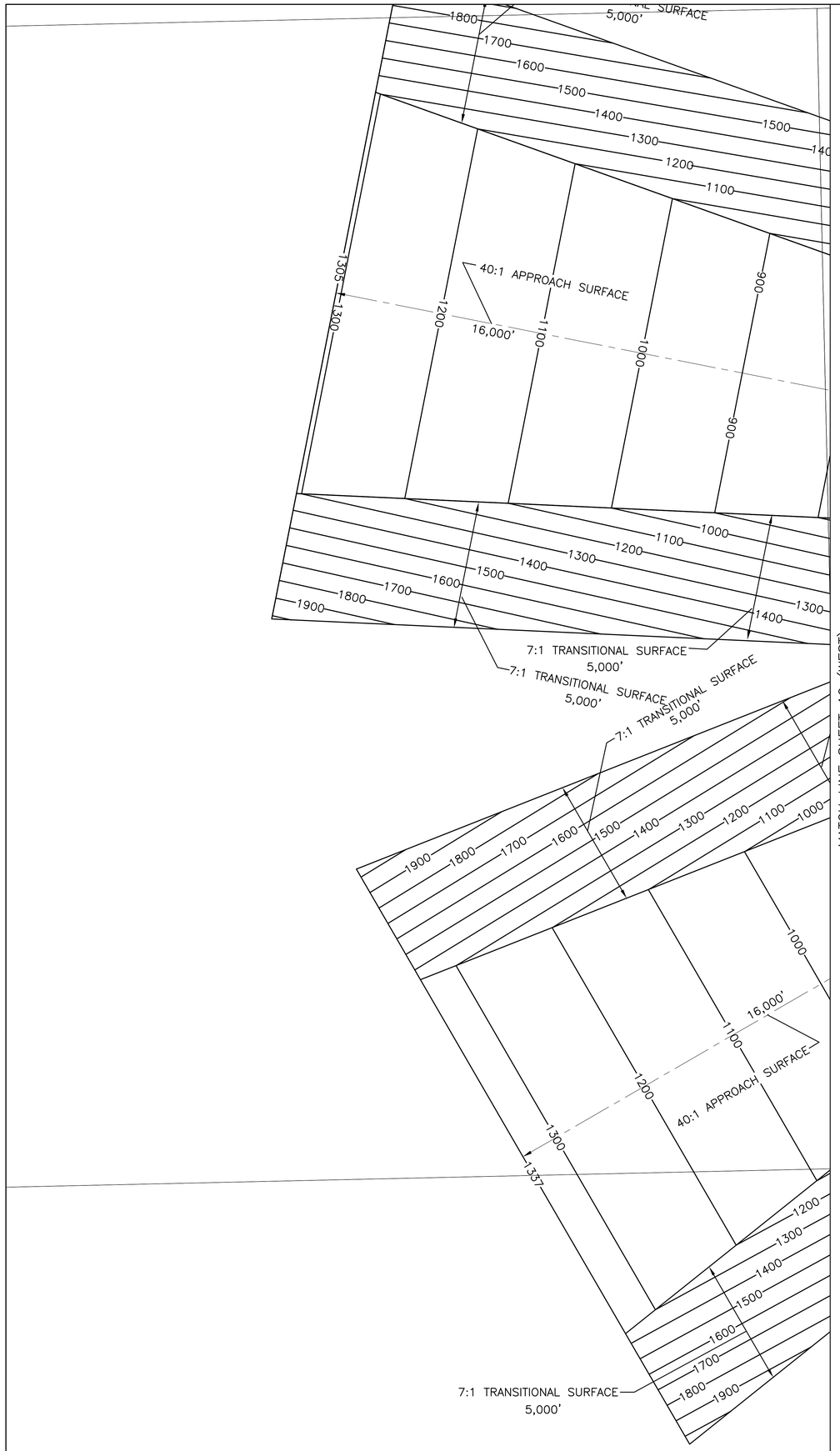
© 1998 REYNOLDS, SMITH AND HILLS INC.

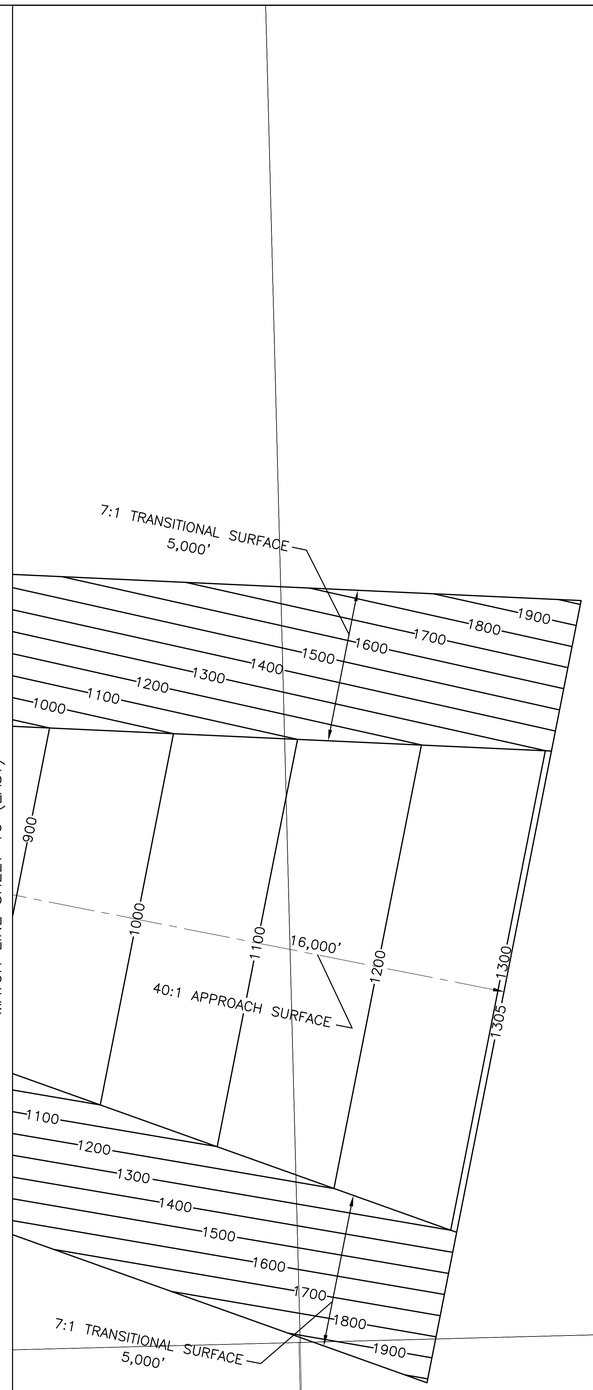
SHEET TITLE

PART 77 IMAGINARY SURFACE PLAN (FUTURE)

SHEET NUMBER

ALP-10





NOTE:
CITY OF GAINESVILLE AND ALACHUA COUNTY HAS ADOPTED HEIGHT RESTRICTION ZONING. SEE LOCAL LAND DEVELOPMENT CODE FOR ADDITIONAL DETAILS

NORTH

SCALE: 1"= 2,000'
2,000' 1,000' 0 2,000'

RS&H®
Architectural, Engineering, Planning and Environmental Services

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256
904-256-2500 FAX 904-256-2501
www.rsandh.com
FL.Cert.Nos. AAC001886 · EB0005620 · LCC000210

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE ISSUED: AUGUST 2006
REVIEWED BY: JB
DRAWN BY: DB
DESIGNED BY: RO

AEP PROJECT NUMBER

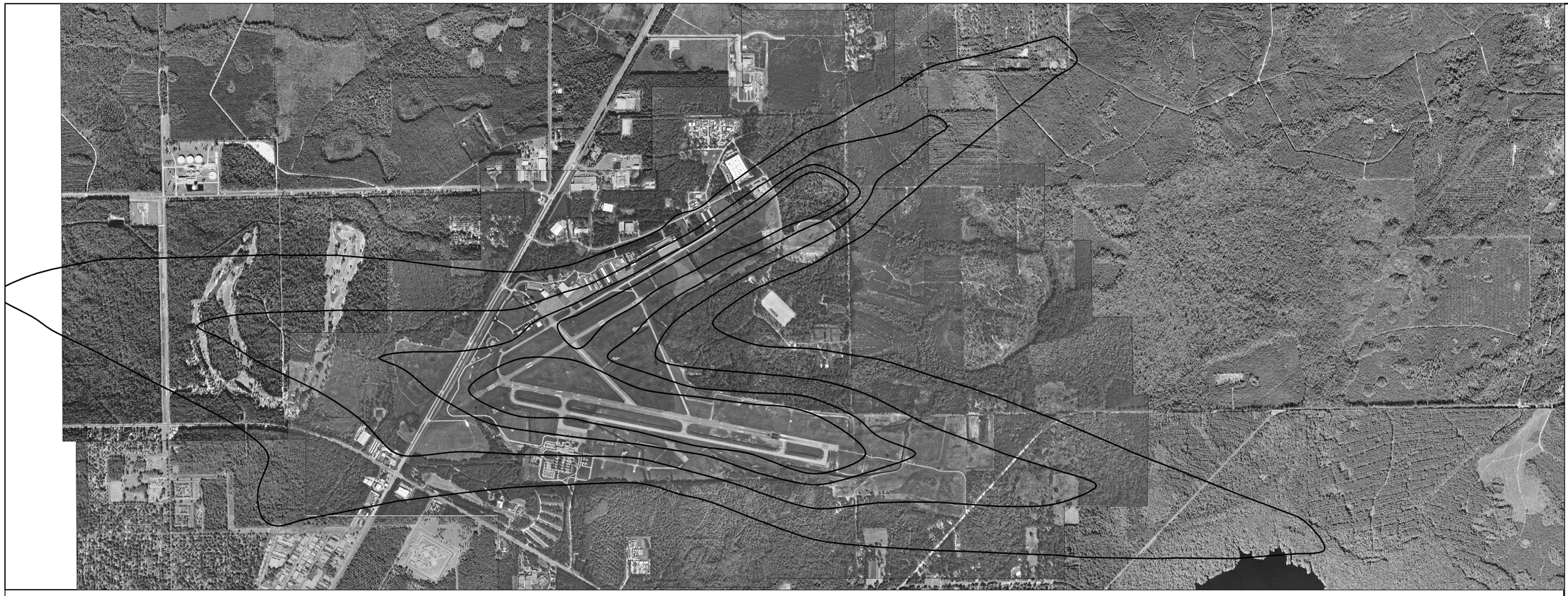
©1998 REYNOLDS, SMITH AND HILLS INC.

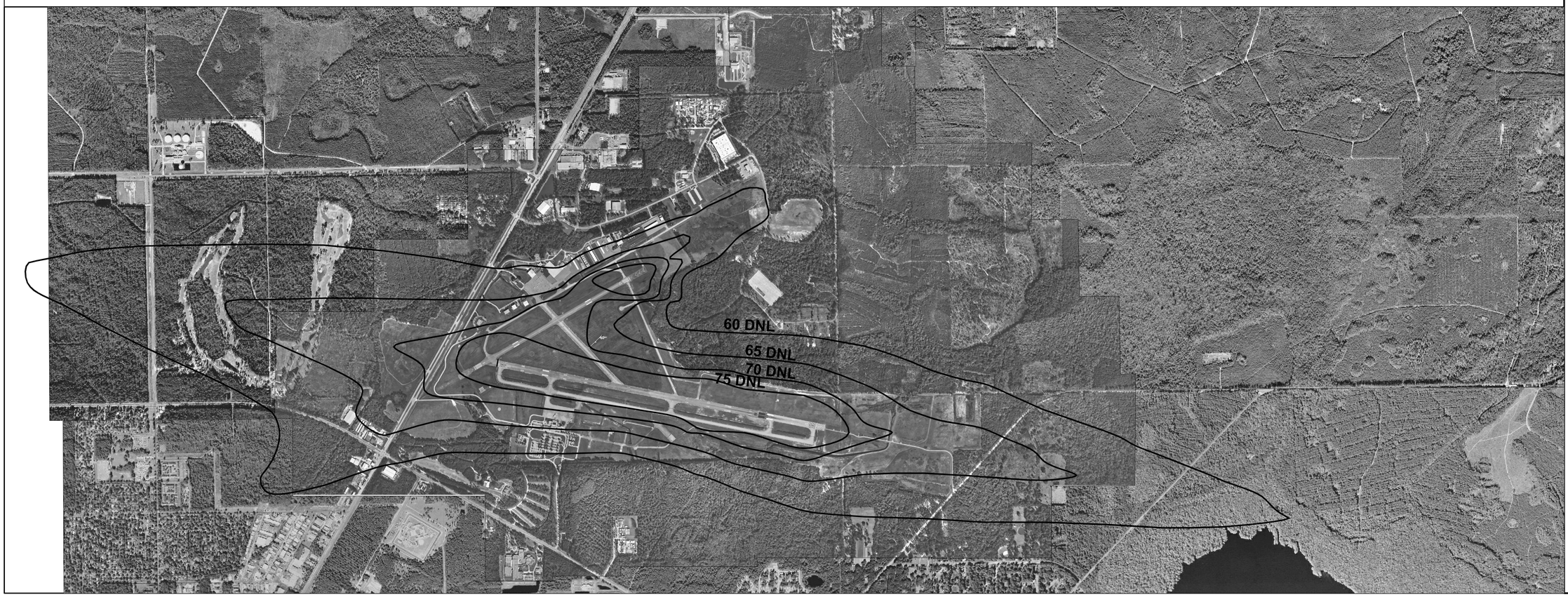
SHEET TITLE

PART 77 IMAGINARY SURFACE PLAN (FUTURE)

SHEET NUMBER

ALP-11





RS&H®

Architectural, Engineering, Planning and Environmental Services

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256
904-256-2500 FAX 904-256-2501
www.rsandh.com
FL.Cert.Nos. AAC001886 · EB0005620 · LCC000210

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE ISSUED: AUGUST 2006
REVIEWED BY: JB
DRAWN BY: DB
DESIGNED BY: TL

AEP PROJECT NUMBER

© 1998 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

LAND USE COMPATIBILITY

SHEET NUMBER

ALP-12



ACQUISITIONS

AREA

- A1 ORIGINAL CITY OWNED AIRPORT LEASED TO U.S. DURING WW II.
- A2 PROPERTY ADDED TO A1 BY U.S. DURING WW II. A1 AND A2 DEMISED TO CITY UNDER SURPLUS PROPERTY INSTRUMENT ACT OCT. 16, 1948.
- A3 CITY ACQUIRED FROM STATE SHORTLY AFTER U.S. CANCELLED LEASE OCT. 1948.
- B1 49.07 ACRES ACQUIRED AND REIMBURSED UNDER FEDERAL AID AIRPORT PROJECT 9-08-021-02.
- B2 82.22 ACRES ACQUIRED AND REIMBURSED UNDER FEDERAL AID AIRPORT PROJECT 9-08-021-02.
- B3 9.9 ACRES ACQUIRED UNDER FEDERAL AID PROJECT 9-08-021-02.
- C 66.2 ACRES ACQUIRED UNDER FEDERAL AID AIRPORT PROJECT 9-08-021-04. ONLY 41.6 ACRES OF THIS LAND WERE SUBJECT TO REIMBURSEMENT UNDER FAAP 04. REIMBURSEMENT OF THE REMAINDER RECEIVED UNDER SUBSEQUENT PROJECT ADAP 04.
- C1 114.64 ACRES ACQUIRED 7-26-43 MIZE TO CITY, D.B. 202, PG. 31, AND 2-16-43 MERCER TO CITY, D.B. 200, PG. 303
- D 5 ACRES OF LAND ACQUIRED AND REIMBURSED UNDER ADAP 8-12-0028-03.
- E1 5.4 ACRES OF LAND REIMBURSED UNDER ADAP 8-12-0028-03.
- E2 PARCELS 1,2,3,4,4A,5,6,7,8,8A,8B,& 9 ACQUIRED AND REIMBURSED UNDER ADAP 8-12-0028-03
- F1 3.087 ACRES ACQUIRED UNDER ADAP 05.
- 3-F ACQUISITION UNDER ADAP 05.
- G RIGHT-OF-WAY ACQUIRED 6-21-77 ADAP 06 EASEMENT FROM STATE.
- H ⚠ AVIGATION EASEMENTS FROM STATE OF FLORIDA FDOT MAY 10, 1977.
- I ⚠ TOTAL ACREAGE = 48.04 ACRES, 10.32 ACRES ACQUIRED UNDER ADAP 6-12-0028-10. 20.60 ACRES ACQUIRED UNDER AIP 3-12-0028-01. 17.12 ACRES ACQUIRED UNDER AIP 3-12-0028-06.
- J ⚠⚠ PROPERTY ACQUIRED UNDER AIP PROJECT #3-12-0028-01, PART 2
- K PROPERTY ACQUIRED UNDER F.D.O.T. GRANT W.P.I. #2820773 (FY 91/92)

NOTE: ALL ACQUISITIONS IN FEE SIMPLE WITH EXCEPTION OF AVIGATION EASEMENT (H)

- ⚠ LIMITS OF AIRPORT INDUSTRIAL PARK 2-27-90, 238.06 ACRES
- L ⚠ 1994 FOSTER ET AL PROPERTIES ACQUIRED UNDER AIP PROJECT #3-12-0028-16
- M NOT APPLICABLE
- 8a ⚠ ABOVE GROUND FUEL FARM PURCHASED FROM REGIONAL PETROLEUM CORP. ON MAY 16, 1996 (EFFECTIVE APRIL 8, 1997)

FUTURE ACQUISITIONS

- N FUTURE PROPERTY ACQUISITION, 126.72 ACRES
- O FUTURE PROPERTY ACQUISITION, 5.28 ACRES
- P FUTURE PROPERTY ACQUISITION, 5.72 ACRES
- Q FUTURE PROPERTY ACQUISITION, 53.50 ACRES
- R ACQUIRE RYDER SYSTEMS FACILITY, 4.72 ACRES

PARCELS RELEASED FROM WAA INSTRUMENT OCT. 15, 1948

1. AGREEMENT 4 JUNE 1954 – SOLD 43.52 ACRES TO SPERRY RAND CORP.
2. RELEASE 23 OCTOBER 1957 – SOLD 5+ ACRES TO PENINSULAR CHEMICAL RESEARCH, INC.
3a, 3b. RELEASE II AUGUST 1958 – SOLD TO SPERRY RAND CORP. TOTAL 65.59 ACRES
4. RELEASE 20 NOVEMBER 1959 – SOLD 5+ ACRES (4 AC. PENINSULAR CHEMICAL RESEARCH, INC. AND IAC. SPERRY RAND CORP.)
5. RELEASE 24 NOVEMBER 1967 – SOLD 0.75 ACRES PENINSULAR CHEMICAL RESEARCH, INC.
6. RELEASE 30 APRIL 1970 – SOLD 5.98 ACRES FABCO–AIR, INC.
7. RELEASE 24 AUGUST 1970 – SOLD 6.09 ACRES MARIS DISTRIBUTING COMPANY
8. RELEASE 7 JUNE 1971 – SOLD 3.34 ACRES HUNTER & ADAMS
8a. OUT PARCEL (0.95) OWNED BY REGIONAL PETROLEUM. RELEASED AS PART OF "8" ABOVE.
9a. RELEASE PARCEL APRIL 14, 1995 – TO CITY OF GAINESVILLE
9b. ENCUMBRANCE PARCEL APRIL 14, 1995 – TO CITY OF GAINESVILLE
10. ⚠ RELEASE PARCEL MAY 5, 1998 – SOLD 2.01 ACRES KENNETH O. LESTER CO.
11. ⚠ RYDER SYSTEMS INC.
12. ⚠ RELEASE PARCEL – TO CITY OF GAINESVILLE

LEGEND

- LAND ACQUISITION
- EXISTING RPZ AREA
- FUTURE RPZ AREA
- RUNWAY EXTENSION
- AIRPORT PROPERTY

⚠ REVISED 07–01–06 (GACRAA)
⚠ REVISED 11–14–00 (GACRAA–CRH)
⚠ REVISED 9–29–1998 (TJB)
⚠ REVISED 1–7–1998 (TJB)
⚠ REVISED 05–1–1995 (TJB) – FAA APPROVED (MOORE/CLERKIN LETTER DATED 4/22/96)
⚠ REVISED 06–01–1990 (TJB)
⚠ REVISED 6–23–1987
⚠ REVISED 5–14–1987

GAINESVILLE REGIONAL AIRPORT
PROPERTY MAP – EXHIBIT A

TERRENCE BRANNAN LAND SURVEYOR INC.

RS&H®
Architectural, Engineering, Planning and Environmental Services
Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256
904-256-2500 FAX 904-256-2501
www.rsandh.com
FL.Cert.Nos. AAC001886 · EB0005620 · LCC000210

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT

AIRPORT MASTER PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	BY	DATE

DATE ISSUED: AUGUST 2006
REVIEWED BY: JB
DRAWN BY: DB
DESIGNED BY: RO

AEP PROJECT NUMBER

© 1998 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

AIRPORT PROPERTY MAP

SHEET NUMBER

ALP-13

RUNWAY DATA

	RUNWAY 11-29				RUNWAY 7-25			
	EXISTING		FUTURE		EXISTING		FUTURE	
RUNWAY DIMENSIONS (L x W)	7504' X 150'		8004' X 150'		4158' X 100'		6500' X 100'	
RUNWAY DESIGN CODE	C-III-2400		C-III-2400		B-II-4000		B-II-4000	
RUNWAY REFERENCE CODE	C-III-2400		C-III-2400		B-II-4000		B-II-4000	
CRITICAL AIRCRAFT	BOEING 727		BOEING 737		KING AIR 200		CANADAIR REGIONAL JET	
EFFECTIVE GRADIENT	-0.6%		-0.6%		-0.5%		-0.5%	
PAVEMENT TYPE	ASPHALT		ASPHALT		ASPHALT		ASPHALT	
PAVEMENT STRENGTH (LBS)	S-75,000, D-260,000, DT-320,000		S-75,000, D-260,000, DT-320,000		S-75,000, D-150,000, DT-210,000		S-75,000, D-150,000, DT-210,000	
PAVEMENT CLASSIFICATION NUMBER								
PAVEMENT SURFACE TREATMENT	GROOVED		GROOVED		GROOVED		GROOVED	
RUNWAY LIGHTING	HIRL		HIRL		MIRL		MIRL	
RUNWAY MARKING	PRECISION INSTRUMENT		PRECISION INSTRUMENT		NON-PRECISION INSTRUMENT		PRECISION INSTRUMENT	
	RWY 11	RWY 29	RWY 11	RWY 29	RWY 7	RWY 25	RWY 7	RWY 25
RUNWAY END COORDINATES LATITUDE	29°41'26.01"N	29°41'10.21"N	29°41'26.01"N	29°41'09.18"N	29°41'25.10"N	29°41'45.04"N	29°41'29.98"N	29°42'01.16"N
LONGITUDE	82°16'50.16"W	82°15'27.03"W	82°16'50.16"W	82°15'21.54"W	82°16'46.51"W	82°16'15.37"W	82°16'46.51"W	82°15'42.05"W
RUNWAY END ELEVATION (MSL)	147.4'	105.1'	147.4'	104.6'	151.4'	130.2'	149.5'	128.0'
ROFZ WIDTH	400'	400'	400'	400'	250'	250'	400'	400'
ROFZ LENGTH BEYOND RUNWAY END	200'	200'	200'	200'	200'	200'	200'	200'
INNER APPROACH OFZ DIMENSIONS	N/A	2600'	2600'	2600'	N/A	N/A	2600'	N/A
RSA WIDTH[1]	500'	500'	500'	500'	150'	150'	500'	500'
RSA LENGTH BEYOND DEPARTURE END[1]	1000'	1000'	1000'	1000'	300'	300'	1000'	1000'
RSA LENGTH PRIOR TO THRESHOLD[1]	600'	600'	600'	600'	300'	300'	600'	600'
ROFA WIDTH[1]	800'	800'	800'	800'	500'	500'	800'	800'
ROFA LENGTH BEYOND RUNWAY END[1]	1000'	1000'	1000'	1000'	300'	300'	1000'	1000'
ROFA LENGTH PRIOR TO THRESHOLD[1]	600'	600'	600'	600'	300'	300'	600'	600'
APPROACH RPZ LENGTH[1]	1700'	2500'	1700'	2500'	1000'	1000'	1700'	2500'
APPROACH RPZ INNER WIDTH[1]	500'	1000'	500'	1000'	500'	500'	500'	1000'
APPROACH RPZ OUTER WIDTH[1]	1010'	1750'	1510'	1750'	700'	700'	1010'	1750'
DEPARTURE RPZ LENGTH[1]	1700'	1700'	1700'	1700'	1000'	1000'	1700'	1700'
DEPARTURE RPZ INNER WIDTH[1]	500'	500'	500'	500'	500'	500'	500'	500'
DEPARTURE RPZ OUTER WIDTH[1]	1010'	1010'	1010'	1010'	700'	700'	1010'	1010'
DISPLACED THRESHOLD COORDINATES	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISPLACED THRESHOLD ELEVATION (MSL)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INSTRUMENT APPROACHES	VOR/DME, RNAV	ILS/LOC, VOR/DME, RNAV	VOR/DME, RNAV	ILS/LOC, VOR/DME, RNAV	VOR/DME, RNAV	VOR, RNAV	VOR/DME, RNAV	ILS/LOC, VOR, RNAV
APPROACH TYPE	NPI	PIR	PIR	PIR	NPI	NPI	NPI	PIR
14 CFR PART 77 APPROACH CATEGORY	34:1	50:1	50:1	50:1	34:1	34:1	34:1	50:1
VISIBILITY MINIMUMS (MILE)	1	1/2	1/2	1/2	1	1	1	1/2
TYPE OF AERONAUTICAL SURVEY REQ.	NON-VERTICALLY GUIDED	VERTICALLY GUIDED	VERTICALLY GUIDED	VERTICALLY GUIDED	NON-VERTICALLY GUIDED	NON-VERTICALLY GUIDED	NON-VERTICALLY GUIDED	VERTICALLY GUIDED
40:1 OBSTACLE CLEARANCE SURFACE APPLICABILITY	YES	YES	YES	YES	NO	NO	YES	YES
THRESHOLD SITING CRITERIA APPROACH SLOPE	20:1	34:1	34:1	34:1	20:1	20:1	20:1	34:1
VISUAL AND INSTRUMENT NAVAIDS	VORTAC WIND CONE PAPI, REIL	VORTAC, MALSR WIND CONE PAPI,	VORTAC, MALSR WIND CONE PAPI, REIL	VORTAC, MALSR WIND CONE PAPI	WIND CONE PAPI	WIND CONE PAPI	MALSR WIND CONE PAPI	WIND CONE PAPI
OBJECTS PENETRATING TSS								
TOUCHDOWN ZONE ELEVATION (MSL)	147'	122'	147'	122'	151'	144'	151'	144'
PERCENT ALL WEATHER WIND COVERAGE (10.5 KNOTS)	85.23%	86.39%	85.23%	86.39%	85.73%	85.45%	85.73%	85.45%
PERCENT ALL WEATHER WIND COVERAGE (13 KNOTS)	86.38%	87.61%	86.38%	87.61%	86.50%	86.31%	86.50%	86.31%
PERCENT ALL WEATHER WIND COVERAGE (16 KNOTS)	87.40%	88.59%	87.40%	88.59%	87.14%	87.00%	87.14%	87.00%
PERCENT ALL WEATHER WIND COVERAGE (20 KNOTS)	87.57%	88.75%	87.57%	88.75%	87.25%	87.13%	87.25%	87.13%

RUNWAY DATA TABLE NOTES:
[1]DIMENSIONS LISTED ARE EQUAL TO FAA STANDARDS UNLESS OTHERWISE NOTED.

AIRPORT DATA

	EXISTING	FUTURE
AIRPORT REFERENCE CODE	C-III-2400	C-III-2400
CRITICAL AIRCRAFT	B-727	B-737
CRITICAL AIRCRAFT APPROACH SPEED (KNOTS)	133	130
CRITICAL AIRCRAFT WINGSPAN	108'	130'
CRITICAL AIRCRAFT MAIN GEAR WIDTH	18.75'	18.75'
AIRPORT ELEVATION (MSL)	152.2'	152.2'
MEAN MAX. TEMPERATURE OF HOTTEST MONTH	90.9° F (JULY)	90.9° F (JULY)
AIRPORT REFERENCE POINT LATITUDE	29°41'24.16"N	29°41'29.04"N
AIRPORT REFERENCE POINT LONGITUDE	82°16'18.36"W	82°16'11.89"W
AIRPORT NAVAIDS	ILS/LOC, VOR/DME RNAV (GPS), PAPI, REIL, MALSR, WIND CONE/SEG CIRCLE, BEACON	ILS/LOC, VOR/DME RNAV (GPS), PAPI, REIL, MALSR, WIND CONE/SEG CIRCLE, BEACON
MISCELLANEOUS FACILITIES	ASOS	ASOS
AIRPORT MAGNETIC VARIATION & ANNUAL DECLINATION CHANGE	5.62° W 0.1° W PER YEAR NOAA (JUN. 2013)	5.62° W 0.1° W PER YEAR NOAA (JUN. 2013)
NPIAS SERVICE LEVEL	PRIMARY	PRIMARY

FAA APPROVED MODIFICATIONS TO STANDARDS*

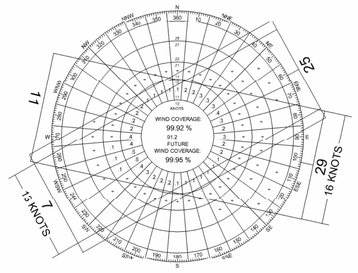
DESCRIPTION OF MODIFICATION	REQUIRED STANDARD	DATE OF MOD. APPROVAL	AIRSPACE CASE NO.
1.			
2.			
3.			
4.			

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE (ADO) PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

WIND ROSES

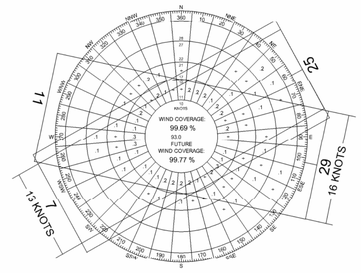
ALL-WEATHER WINDROSE



WIND COVERAGE

RUNWAY	CROSSWIND COMPONENT (KNOTS)			
	10.5 (12.0)	13.0 (15.0)	16.0 (18.4)	20.0 (23.0)
7/25	97.76%	98.96%	99.81%	99.96%
11/29	96.70%	98.46%	99.75%	99.96%
COMBINED	99.02%	99.69%	99.95%	100.00%

IFR WINDROSE



WIND COVERAGE

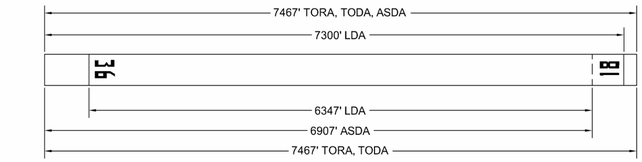
RUNWAY	CROSSWIND COMPONENT (KNOTS)			
	10.5 (12.0)	13.0 (15.0)	16.0 (18.4)	20.0 (23.0)
7/25	97.77%	97.99%	99.00%	99.63%
11/29	96.49%	97.80%	99.15%	99.69%
COMBINED	98.42%	99.23%	99.77%	100.00%

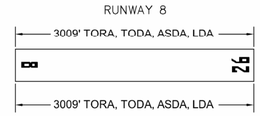
OBSERVATIONS: GAINESVILLE REGIONAL AIRPORT (2002-2012)

DECLARED DISTANCES

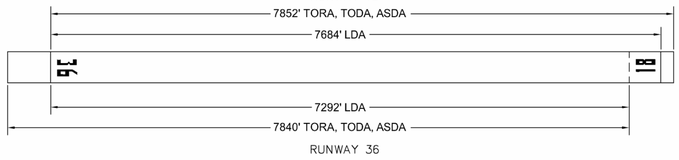
	RUNWAY 18-36				RUNWAY 8-26			
	EXISTING		FUTURE		EXISTING		FUTURE	
	RWY 18	RWY 36	RWY 18	RWY 36	RWY 8	RWY 26	RWY 8	RWY 26
TAKE-OFF RUN AVAILABLE (TORA)								
TAKE-OFF DISTANCE AVAILABLE (TODA)								
LANDING DISTANCE AVAILABLE (LDA)								
ACCELERATE STOP DISTANCE AVAILABLE (ASDA)								

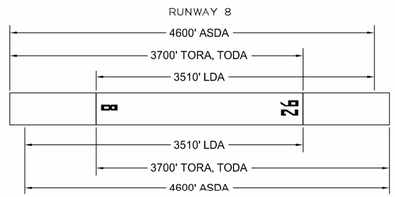
EXISTING DECLARED DISTANCES





FUTURE DECLARED DISTANCES





NOT FOR CONSTRUCTION

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

DATA SHEET

SHEET NUMBER

SHEET 2 OF 17

DRAFT

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_02_DATA.dwg Plotted on: 12/31/2013 12:15 PM Plotted by: Morse, Ryan

LEGEND	
DESCRIPTION	EXISTING
AIRPORT PROPERTY LINE	
AIRPORT INDUSTRIAL PARK	
ACTIVE AIRFIELD PAVEMENT	
PAVED ROADS & PARKING	
FENCE	—X—X—
GATE LOCATION (# OR UNKNOWN)	
BUILDINGS – ON AIRPORT PROPERTY	
BUILDINGS – OFF AIRPORT PROPERTY	
OBSTACLE FREE ZONE	OFZ
RUNWAY SAFETY AREA	RSA
RUNWAY OBJECT FREE AREA	OFA
TAXIWAY OBJECT FREE AREA	TOFA
RUNWAY VISIBILITY ZONE	RVZ
BUILDING RESTRICTION LINE	BRL 35'
ONE ENGINE INOPERATIVE SURFACE	OEI
RUNWAY PROTECTION ZONE	
STORM DRAINAGE CHANNEL	
TREES	
APRON TIE DOWN	
PAPI	
BEACON	
REIL	

CONSTRUCTION NOTICE REQUIREMENT

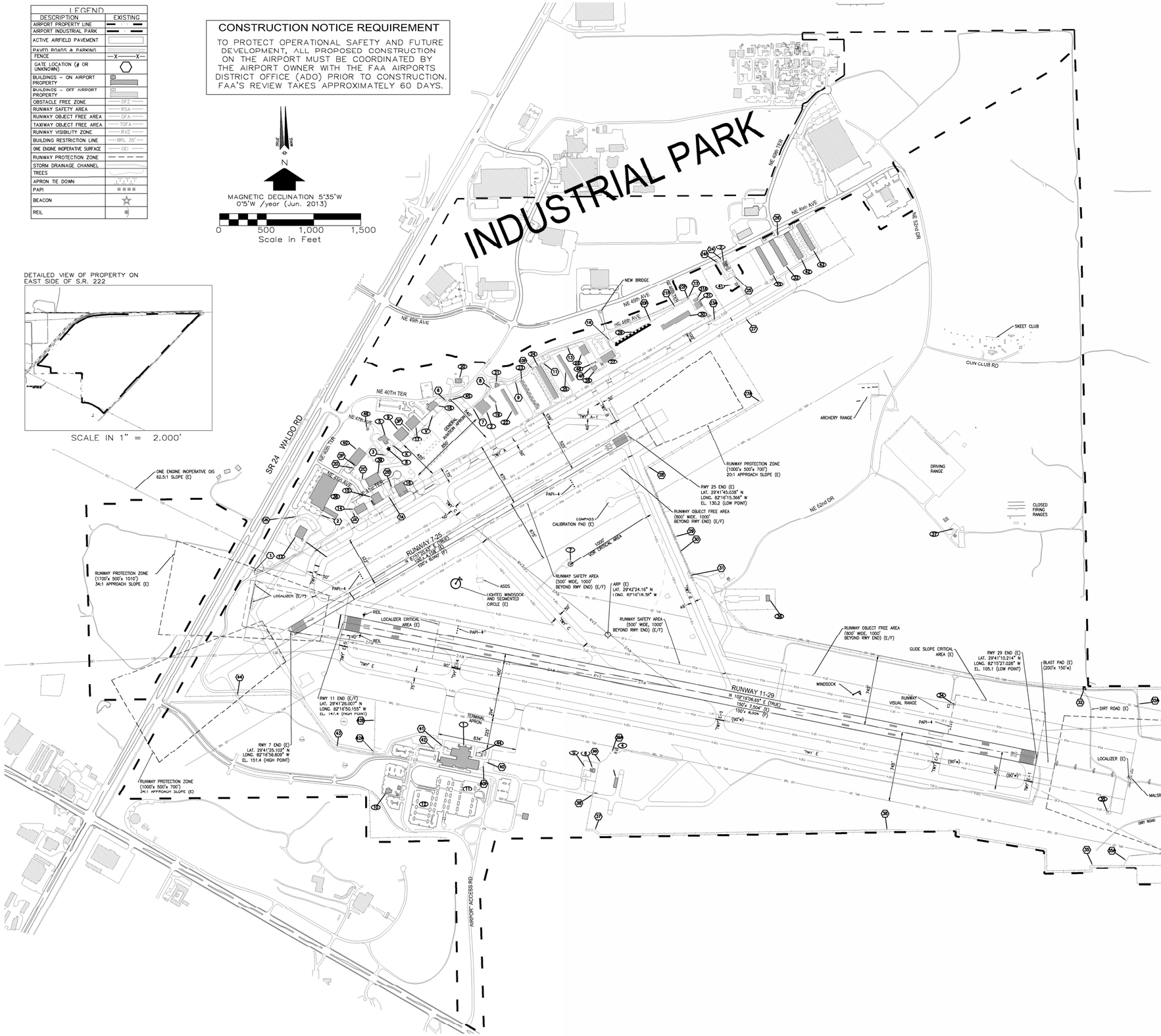
TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE (ADO) PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

TRUE NORTH
N
MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

0 500 1,000 1,500
Scale in Feet

DETAILED VIEW OF PROPERTY ON EAST SIDE OF S.R. 222

SCALE IN 1" = 2,000'



BLDG. NO.	EXISTING AIRPORT-OPERATED FACILITIES	AIRPORT BLDG. NO.
1	AIRPORT TERMINAL	C–31
2	AIRCRAFT MAINTENANCE HANGAR (125'X124')	GA–13
3	FUEL STORAGE FACILITY	GA–26
4	SOUTH AIRFIELD LIGHTING VAULT	C–35
5	ARFF STATION (TO BE RELOCATED)	GA–08
6	AIR TRAFFIC CONTROL TOWER (TO BE RELOCATED)	C–33
7	VORTAC	N/A
8	ROTATING BEACON (TO BE RELOCATED)	N/A
9	VAC MAINTENANCE BUILDING	GA–10
10	QTA CAR RENTAL FACILITY	C–30
11	SHORT TERM PARKING	N/A
12	LONG TERM PARKING	N/A
13	OFFICE (118'X88')	GA–01
14	BOX HANGAR (121'X73')	GA–05
15	BOX HANGAR (90'X91')	GA–06
16	BOX HANGAR (126'X102') (SEE NOTE 2)	GA–07
17	BOX HANGAR (124'X98')	GA–09
18	UNIVERSITY AIR CENTER TERMINAL BUILDING	GA–11
19	FEDERAL EXPRESS SORT FACILITY (TO BE REMOVED)	GA–14
20	FAA TECHNICAL OPERATIONS OFFICE	GA–12
21	PORT–A–PORT	GA–15A
22	T–HANGAR BUILDING A (311'X34')	GA–15
23	PORT–A–PORTS	GA–16
24	T–HANGAR BUILDING D (381'X52')	GA–17
25	T–HANGAR BUILDING F (315'X35')	GA–18
26	STORAGE HANGAR (100'X70')	GA–19
27	BOX HANGAR (147'X76')	GA–22
28	ABANDONED BUILDING	N/A
29	PORT–A–PORTS (TO BE REMOVED)	GA–23
30	SUNSHADES	GA–24
31	BUX HANGAR (63'X81')	GA–25
31A	MODULAR OFFICE BUILDING	GA–25A
32	T–HANGAR BUILDING I (323'X49')	GA–28
33	T–HANGAR BUILDING J (313'X53')	GA–29
34	GLIDESLOPE FACILITY (RWY 29)	N/A
35	FAA BUILDING	N/A
36	ABANDONED MAINTENANCE STORAGE HANGAR	N/A
37	GRU LIFT STATION	N/A
38	BOX HANGAR (308'X164')	GA–02
39	BOX HANGAR (147'X102')	GA–04
40	SERVICE HANGAR (166'X100')	GA–01
41	NORTH AIRFIELD LIGHTING VAULT	GA–27
42	T–HANGAR BUILDING K (313'X58')	GA–30
43	T–HANGAR BUILDING L (316'X53')	GA–31
44	PUMP HOUSE BUILDING	C–32
45	STORAGE SHED	N/A
46	ADSB ANTENNA	N/A
47	AIRPORT MAINTENANCE FACILITY	N/A
48	SKY CHIEFS AVIATION TRAILER	N/A

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCG000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER 201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

FACILITIES LAYOUT PLAN

SHEET NUMBER

SHEET 3 OF 17

DRAFT

NOT FOR CONSTRUCTION

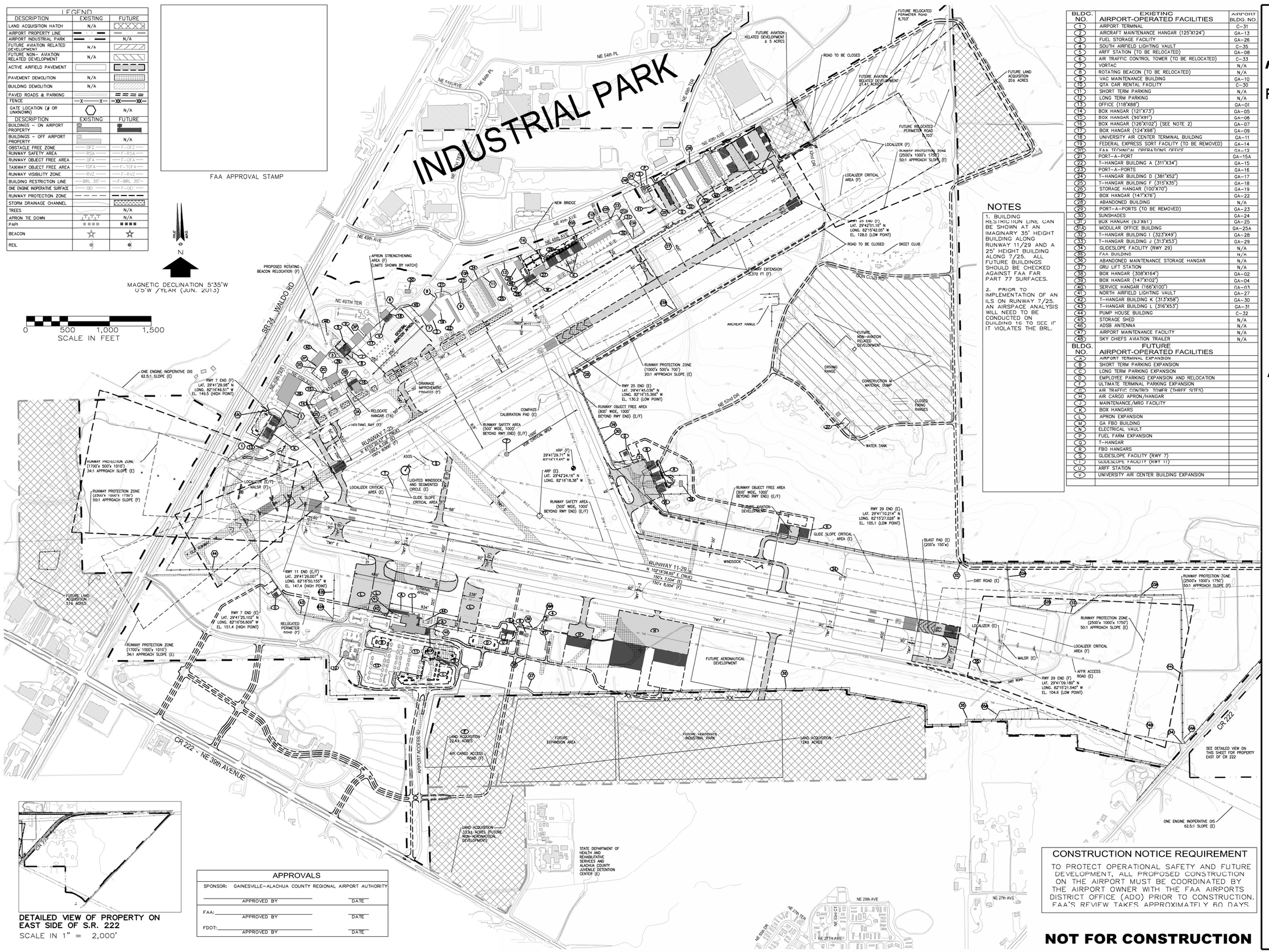
Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_03_FLP.dwg Plotted on: 12/31/2013 12:15 PM Plotted by: Morse, Ryan

LEGEND		
DESCRIPTION	EXISTING	FUTURE
LAND ACQUISITION HATCH	N/A	
AIRPORT PROPERTY LINE		
AIRPORT INDUSTRIAL PARK		N/A
FUTURE AVIATION RELATED DEVELOPMENT	N/A	
FUTURE NON- AVIATION RELATED DEVELOPMENT	N/A	
ACTIVE AIRFIELD PAVEMENT		
PAVEMENT DEMOLITION	N/A	
BUILDING DEMOLITION	N/A	
PAVED ROADS & PARKING		
FENCE	—X—X—	—XX—XX—
GATE LOCATION (# OR UNKNOWN)		N/A
DESCRIPTION	EXISTING	FUTURE
BUILDINGS – ON AIRPORT PROPERTY		
BUILDINGS – OFF AIRPORT PROPERTY		N/A
OBSTACLE FREE ZONE	OFZ	F-OFZ
RUNWAY SAFETY AREA	RSA	F-RSA
RUNWAY OBJECT FREE AREA	OFA	F-OFA
TAXIWAY OBJECT FREE AREA	TOFA	F-TOFA
RUNWAY VISIBILITY ZONE	RVZ	F-RVZ
BUILDING RESTRICTION LINE	BRL 35'	F-BRL 35'
ONE ENGINE INOPERATIVE SURFACE	OEI	F-OEI
RUNWAY PROTECTION ZONE		
STORM DRAINAGE CHANNEL		
TREES		N/A
APRON TIE DOWN		N/A
PAPI		
BEACON		
REIL		

FAA APPROVAL STAMP

MAGNETIC DECLINATION 5°35'W
0°5'W /YEAR (JUN. 2013)

0 500 1,000 1,500
SCALE IN FEET



NOTES

1. BUILDING RESTRICTION LINE CAN BE SHOWN AT AN IMAGINARY 35' HEIGHT BUILDING ALONG RUNWAY 11/29 AND A 25' HEIGHT BUILDING ALONG 7/25. ALL FUTURE BUILDINGS SHOULD BE CHECKED AGAINST FAA FAR PART 77 SURFACES.
2. PRIOR TO IMPLEMENTATION OF AN ILS ON RUNWAY 7/25, AN AIRSPACE ANALYSIS WILL NEED TO BE CONDUCTED ON BUILDING 16 TO SEE IF IT VIOLATES THE BRL.

BLDG. NO.	EXISTING AIRPORT-OPERATED FACILITIES	AIRPORT BLDG. NO.
1	AIRPORT TERMINAL	C-31
2	AIRCRAFT MAINTENANCE HANGAR (125'X124')	GA-13
3	FUEL STORAGE FACILITY	GA-26
4	SOUTH AIRFIELD LIGHTING VAULT	C-35
5	ARFF STATION (TO BE RELOCATED)	GA-08
6	AIR TRAFFIC CONTROL TOWER (TO BE RELOCATED)	C-33
7	VORTAC	N/A
8	ROTATING BEACON (TO BE RELOCATED)	N/A
9	VAC MAINTENANCE BUILDING	GA-10
10	QTA CAR RENTAL FACILITY	C-30
11	SHORT TERM PARKING	N/A
12	LONG TERM PARKING	N/A
13	OFFICE (118'X88')	GA-01
14	BOX HANGAR (121'X73')	GA-05
15	BOX HANGAR (90'X91')	GA-06
16	BOX HANGAR (126'X102') (SEE NOTE 2)	GA-07
17	BOX HANGAR (124'X98')	GA-09
18	UNIVERSITY AIR CENTER TERMINAL BUILDING	GA-11
19	FEDERAL EXPRESS SORT FACILITY (TO BE REMOVED)	GA-14
20	FAA TECHNICAL OPERATIONS OFFICE	GA-12
21	PORT-A-PORT	GA-15A
22	T-HANGAR BUILDING A (311'X34')	GA-15
23	PORT-A-PORTS	GA-16
24	T-HANGAR BUILDING D (381'X52')	GA-17
25	T-HANGAR BUILDING F (315'X35')	GA-18
26	STORAGE HANGAR (100'X70')	GA-19
27	BOX HANGAR (147'X76')	GA-22
28	ABANDONED BUILDING	N/A
29	PORT-A-PORTS (TO BE REMOVED)	GA-23
30	SUNSHADES	GA-24
31	BOX HANGAR (63'X61')	GA-25
31A	MODULAR OFFICE BUILDING	GA-25A
32	T-HANGAR BUILDING I (323'X49')	GA-28
33	T-HANGAR BUILDING J (313'X53')	GA-29
34	GLIDESLOPE FACILITY (RWY 29)	N/A
35	FAA BUILDING	N/A
36	ABANDONED MAINTENANCE STORAGE HANGAR	N/A
37	GRU LIFT STATION	N/A
38	BOX HANGAR (308'X164')	GA-02
39	BOX HANGAR (147'X102')	GA-04
40	SERVICE HANGAR (166'X100')	GA-01
41	NORTH AIRFIELD LIGHTING VAULT	GA-27
42	T-HANGAR BUILDING K (313'X58')	GA-30
43	T-HANGAR BUILDING L (316'X53')	GA-31
44	PUMP HOUSE BUILDING	C-32
45	STORAGE SHED	N/A
46	ADSB ANTENNA	N/A
47	AIRPORT MAINTENANCE FACILITY	N/A
48	SKY CHIEFS AVIATION TRAILER	N/A

BLDG. NO.	FUTURE AIRPORT-OPERATED FACILITIES
A	AIRPORT TERMINAL EXPANSION
B	SHORT TERM PARKING EXPANSION
C	LONG TERM PARKING EXPANSION
D	EMPLOYEE PARKING EXPANSION AND RELOCATION
E	ULTIMATE TERMINAL PARKING EXPANSION
F	AIR TRAFFIC CONTROL TOWER (THREE SITES)
G	AIR CARGO APRON/HANGAR
H	MAINTENANCE/MRO FACILITY
J	BOX HANGARS
K	APRON EXPANSION
L	GA FBO BUILDING
M	ELECTRICAL VAULT
N	FUEL FARM EXPANSION
P	T-HANGAR
Q	FBO HANGARS
R	GLIDESLOPE FACILITY (RWY 7)
S	GLIDESLOPE FACILITY (RWY 11)
T	ARFF STATION
U	UNIVERSITY AIR CENTER BUILDING EXPANSION
V	

DETAILED VIEW OF PROPERTY ON EAST SIDE OF S.R. 222
SCALE IN 1" = 2,000'

APPROVALS		
SPONSOR: GAINESVILLE–ALACHUA COUNTY REGIONAL AIRPORT AUTHORITY		
	APPROVED BY	DATE
FAA:	APPROVED BY	DATE
FDOT:	APPROVED BY	DATE

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE (ADO) PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS

NOT FOR CONSTRUCTION

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCG000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER 201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

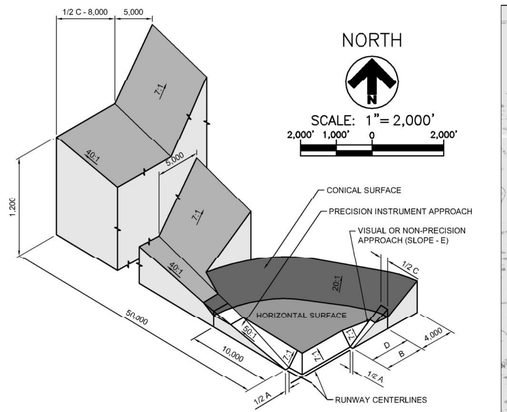
AIRPORT LAYOUT PLAN

SHEET NUMBER

SHEET 4 OF 17

DRAFT

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_04_ALP.dwg Plotted on: 12/31/2013 12:15 PM Plotted by: Morse, Ryon



ISOMETRIC VIEW

NOT TO SCALE

NORTH

SCALE: 1"= 2,000'

2,000' 1,000' 0 2,000'

MATCH LINE SHEET 6 (WEST)

MATCH LINE SHEET 6 (EAST)

7:1 TRANSITIONAL SURFACE 5,000'

20:1 CONICAL SURFACE

HORIZONTAL SURFACE (ELEV. = 302')

50:1 APPROACH SURFACE

40:1 APPROACH SURFACE

34:1 APPROACH SURFACE

PRIMARY SURFACE (ELEV. VARIES)

6,500' RUNWAY 7-25

8,001' RUNWAY 11-29

NOTE:
REFER TO THE INNER PORTION OF THE APPROACH SURFACE PLAN VIEW DETAILS FOR CLOSE-IN OBSTRUCTIONS (SHEETS 7-10).

NOTE:
CITY OF GAINESVILLE AND ALACHUA COUNTY HAS ADOPTED HEIGHT RESTRICTION ZONING. SEE LOCAL LAND DEVELOPMENT CODE FOR ADDITIONAL DETAILS

NOT FOR CONSTRUCTION

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCG000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER 201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

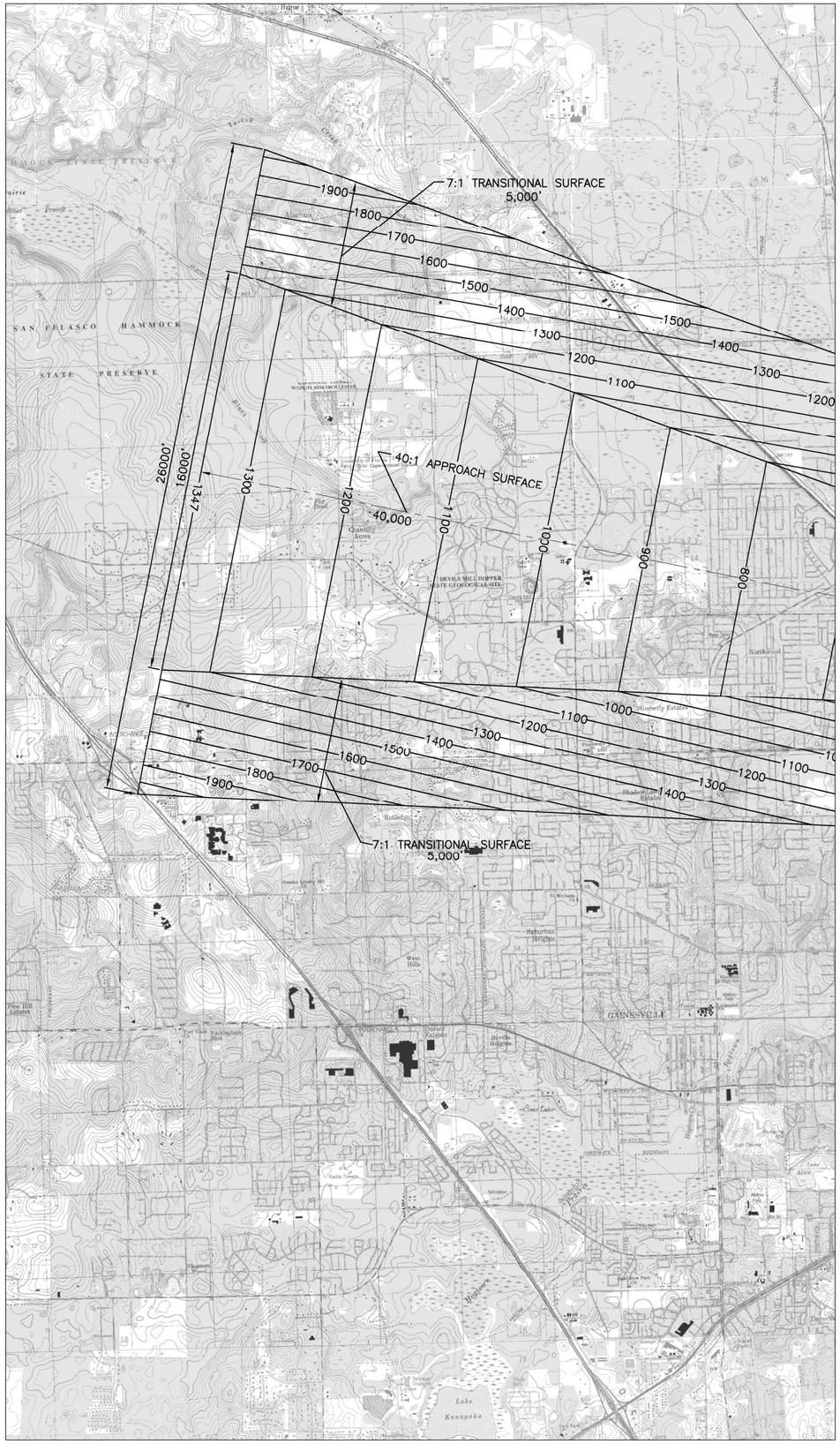
AIRSPACE DRAWING (1 OF 2)

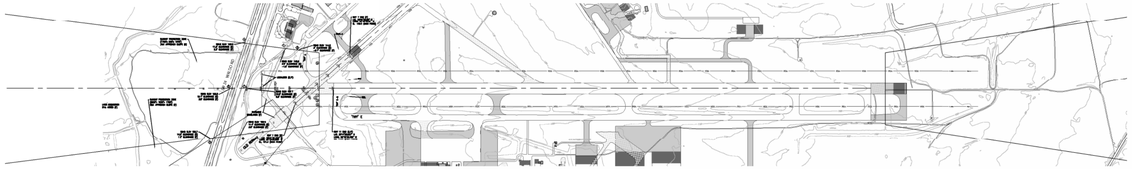
SHEET NUMBER

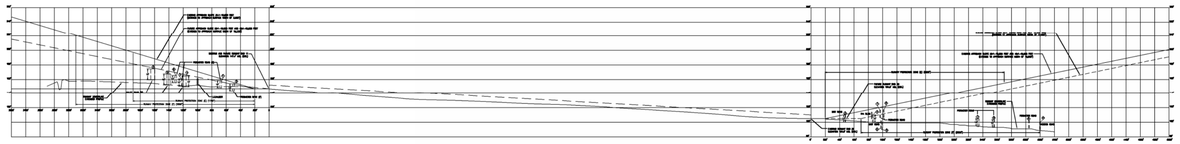
SHEET 5 OF 17

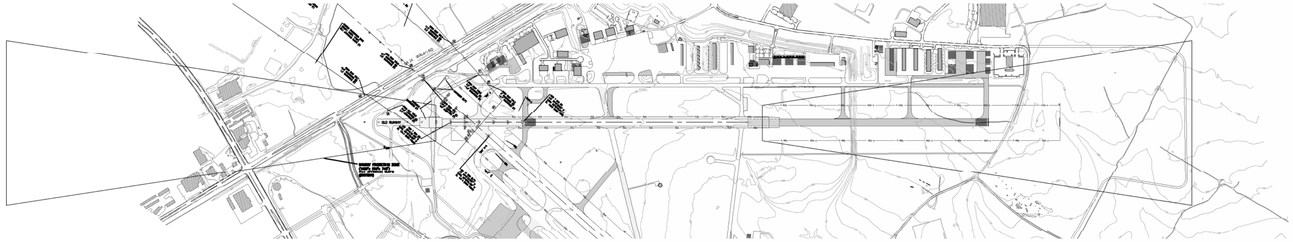
DRAFT

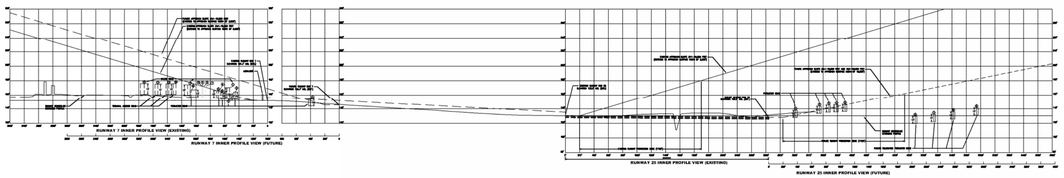
Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_05_AIRSPACE1.dwg Plotted on: 12/31/2013 12:16 PM Plotted by: Morse, Ryan


7:1 TRANSITIONAL SURFACE
5,000'
40:1 APPROACH SURFACE
40,000
26000'
16000'
1347
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
SAN FELASCO HAMMOCK
STATE PRESERVE
Alachua
Archer
Newberry
Gainesville
Suburban Heights
Northwood
Kanapaha
Lake Kanapaha
Lake Alice
Lake Elizabeth
Sweetwater Branch
Hogtown Creek
Radio Towers
Chantilly Acres
Wiles Hills
Pine Hill Addition
Fort Clark Addition
Buckingham Addition
Duval Addition
Bivens Addition
Bellville Heights
Oak Grove
Rolling Hills
Golf Course
Shadow Park
Tanglewood
Woodland Park
Sunset Park
Shannon Estates
Wimberly Estates
Shadow Lawn Estates
Greater Liberty Hill
St Michaels Ch
Wesley Chapel
Cemetery
Cemetery
Cemetery









OBSTRUCTION CHART (EXISTING)

OBJECT DESCRIPTION	OBJECT NUMBER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
GRD	1	148'	NPI	34:1 APPROACH	0'	NONE
GRD	2	148'	NPI	34:1 APPROACH	0'	NONE
GRD	3	148'	NPI	34:1 APPROACH	0'	NONE
GRD	4	148'	NPI	34:1 APPROACH	0'	NONE
POST GUARD	5	149'	NPI	34:1 APPROACH	1'	NONE
TREE	18	230'	NPI	34:1 APPROACH	9'	PURCHASE/REMOVE
TREE	19	222'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	20	222'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	21	229'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	22	223'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	23	225'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE
TREE	24	226'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	25	223'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	26	232'	NPI	34:1 APPROACH	9'	PURCHASE/REMOVE
TREE	27	230'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	31	232'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE

TRAVERSE WAYS (EXISTING & FUTURE)

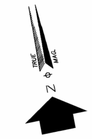
ROAD NAME	ROAD NUMBER	ROAD ELEVATION	OBSTRUCTED PART 77 SURFACE	ROAD CLEARANCE OR PENETRATION (E/F)*	PROPOSED ROAD DISPOSITION
PERIMETER RD	1	148.5'	50:1 Approach (F)	2.9'/-1.6'	NONE
PERIMETER RD (F)	2	144.2'	50:1 Approach (F)	2'/-0.2'	NONE
WALDO RD	3	159.7'	NONE	14.6'/1.2'	
WALDO RD	4	150.0'	NONE	11.6'/2.2'	
WALDO RD	5	155.5'	NONE	15.1'/3.8'	
PERIMETER RD	6	155.6'	NONE	14.4'/3.8'	
PERIMETER RD	7	151.1'	NONE	16.2'/6.6'	

*(+) DENOTES A CLEARANCE, (-) DENOTES A PENETRATION

LEGEND

(7) OBSTRUCTION TO APPROACH SURFACE

(7) TRAVERSE WAY TO APPROACH SURFACE



MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

VERTICAL

0 100 200 300

Scale in Feet: 1" = 100'

HORIZONTAL

0 1000 2000 3000

Scale in Feet: 1" = 1000'

NOT FOR CONSTRUCTION

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCG000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00

REVIEWED BY: GL

DRAWN BY: RJM

DESIGNED BY:

RS&H PROJECT NUMBER 201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

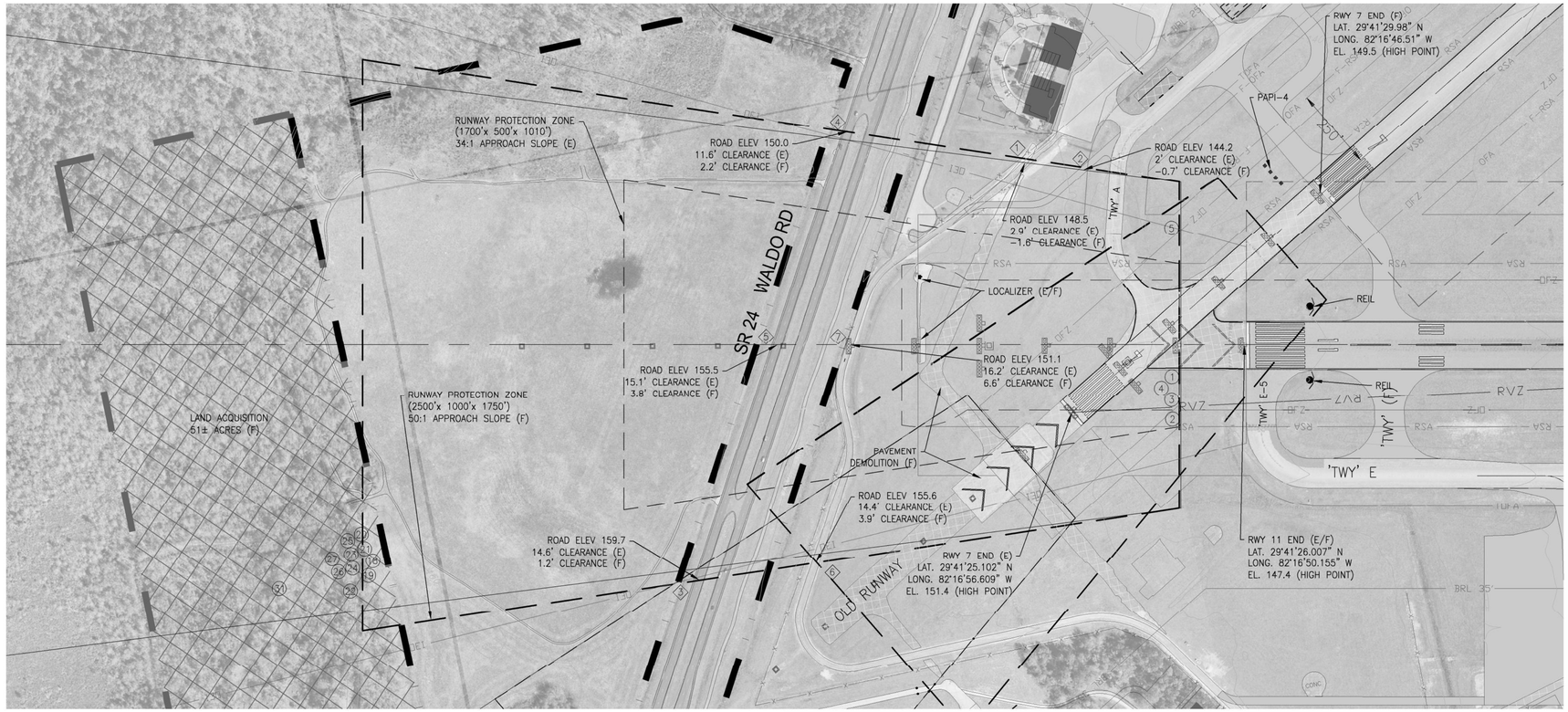
RUNWAY APPROACH PROFILE AND RPZ RUNWAY 11

SHEET NUMBER

SHEET 7 OF 17

DRAFT

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_07_AIRSPACE_PROFILE.dwg Plotted on: 12/31/2013 12:17 PM Plotted by: Morse, Ryan



OBSTRUCTION CHART (EXISTING)

OBJECT DESCRIPTION	OBJECT NUMBER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
GRD	1	148'	NPI	34:1 APPROACH	0'	NONE
GRD	2	148'	NPI	34:1 APPROACH	0'	NONE
GRD	3	148'	NPI	34:1 APPROACH	0'	NONE
GRD	4	148'	NPI	34:1 APPROACH	0'	NONE
POST GUARD	5	149'	NPI	34:1 APPROACH	1'	NONE
TREE	18	230'	NPI	34:1 APPROACH	9'	PURCHASE/REMOVE
TREE	19	222'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	20	222'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	21	229'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	22	223'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	23	225'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE
TREE	24	226'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	25	223'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	26	232'	NPI	34:1 APPROACH	9'	PURCHASE/REMOVE
TREE	27	230'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	31	232'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE

TRAVERSE WAYS (EXISTING & FUTURE)

ROAD NAME	ROAD NUMBER	ROAD ELEVATION	OBSTRUCTED PART 77 SURFACE	ROAD CLEARANCE OR PENETRATION (E/F)*	PROPOSED ROAD DISPOSITION
PERIMETER RD	1	148.5'	50:1 Approach (F)	2.9'/-1.6'	NONE
PERIMETER RD (F)	2	144.2'	50:1 Approach (F)	2'/-0.7'	NONE
WALDO RD	3	159.7'	NONE	14.6'/1.2'	
WALDO RD	4	150.0'	NONE	11.6'/2.2'	
WALDO RD	5	155.5'	NONE	15.1'/3.8'	
PERIMETER RD	6	155.6'	NONE	14.4'/3.9'	
PERIMETER RD	7	151.1'	NONE	16.2'/6.6'	

*(+) DENOTES A CLEARANCE, (-) DENOTES A PENETRATION

LEGEND

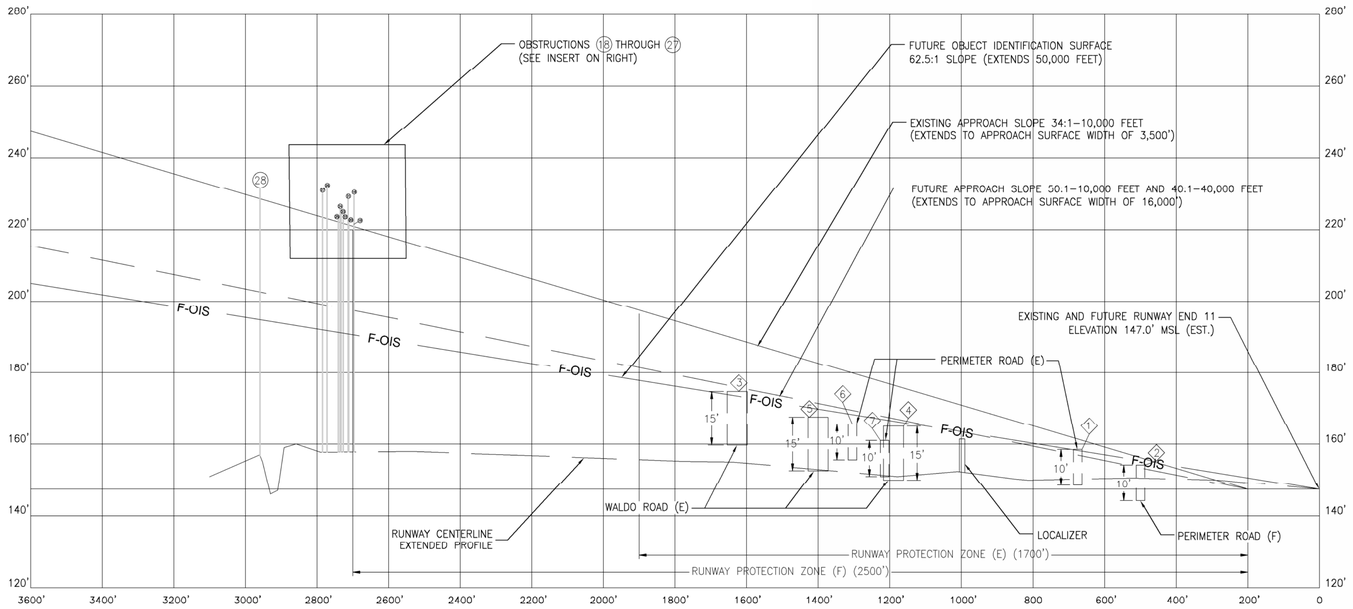
(7) OBSTRUCTION TO APPROACH SURFACE

(7) TRAVERSE WAY TO APPROACH SURFACE

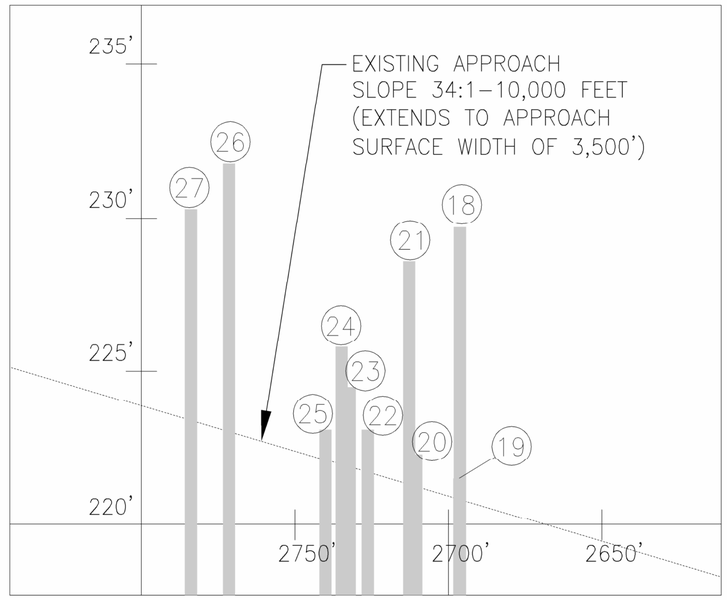
MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

VERTICAL
0 20 40 60
Scale in Feet: 1" = 20'

HORIZONTAL
0 200 400 600
Scale in Feet: 1" = 200'



RUNWAY 11 INNER PROFILE VIEW (EXISTING AND FUTURE)



EXPANDED VIEW FROM PROFILE ON LEFT

NOT FOR CONSTRUCTION

RS&H
IMPROVING YOUR WORLD
Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCG000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER 201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

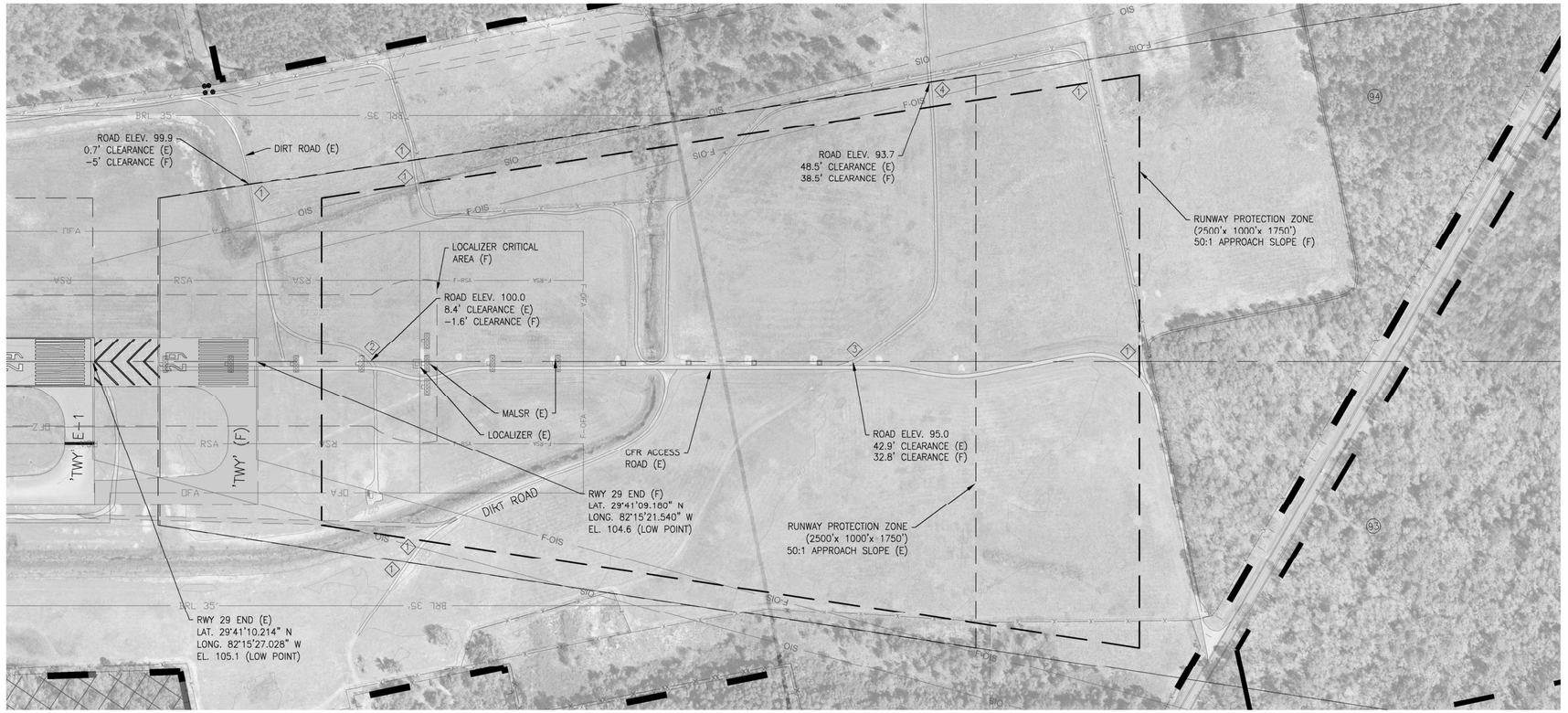
RUNWAY APPROACH PROFILE AND RPZ RUNWAY 11

SHEET NUMBER

SHEET 8 OF 17

DRAFT

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_08_RPZ11.dwg Plotted on: 12/31/2013 12:17 PM Plotted by: Morse, Ryan

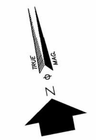


OBSTRUCTION CHART (EXISTING)						
OBJECT DESCRIPTION	OBJECT NUMBER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
TREE	93	180'	NPI	50:1 APPROACH	0'	REMOVE
TREE	94	186'	NPI	50:1 APPROACH	6'	REMOVE

TRAVERSE WAYS (EXISTING & FUTURE)					
ROAD NAME	ROAD NUMBER	ROAD ELEVATION	OBSTRUCTED PART 77 SURFACE	ROAD CLEARANCE OR PENETRATION (E/F)*	PROPOSED ROAD DISPOSITION
PERIMETER RD	1	106.5'	50:1 APPROACH (F)	3.8'/-6.2'	NONE
PERIMETER RD	2	107.1'	50:1 APPROACH (F)	4.2'/-5.8'	NONE
DIRT RD	3	99.9'	50:1 APPROACH (F)	0.7'/-5.0'	NONE
DIRT RD	4	100.0'	50:1 APPROACH (F)	8.4'/-1.6'	NONE
DIRT RD	6	90.0'	NONE	20.8'/10.8'	
DIRT RD	5	92.0'	NONE	18.6'/8.6'	
PERIMETER RD	7	95.0'	NONE	42.9'/32.9'	
PERIMETER RD	8	93.7'	NONE	48.5'/38.5'	
PERIMETER RD	9	92.4'	NONE	59.5'/49.5'	
ACCESS RD	10	90.5'	NONE	64.5'/54.5'	

*(+) DENOTES A CLEARANCE, (-) DENOTES A PENETRATION

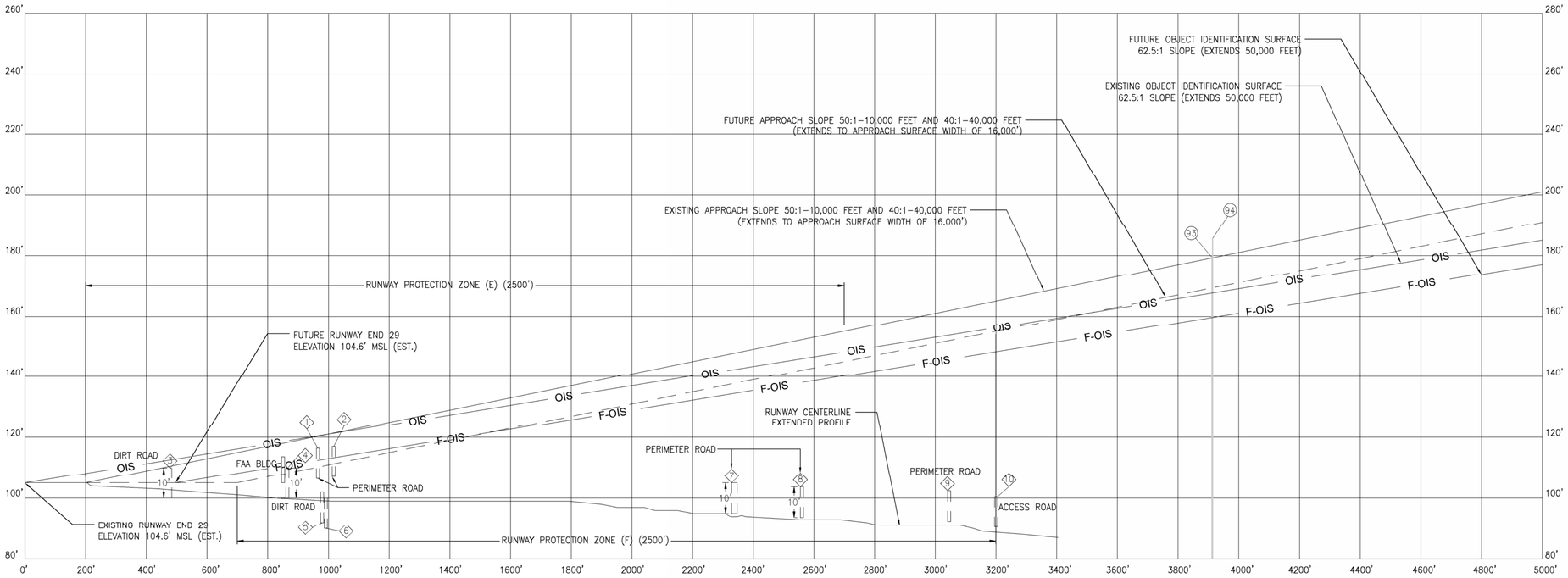
LEGEND
- (7) OBSTRUCTION TO APPROACH SURFACE
- (7) TRAVERSE WAY TO APPROACH SURFACE



MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

VERTICAL
0 20 40 60
Scale in Feet: 1" = 20'

HORIZONTAL
0 200 400 600
Scale in Feet: 1" = 200'



RUNWAY 29 INNER PROFILE VIEW

NOT FOR CONSTRUCTION

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

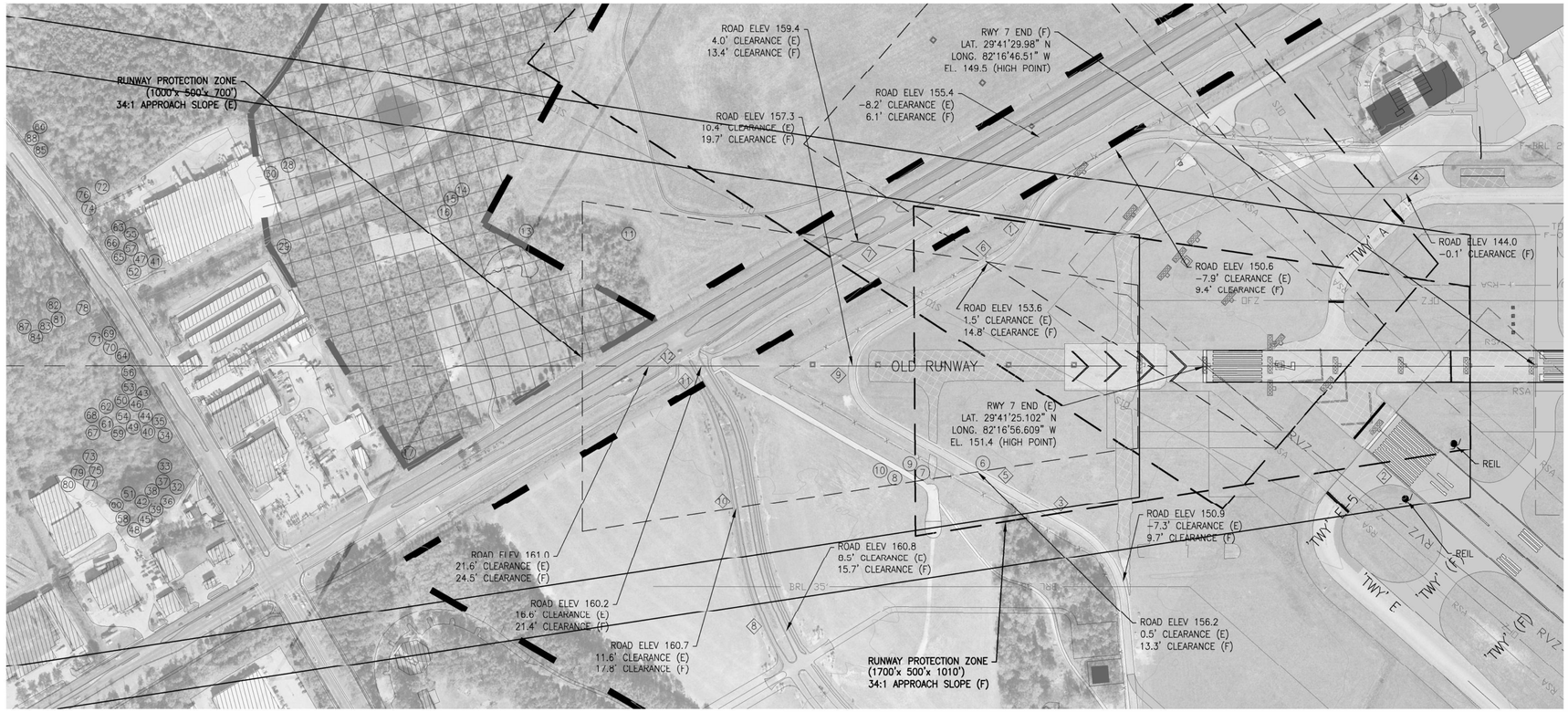
RUNWAY APPROACH PROFILE AND RPZ RUNWAY 29

SHEET NUMBER

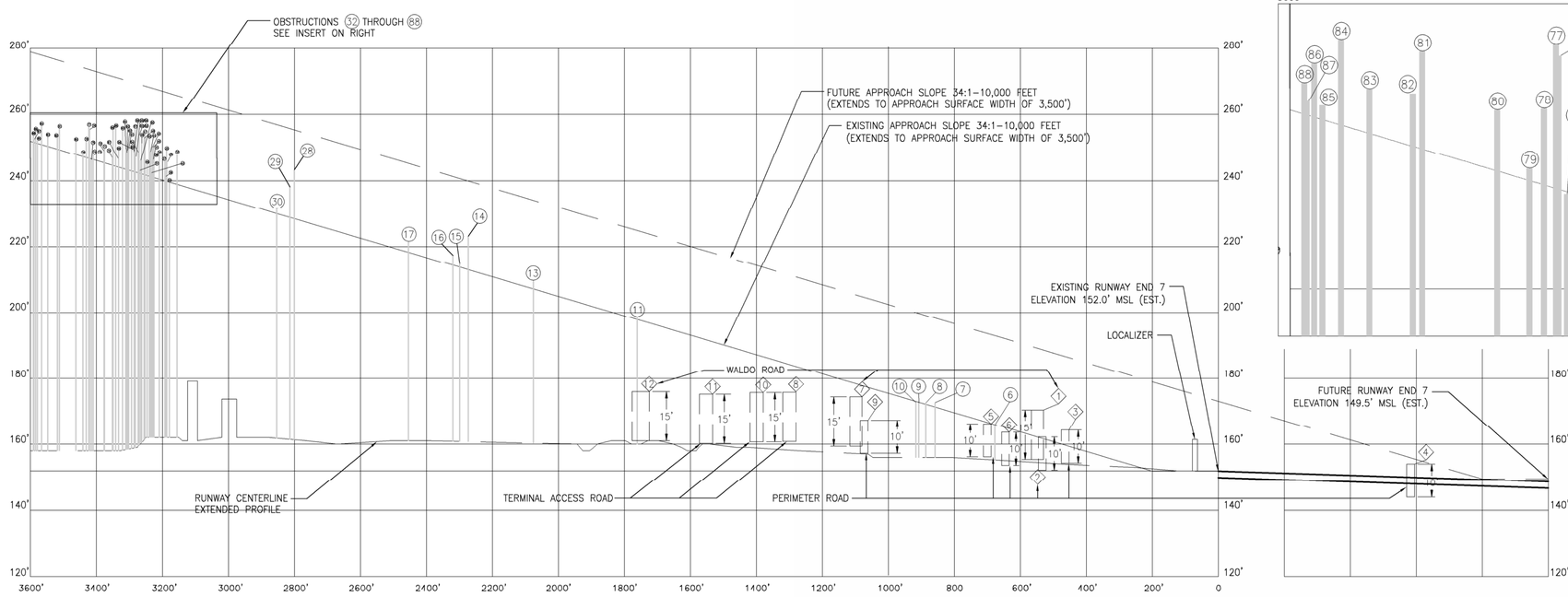
SHEET 9 OF 17

DRAFT

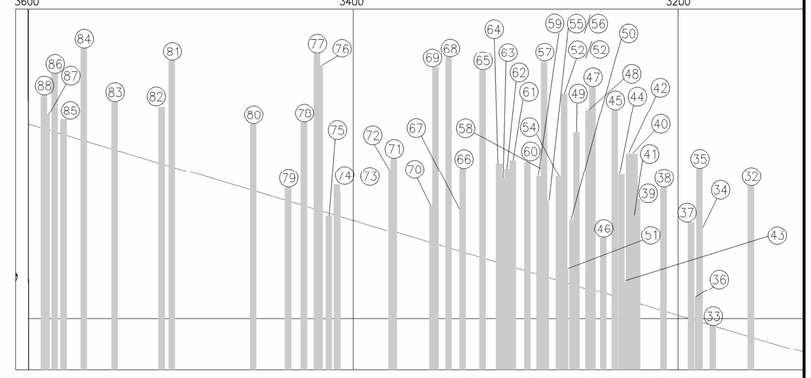
Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_09_RPZ29.dwg Plotted on: 12/31/2013 12:17 PM Plotted by: Morse, Ryon



OBSTRUCTION CHART (EXISTING)						
OBJECT DESCRIPTION	OBJECT NUMBER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
RD	6	166'	NPI	34:1 APPROACH	1'	NONE
RD	7	173'	NPI	34:1 APPROACH	2'	NONE
RD	8	173'	NPI	34:1 APPROACH	1'	NONE
RD	9	173'	NPI	34:1 APPROACH	1'	NONE
RD	10	173'	NPI	34:1 APPROACH	0'	NONE
TREE	11	199'	NPI	34:1 APPROACH	1'	REMOVE
TREE	13	210'	NPI	34:1 APPROACH	3'	REMOVE
TREE	14	223'	NPI	34:1 APPROACH	11'	PURCHASE/REMOVE
TREE	15	215'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	16	217'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	17	222'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	28	243'	NPI	34:1 APPROACH	15'	PURCHASE/REMOVE
TREE	29	238'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	30	232'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	32	248'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	33	240'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	34	246'	NPI	34:1 APPROACH	6'	PURCHASE/REMOVE
TREE	35	249'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	36	241'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	37	248'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	38	248'	NPI	34:1 APPROACH	8'	PURCHASE/REMOVE
TREE	39	247'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	40	250'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	41	246'	NPI	34:1 APPROACH	6'	PURCHASE/REMOVE
TREE	42	250'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	43	242'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	44	249'	NPI	34:1 APPROACH	8'	PURCHASE/REMOVE
TREE	45	253'	NPI	34:1 APPROACH	12'	PURCHASE/REMOVE
TREE	46	245'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	47	254'	NPI	34:1 APPROACH	13'	PURCHASE/REMOVE
TREE	48	253'	NPI	34:1 APPROACH	12'	PURCHASE/REMOVE
TREE	49	252'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	50	246'	NPI	34:1 APPROACH	5'	PURCHASE/REMOVE
TREE	51	243'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	52	254'	NPI	34:1 APPROACH	12'	PURCHASE/REMOVE
TREE	53	249'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	54	249'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	55	247'	NPI	34:1 APPROACH	5'	PURCHASE/REMOVE
TREE	56	246'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	57	256'	NPI	34:1 APPROACH	14'	PURCHASE/REMOVE
TREE	58	249'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	59	249'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	60	250'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	61	250'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	62	249'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	63	249'	NPI	34:1 APPROACH	6'	PURCHASE/REMOVE
TREE	64	250'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	65	255'	NPI	34:1 APPROACH	12'	PURCHASE/REMOVE
TREE	66	249'	NPI	34:1 APPROACH	6'	PURCHASE/REMOVE
TREE	67	247'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE
TREE	68	256'	NPI	34:1 APPROACH	12'	PURCHASE/REMOVE
TREE	69	256'	NPI	34:1 APPROACH	11'	PURCHASE/REMOVE
TREE	70	247'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE
TREE	71	250'	NPI	34:1 APPROACH	5'	PURCHASE/REMOVE
TREE	72	249'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	73	246'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	74	248'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	75	246'	NPI	34:1 APPROACH	0'	PURCHASE/REMOVE
TREE	76	256'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	77	256'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	78	252'	NPI	34:1 APPROACH	6'	PURCHASE/REMOVE
TREE	79	248'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	80	252'	NPI	34:1 APPROACH	5'	PURCHASE/REMOVE
TREE	81	256'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	82	253'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	83	253'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	84	257'	NPI	34:1 APPROACH	6'	PURCHASE/REMOVE
TREE	85	252'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	86	255'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	87	253'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	88	254'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE



RUNWAY 7 INNER PROFILE VIEW (EXISTING)



EXPANDED VIEW FROM PROFILE ON LEFT

TRAVERSE WAYS (EXISTING & FUTURE)					
ROAD NAME	ROAD NUMBER	ROAD ELEVATION	OBSTRUCTED PART 77 SURFACE	ROAD CLEARANCE OR PENETRATION (F/F)*	PROPOSED ROAD DISPOSITION
WALDO RD	1	155.4'	34:1 APPROACH (E)	-8.2'/6.1'	NONE
PERIMETER RD	2	152.2'	34:1 APPROACH (E)	-0.4'/26.6'	NONE
PERIMETER RD	3	154.3'	34:1 APPROACH (E)	-4.6'/22.4'	NONE
PERIMETER RD	4	144.0'	NONE	NA/1.9'	
PERIMETER RD	5	156.2'	NONE	0.5'/13.3'	
PERIMETER RD	6	153.6'	NONE	1.5'/14.8'	
WALDO RD	7	159.4'	NONE	4.0'/13.4'	
TERMINAL ACCESS	8	160.8'	NONE	8.5'/15.7'	
PERIMETER RD	9	157.3'	NONE	10.4'/19.7'	
TERMINAL ACCESS	10	160.7'	NONE	11.6'/17.8'	
TERMINAL ACCESS	11	160.2'	NONE	16.6'/21.4'	
WALDO RD	12	161.0'	NONE	21.6'/24.5'	

*(+) DENOTES A CLEARANCE, (-) DENOTES A PENETRATION

RUNWAY 7 INNER PROFILE VIEW (FUTURE)

LEGEND

(7) OBSTRUCTION TO APPROACH SURFACE

<7> TRAVERSE WAY TO APPROACH SURFACE

MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

HORIZONTAL
0 200 400 600
Scale in Feet: 1" = 200'

VERTICAL
0 20 40 60
Scale in Feet: 1" = 20'

NOT FOR CONSTRUCTION

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00

REVIEWED BY: GL

DRAWN BY: RJM

DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

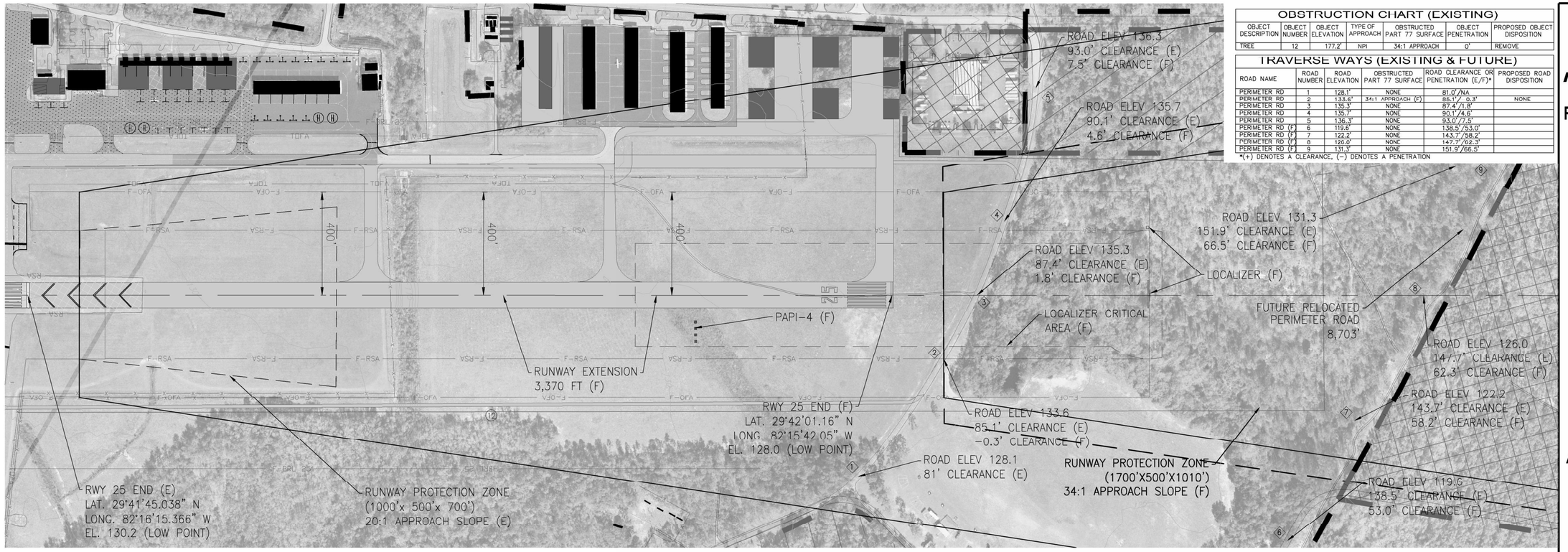
RUNWAY APPROACH PROFILE AND RPZ RUNWAY 7

SHEET NUMBER

SHEET 10 OF 17

DRAFT

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_10_RPZ07.dwg Plotted on: 12/31/2013 12:17 PM Plotted by: Morse, Ryan



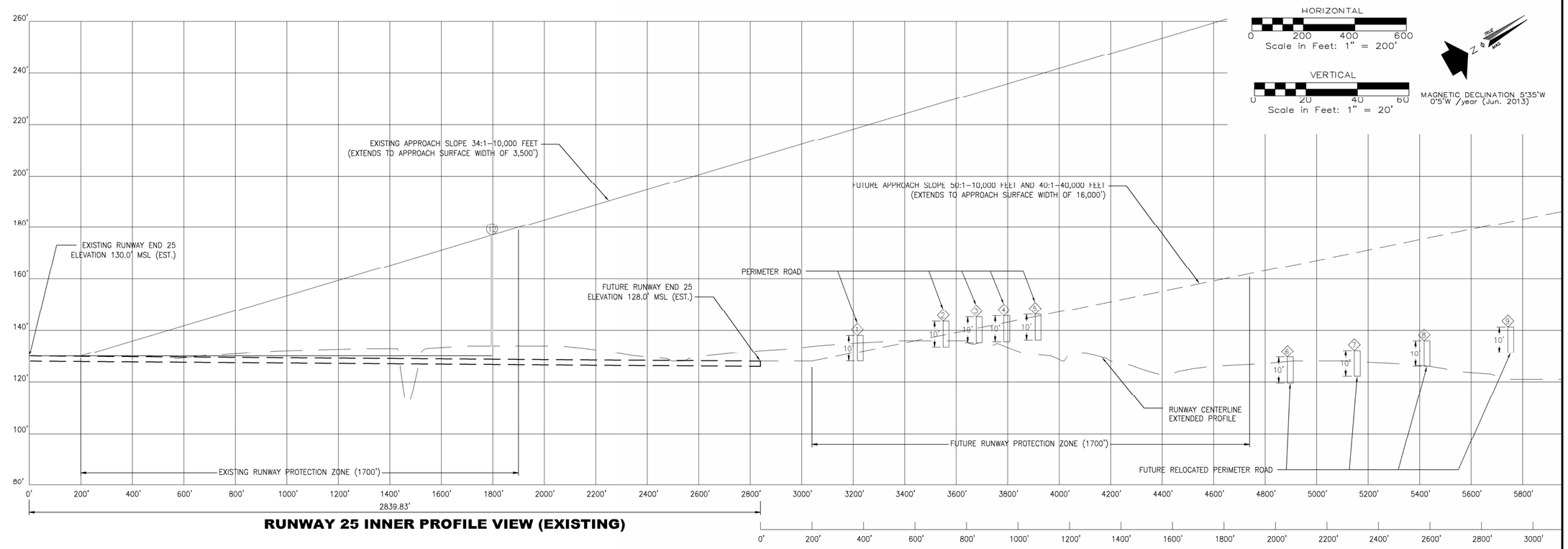
OBSTRUCTION CHART (EXISTING)

OBJECT DESCRIPTION	OBJECT NUMBER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
TREE	12	177.2'	NPI	34:1 APPROACH	0'	REMOVE

TRAVERSE WAYS (EXISTING & FUTURE)

ROAD NAME	ROAD NUMBER	ROAD ELEVATION	OBSTRUCTED PART 77 SURFACE	ROAD CLEARANCE OR PENETRATION (E/F)*	PROPOSED ROAD DISPOSITION
PERIMETER RD	1	128.1'	NONE	81.0'/NA	
PERIMETER RD	2	133.6'	34:1 APPROACH (F)	85.1'/ 0.3'	NONE
PERIMETER RD	3	135.3'	NONE	87.4'/1.8'	
PERIMETER RD	4	135.7'	NONE	90.1'/4.6'	
PERIMETER RD	5	136.3'	NONE	93.0'/7.5'	
PERIMETER RD (F)	6	119.6'	NONE	138.5'/53.0'	
PERIMETER RD (F)	7	122.2'	NONE	143.7'/58.2'	
PERIMETER RD (F)	8	126.0'	NONE	147.7'/62.3'	
PERIMETER RD (F)	9	131.3'	NONE	151.9'/66.5'	

*(+) DENOTES A CLEARANCE, (-) DENOTES A PENETRATION



NOT FOR CONSTRUCTION

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCG000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

RUNWAY APPROACH PROFILE AND RPZ RUNWAY 25

SHEET NUMBER

SHEET 11 OF 17

DRAFT

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_11_RPZ25.dwg Plotted on: 12/31/2013 12:18 PM Plotted by: Morse, Ryan



RUNWAY 29

LEGEND		
DESCRIPTION	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
RUNWAY PROTECTION ZONE		N/A
ONE ENGINE INOPERATIVE SURFACE	OIS	F-OIS
RUNWAY PAVEMENT		

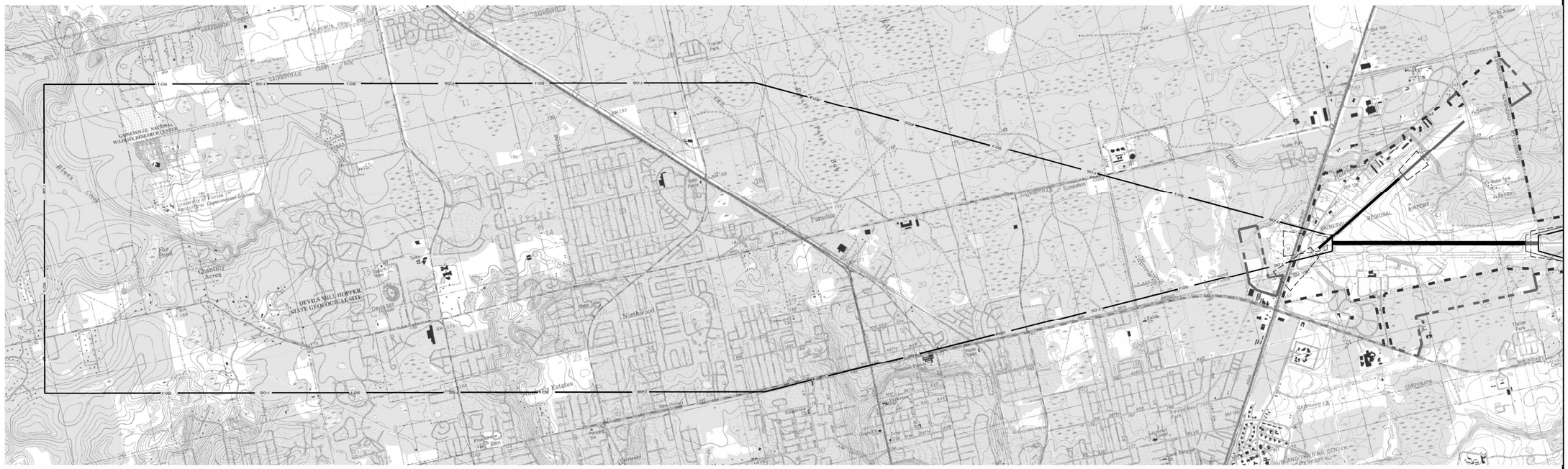
0 2,000' 4,000' 6,000'

SCALE 1"=2,000'

TRUE MAG N

MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

RUNWAY 11



NOT FOR CONSTRUCTION

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCG000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER 201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

OBJECT IDENTIFICATION SURFACE (OIS) (DEPARTURE OIS SURFACE)

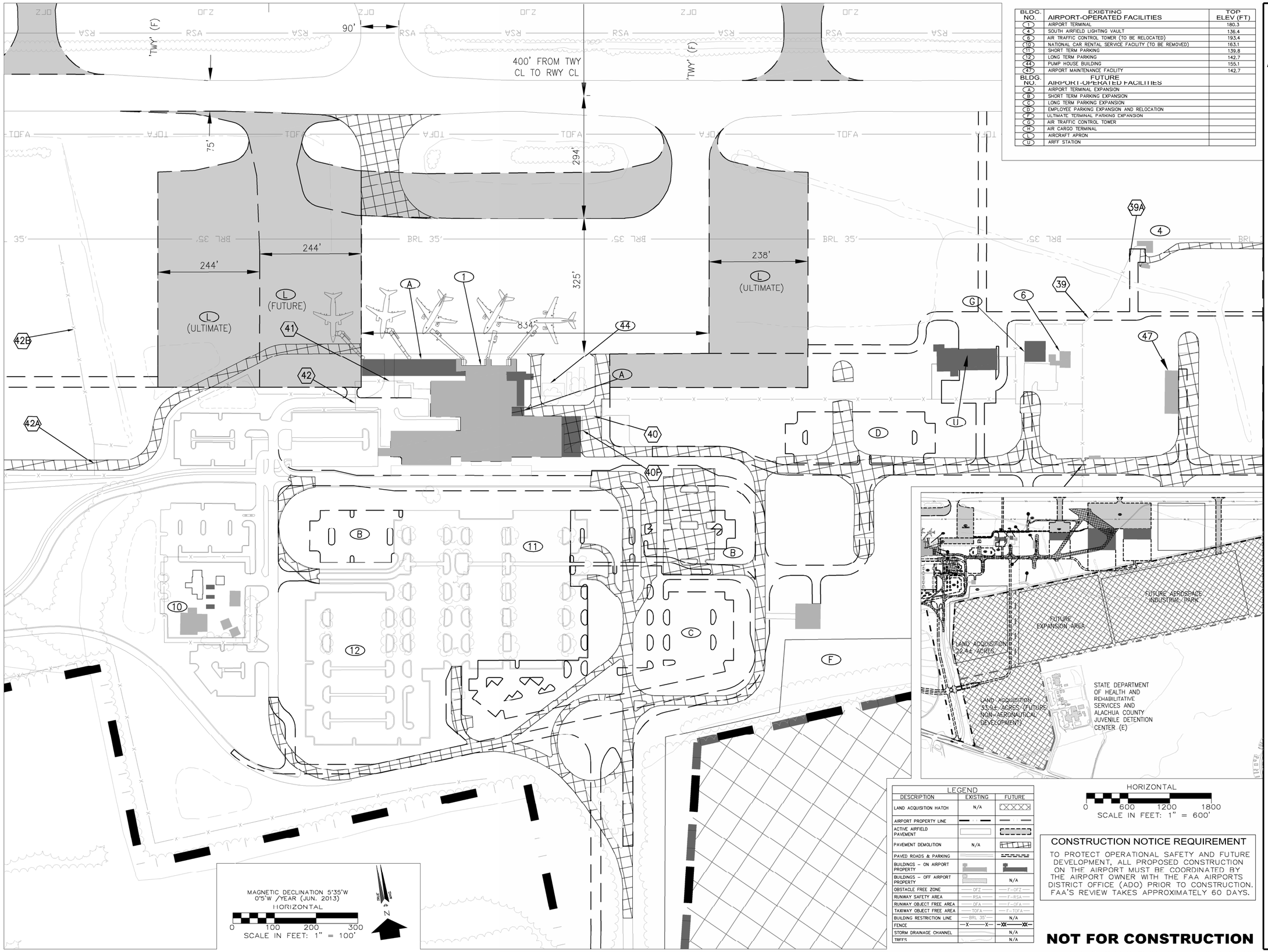
SHEET NUMBER

SHEET 12 OF 17

DRAFT

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_12_DEP_OEI.dwg Plotted on: 12/31/2013 12:18 PM Plotted by: Morse, Ryan

BLDG. NO.	EXISTING AIRPORT-OPERATED FACILITIES	TOP ELEV (FT)
1	AIRPORT TERMINAL	180.3
4	SOUTH AIRFIELD LIGHTING VAULT	136.4
6	AIR TRAFFIC CONTROL TOWER (TO BE RELOCATED)	193.4
10	NATIONAL CAR RENTAL SERVICE FACILITY (TO BE REMOVED)	163.1
11	SHORT TERM PARKING	139.8
12	LONG TERM PARKING	142.7
44	PUMP HOUSE BUILDING	155.1
47	AIRPORT MAINTENANCE FACILITY	142.7
BLDG. NO.	FUTURE AIRPORT-OPERATED FACILITIES	
A	AIRPORT TERMINAL EXPANSION	
B	SHORT TERM PARKING EXPANSION	
C	LONG TERM PARKING EXPANSION	
D	EMPLOYEE PARKING EXPANSION AND RELOCATION	
F	ULTIMATE TERMINAL PARKING EXPANSION	
G	AIR TRAFFIC CONTROL TOWER	
H	AIR CARGO TERMINAL	
L	AIRCRAFT APRON	
U	ARFF STATION	



MAGNETIC DECLINATION 5°35'W
0°5'W /YEAR (JUN. 2013)
HORIZONTAL
0 100 200 300
SCALE IN FEET: 1" = 100'

LEGEND		
DESCRIPTION	EXISTING	FUTURE
LAND ACQUISITION HATCH	N/A	
AIRPORT PROPERTY LINE		
ACTIVE AIRFIELD PAVEMENT		
PAVEMENT DEMOLITION	N/A	
PAVED ROADS & PARKING		
BUILDINGS – ON AIRPORT PROPERTY		
BUILDINGS – OFF AIRPORT PROPERTY		N/A
OBSTACLE FREE ZONE	OFZ	F-OFZ
RUNWAY SAFETY AREA	RSA	F-RSA
RUNWAY OBJECT FREE AREA	OFA	F-OFA
TAXIWAY OBJECT FREE AREA	TOFA	F-TOFA
BUILDING RESTRICTION LINE	BRL 35'	N/A
FENCE	X X	X X
STORM DRAINAGE CHANNEL		N/A
TWFFN		N/A

HORIZONTAL
0 600 1200 1800
SCALE IN FEET: 1" = 600'

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE (ADO) PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

NOT FOR CONSTRUCTION

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCG000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER 201-3363-107

©2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

TERMINAL AREA PLAN

SHEET NUMBER

SHEET 13 OF 17

DRAFT

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_13_TERMINAL.dwg Plotted on: 12/31/2013 12:19 PM Plotted by: Morse, Ryan

LEGEND		
DESCRIPTION	EXISTING	FUTURE
LAND ACQUISITION HATCH	N/A	
AIRPORT PROPERTY LINE		
AIRPORT INDUSTRIAL PARK		N/A
FUTURE AVIATION RELATED DEVELOPMENT	N/A	
FUTURE NON-AVIATION RELATED DEVELOPMENT	N/A	
ACTIVE AIRFIELD PAVEMENT		
PAVEMENT DEMOLITION	N/A	
BUILDING DEMOLITION	N/A	
PAVED ROADS & PARKING		
FENCE	X X	XX XX
GATE LOCATION (# OR UNKNOWN)		N/A
DESCRIPTION	EXISTING	FUTURE
BUILDINGS – ON AIRPORT PROPERTY		
BUILDINGS – OFF AIRPORT PROPERTY		N/A
OBSTACLE FREE ZONE	OFZ	F-OFZ
RUNWAY SAFETY AREA	RSA	F-RSA
RUNWAY OBJECT FREE AREA	OFA	F-OFA
TAXIWAY OBJECT FREE AREA	TOFA	F-TOFA
RUNWAY VISIBILITY ZONE	RVZ	F-RVZ
BUILDING RESTRICTION LINE	BRL 32'	F-BRL 32'
ONE ENGINE INOPERATIVE SURFACE	OEI	F-OEI
RUNWAY PROTECTION ZONE		
STORM DRAINAGE CHANNEL		
TREES		N/A
APRON TIE DOWN		N/A
PAPI		
BEACON		

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE (ADO) PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

HORIZONTAL
0 100 200 300
Scale in Feet: 1" = 100'

BLDG. NO.	EXISTING AIRPORT-OPERATED FACILITIES	TOP ELEV (FT)
2	AIRCRAFT MAINTENANCE HANGAR (125'X124')	175.4
3	FUEL STORAGE FACILITY	154.2
5	ARFF STATION (TO BE RELOCATED)	163.2
8	ROTATING BEACON (TO BE RELOCATED)	235.4
9	VAC MAINTENANCE BUILDING	173.0
13	OFFICE (118'X88')	168.8
14	BOX HANGAR (121'X73')	169.2
15	BOX HANGAR (96'X91')	178.1
16	BOX HANGAR (126'X102')	174.5
17	BOX HANGAR (124'X98')	174.0
18	UNIVERSITY AIR CENTER TERMINAL BUILDING	162.1
19	FEDERAL EXPRESS SORT FACILITY (TO BE REMOVED)	154.0
20	FAA TECHNICAL OPERATIONS OFFICE	150.4
21	PORT-A-PORT	150.0
22	T-HANGAR BUILDING A (311'X34')	151.7
23	PORT-A-PORTS	152.8
24	T-HANGAR BUILDING D (381'X52')	152.3
25	T-HANGAR BUILDING F (315'X35')	148.2
26	STORAGE HANGAR (100'X70')	162.3
27	BOX HANGAR (147'X74')	161.8
28	ABANDONED BUILDING	154.8
29	PORT-A-PORTS (TO BE REMOVED)	153.9
30	SUNSHADES	158.5
31	BOX HANGAR (63'X61')	172.3
31A	MODULAR OFFICE BUILDING	155.1
32	T-HANGAR BUILDING I (323'X49')	162.6
33	T-HANGAR BUILDING J (313'X53')	159.0
38	BOX HANGAR (308'X164')	189.0
39	BOX HANGAR (147'X102')	178.3
40	SERVICE HANGAR (166'X100')	178.7
41	NORTH AIRFIELD LIGHTING VAULT	153.0
42	T-HANGAR BUILDING K (313'X58')	162.2
43	T-HANGAR BUILDING L (316'X53')	160.1
45	STORAGE SHED	147.5
46	ASOS ANTENNA	231.9
49	SKY CHIEFS AVIATION TRAILER	

BLDG. NO.	FUTURE AIRPORT-OPERATED FACILITIES
J	AIR CARGO/MRO FACILITY
M	GA FBO BUILDING
N	ELECTRICAL VAULT
P	FUEL FARM EXPANSION
Q	T-HANGAR
R	3RD FBO HANGAR
M	UNIVERSITY AIR CENTER BUILDING EXPANSION

SR 24 WALDO RD
NE 40th TER
NE 47th AVE
NE 40TH TER
NE 45th AVE
NE 41st TER
PROPOSED RELOCATED BEACON
APRON STRENGTHENING AREA (F)
GENERAL AVIATION APRON
DRAINAGE IMPROVEMENT AREA (F)
522' FROM TWY CL TO RWY CL
MATCHLINE SHEET 12
NOT FOR CONSTRUCTION

RS&H
IMPROVING YOUR WORLD
Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCG000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

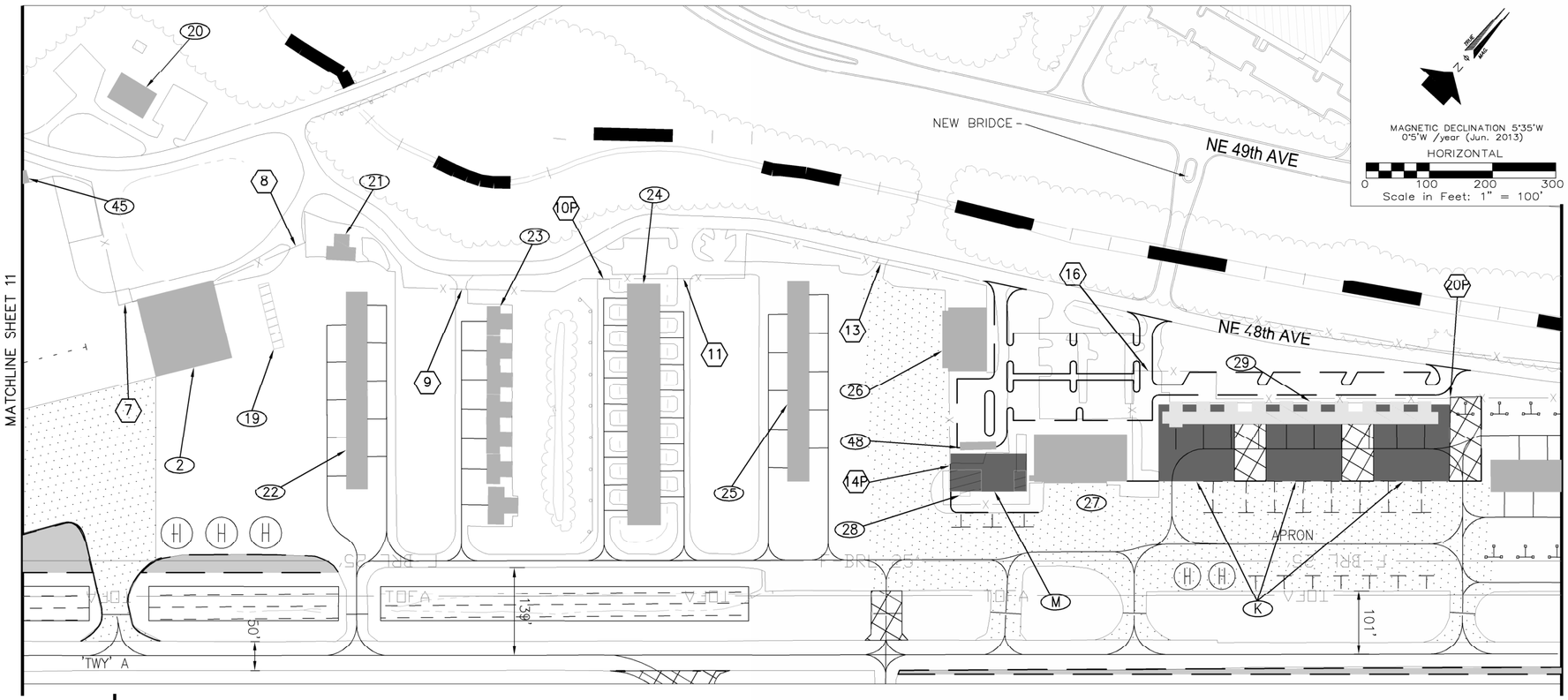
GENERAL AVIATION AREA PLAN (1 OF 2)

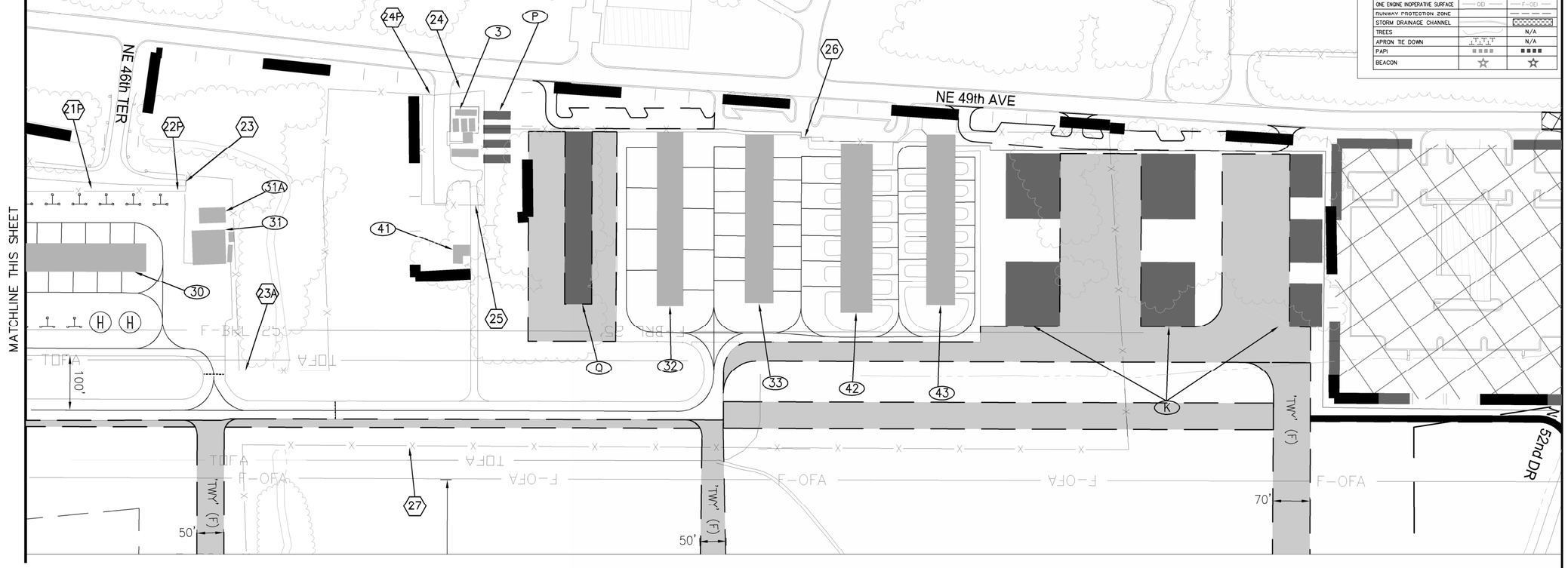
SHEET NUMBER

SHEET 14 OF 17

DRAFT

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_14_GA1.dwg Plotted on: 12/31/2013 12:19 PM Plotted by: Morse, Ryan





BLDG. NO.	EXISTING AIRPORT-OPERATED FACILITIES	TOP ELEV (FT)
2	AIRCRAFT MAINTENANCE HANGAR (125'X124')	175.4
3	FUEL STORAGE FACILITY	154.2
5	ARFF STATION (TO BE RELOCATED)	163.2
8	ROTATING BEACON (TO BE RELOCATED)	235.4
9	VAC MAINTENANCE BUILDING	173.0
13	OFFICE (118'X88')	168.8
14	BOX HANGAR (121'X73')	169.2
15	BOX HANGAR (96'X91")	178.1
16	BOX HANGAR (126'X102')	174.5
17	BOX HANGAR (124'X90')	174.0
18	UNIVERSITY AIR CENTER TERMINAL BUILDING	162.1
19	FEDERAL EXPRESS SORT FACILITY (TO BE REMOVED)	154.0
20	FAA TECHNICAL OPERATIONS OFFICE	150.4
21	PORT-A-PORT	150.0
22	T-HANGAR BUILDING A (311'X14")	151.7
23	PORT-A-PORTS	152.8
24	T-HANGAR BUILDING D (381'X52')	152.3
25	T-HANGAR BUILDING F (315'X35')	148.2
26	STORAGE HANGAR (100'X70')	162.3
27	BOX HANGAR (147'X76')	161.8
28	ABANDONED BUILDING	154.8
29	PORT-A-PORTS (TO BE REMOVED)	153.9
30	SUNSHADES	158.5
31	BOX HANGAR (63'X61')	172.3
31A	MODULAR OFFICE BUILDING	155.1
32	T-HANGAR BUILDING I (323'X49')	162.6
33	T-HANGAR BUILDING J (313'X53')	159.0
38	BOX HANGAR (308'X164')	189.0
39	BOX HANGAR (147'X102')	178.3
40	SERVICE HANGAR (166'X100')	178.7
41	NORTH AIRFIELD LIGHTING VAULT	163.6
42	T-HANGAR BUILDING K (313'X58')	162.2
43	T-HANGAR BUILDING L (316'X53')	160.1
45	STORAGE SHED	147.5
45	ASOS ANTENNA	231.9
48	SKY CHIEFS AVIATION TRAILER	
BLDG. NO.	FUTURE AIRPORT-OPERATED FACILITIES	
M	GA FBO BUILDING	
N	ELECTRICAL VAULT	
P	FUEL FARM EXPANSION	
Q	T-HANGAR	
R	3RD FBO HANGAR	

LEGEND		
DESCRIPTION	EXISTING	FUTURE
LAND ACQUISITION HATCH	N/A	
AIRPORT PROPERTY LINE		
AIRPORT INDUSTRIAL PARK		N/A
FUTURE AVIATION RELATED DEVELOPMENT	N/A	
FUTURE NON- AVIATION RELATED DEVELOPMENT	N/A	
ACTIVE AIRFIELD PAVEMENT		
PAVEMENT DEMOLITION	N/A	
BUILDING DEMOLITION	N/A	
PAVED ROADS & PARKING		
FENCE	-X-X-	-XX-XX-
GATE LOCATION (# OR UNKNOWN)		N/A
DESCRIPTION	EXISTING	FUTURE
BUILDINGS - ON AIRPORT PROPERTY		
BUILDINGS - OFF AIRPORT PROPERTY		N/A
OBSTACLE FREE ZONE	OFZ	F-OFZ
RUNWAY SAFETY AREA	RSA	F-RSA
RUNWAY OBJECT FREE AREA	ROFA	F-ROFA
TAXIWAY OBJECT FREE AREA	TOFA	F-TOFA
RUNWAY VISIBILITY ZONE	RVZ	F-RVZ
BUILDING RESTRICTION LINE	BRL 35'	F-BRL 35'
ONE ENGINE INOPERATIVE SURFACE	OEI	F-OEI
RUNWAY PROTECTION ZONE		
STORM DRAINAGE CHANNEL		
TREES		N/A
APRON TIE DOWN		N/A
PAPI		
BEACON		

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER 201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

GENERAL AVIATION AREA PLAN (2 OF 2)

SHEET NUMBER

SHEET 15 OF 17

DRAFT

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_15_GA2.dwg Plotted on: 12/31/2013 12:19 PM Plotted by: Morse, Ryan

AIRPORT ZONING NOTES.

THE CITY OF GAINESVILLE GOVERNS LAND USE THOUGH FOUR TYPES OF AIRPORT ZONES

1. LAND USES WITHIN AREAS GREATER THAN DNL 55.
2. LAND USES WITH RUNWAY PROTECTION ZONES.
3. HEIGHT LIMITATION COINCIDENT WITH PART 77 SURFACES
4. SCHOOL BUILDING PROHIBITION PER FLORIDA STATUTES CHAPTER 333.03(3)

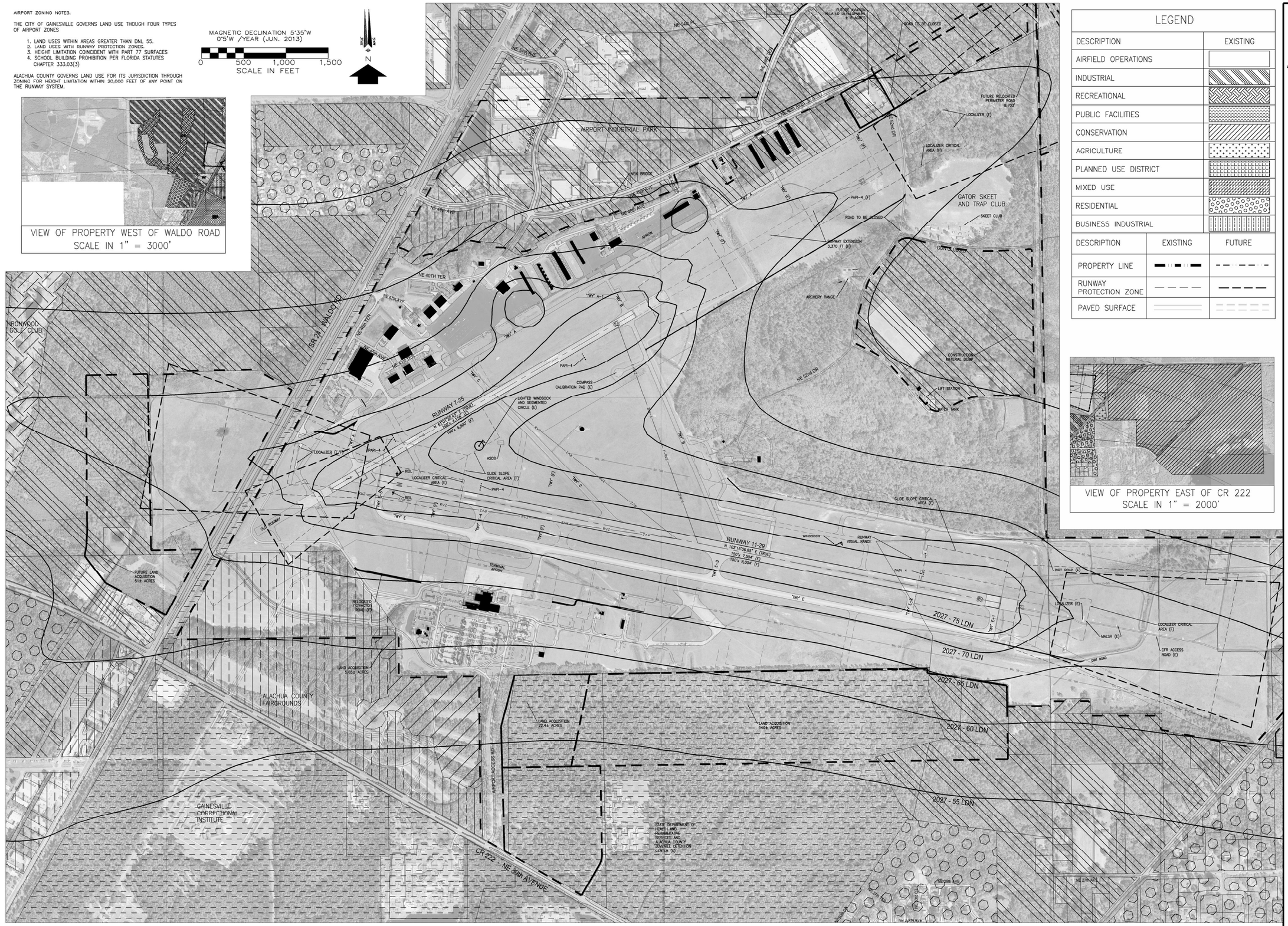
ALACHUA COUNTY GOVERNS LAND USE FOR ITS JURISDICTION THROUGH ZONING FOR HEIGHT LIMITATION WITHIN 20,000 FEET OF ANY POINT ON THE RUNWAY SYSTEM.

MAGNETIC DECLINATION 5°35'W
0°5'W /YEAR (JUN. 2013)

0 500 1,000 1,500
SCALE IN FEET

N

VIEW OF PROPERTY WEST OF WALDO ROAD
SCALE IN 1" = 3000'

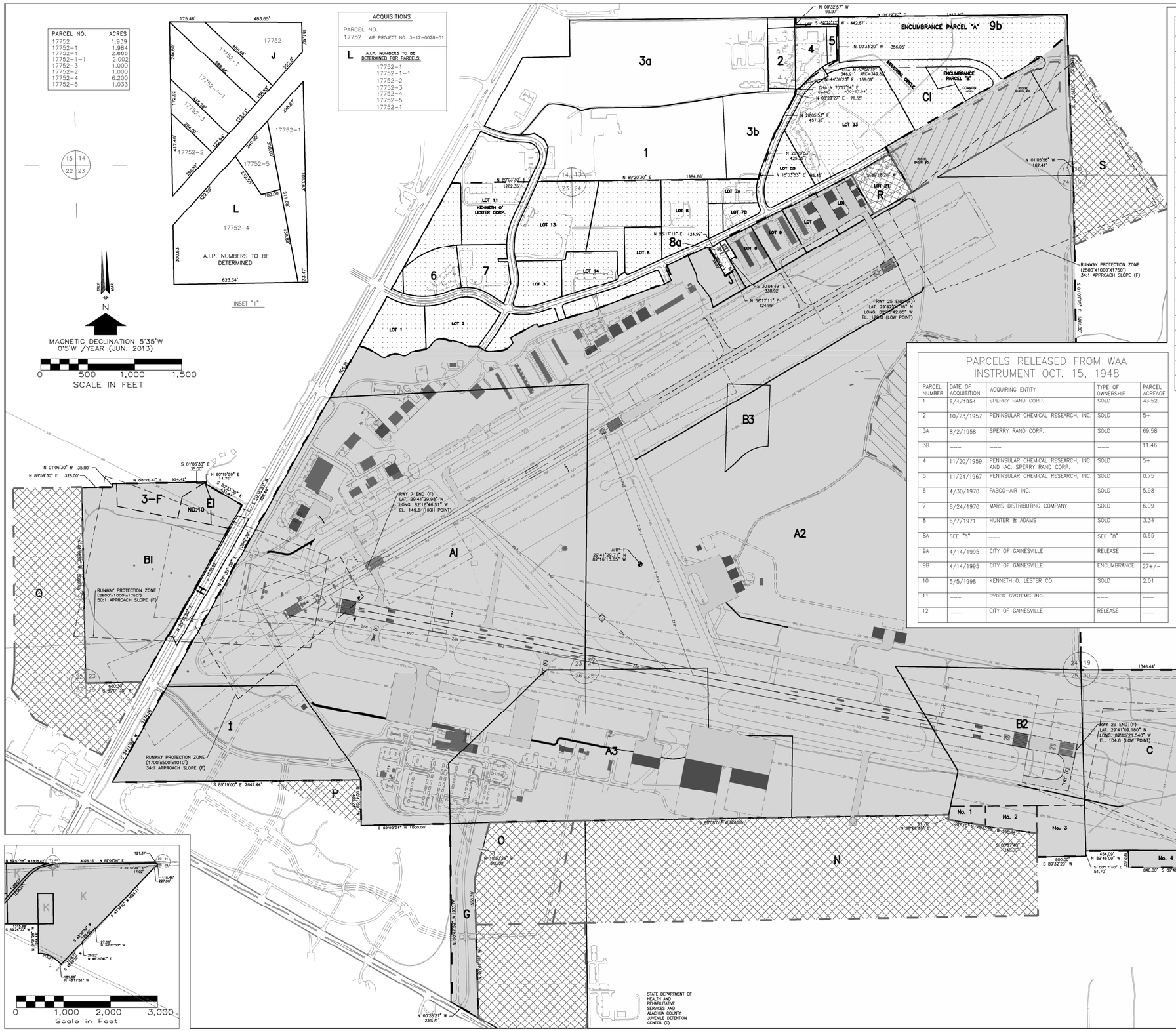

AIRPORT INDUSTRIAL PARK
NE 49TH AVE
NE 48TH AVE
NE 47TH AVE
NE 40TH TER
NE 39TH AVE
NE 52ND DR
NE 53RD DR
NE 54TH PL
NE 55TH AVE
NE 56TH AVE
NE 57TH AVE
NE 58TH AVE
NE 59TH AVE
NE 60TH AVE
NE 61ST AVE
NE 62ND AVE
NE 63RD AVE
NE 64TH PL
NE 65TH AVE
NE 66TH AVE
NE 67TH AVE
NE 68TH AVE
NE 69TH AVE
NE 70TH AVE
NE 71ST AVE
NE 72ND AVE
NE 73RD AVE
NE 74TH AVE
NE 75TH AVE
NE 76TH AVE
NE 77TH AVE
NE 78TH AVE
NE 79TH AVE
NE 80TH AVE
NE 81ST AVE
NE 82ND AVE
NE 83RD AVE
NE 84TH AVE
NE 85TH AVE
NE 86TH AVE
NE 87TH AVE
NE 88TH AVE
NE 89TH AVE
NE 90TH AVE
NE 91ST AVE
NE 92ND AVE
NE 93RD AVE
NE 94TH AVE
NE 95TH AVE
NE 96TH AVE
NE 97TH AVE
NE 98TH AVE
NE 99TH AVE
NE 100TH AVE
NE 101ST AVE
NE 102ND AVE
NE 103RD AVE
NE 104TH AVE
NE 105TH AVE
NE 106TH AVE
NE 107TH AVE
NE 108TH AVE
NE 109TH AVE
NE 110TH AVE
NE 111TH AVE
NE 112TH AVE
NE 113TH AVE
NE 114TH AVE
NE 115TH AVE
NE 116TH AVE
NE 117TH AVE
NE 118TH AVE
NE 119TH AVE
NE 120TH AVE
NE 121ST AVE
NE 122ND AVE
NE 123RD AVE
NE 124TH AVE
NE 125TH AVE
NE 126TH AVE
NE 127TH AVE
NE 128TH AVE
NE 129TH AVE
NE 130TH AVE
NE 131ST AVE
NE 132ND AVE
NE 133RD AVE
NE 134TH AVE
NE 135TH AVE
NE 136TH AVE
NE 137TH AVE
NE 138TH AVE
NE 139TH AVE
NE 140TH AVE
NE 141ST AVE
NE 142ND AVE
NE 143RD AVE
NE 144TH AVE
NE 145TH AVE
NE 146TH AVE
NE 147TH AVE
NE 148TH AVE
NE 149TH AVE
NE 150TH AVE
NE 151ST AVE
NE 152ND AVE
NE 153RD AVE
NE 154TH AVE
NE 155TH AVE
NE 156TH AVE
NE 157TH AVE
NE 158TH AVE
NE 159TH AVE
NE 160TH AVE
NE 161ST AVE
NE 162ND AVE
NE 163RD AVE
NE 164TH AVE
NE 165TH AVE
NE 166TH AVE
NE 167TH AVE
NE 168TH AVE
NE 169TH AVE
NE 170TH AVE
NE 171ST AVE
NE 172ND AVE
NE 173RD AVE
NE 174TH AVE
NE 175TH AVE
NE 176TH AVE
NE 177TH AVE
NE 178TH AVE
NE 179TH AVE
NE 180TH AVE
NE 181ST AVE
NE 182ND AVE
NE 183RD AVE
NE 184TH AVE
NE 185TH AVE
NE 186TH AVE
NE 187TH AVE
NE 188TH AVE
NE 189TH AVE
NE 190TH AVE
NE 191ST AVE
NE 192ND AVE
NE 193RD AVE
NE 194TH AVE
NE 195TH AVE
NE 196TH AVE
NE 197TH AVE
NE 198TH AVE
NE 199TH AVE
NE 200TH AVE
NE 201ST AVE
NE 202ND AVE
NE 203RD AVE
NE 204TH AVE
NE 205TH AVE
NE 206TH AVE
NE 207TH AVE
NE 208TH AVE
NE 209TH AVE
NE 210TH AVE
NE 211TH AVE
NE 212TH AVE
NE 213TH AVE
NE 214TH AVE
NE 215TH AVE
NE 216TH AVE
NE 217TH AVE
NE 218TH AVE
NE 219TH AVE
NE 220TH AVE
NE 221ST AVE
NE 222ND AVE
NE 223RD AVE
NE 224TH AVE
NE 225TH AVE
NE 226TH AVE
NE 227TH AVE
NE 228TH AVE
NE 229TH AVE
NE 230TH AVE
NE 231ST AVE
NE 232ND AVE
NE 233RD AVE
NE 234TH AVE
NE 235TH AVE
NE 236TH AVE
NE 237TH AVE
NE 238TH AVE
NE 239TH AVE
NE 240TH AVE
NE 241ST AVE
NE 242ND AVE
NE 243RD AVE
NE 244TH AVE
NE 245TH AVE
NE 246TH AVE
NE 247TH AVE
NE 248TH AVE
NE 249TH AVE
NE 250TH AVE
NE 251ST AVE
NE 252ND AVE
NE 253RD AVE
NE 254TH AVE
NE 255TH AVE
NE 256TH AVE
NE 257TH AVE
NE 258TH AVE
NE 259TH AVE
NE 260TH AVE
NE 261ST AVE
NE 262ND AVE
NE 263RD AVE
NE 264TH AVE
NE 265TH AVE
NE 266TH AVE
NE 267TH AVE
NE 268TH AVE
NE 269TH AVE
NE 270TH AVE
NE 271ST AVE
NE 272ND AVE
NE 273RD AVE
NE 274TH AVE
NE 275TH AVE
NE 276TH AVE
NE 277TH AVE
NE 278TH AVE
NE 279TH AVE
NE 280TH AVE
NE 281ST AVE
NE 282ND AVE
NE 283RD AVE
NE 284TH AVE
NE 285TH AVE
NE 286TH AVE
NE 287TH AVE
NE 288TH AVE
NE 289TH AVE
NE 290TH AVE
NE 291ST AVE
NE 292ND AVE
NE 293RD AVE
NE 294TH AVE
NE 295TH AVE
NE 296TH AVE
NE 297TH AVE
NE 298TH AVE
NE 299TH AVE
NE 300TH AVE
NE 301ST AVE
NE 302ND AVE
NE 303RD AVE
NE 304TH AVE
NE 305TH AVE
NE 306TH AVE
NE 307TH AVE
NE 308TH AVE
NE 309TH AVE
NE 310TH AVE
NE 311TH AVE
NE 312TH AVE
NE 313TH AVE
NE 314TH AVE
NE 315TH AVE
NE 316TH AVE
NE 317TH AVE
NE 318TH AVE
NE 319TH AVE
NE 320TH AVE
NE 321ST AVE
NE 322ND AVE
NE 323RD AVE
NE 324TH AVE
NE 325TH AVE
NE 326TH AVE
NE 327TH AVE
NE 328TH AVE
NE 329TH AVE
NE 330TH AVE
NE 331ST AVE
NE 332ND AVE
NE 333RD AVE
NE 334TH AVE
NE 335TH AVE
NE 336TH AVE
NE 337TH AVE
NE 338TH AVE
NE 339TH AVE
NE 340TH AVE
NE 341ST AVE
NE 342ND AVE
NE 343RD AVE
NE 344TH AVE
NE 345TH AVE
NE 346TH AVE
NE 347TH AVE
NE 348TH AVE
NE 349TH AVE
NE 350TH AVE
NE 351ST AVE
NE 352ND AVE
NE 353RD AVE
NE 354TH AVE
NE 355TH AVE
NE 356TH AVE
NE 357TH AVE
NE 358TH AVE
NE 359TH AVE
NE 360TH AVE
NE 361ST AVE
NE 362ND AVE
NE 363RD AVE
NE 364TH AVE
NE 365TH AVE
NE 366TH AVE
NE 367TH AVE
NE 368TH AVE
NE 369TH AVE
NE 370TH AVE
NE 371ST AVE
NE 372ND AVE
NE 373RD AVE
NE 374TH AVE
NE 375TH AVE
NE 376TH AVE
NE 377TH AVE
NE 378TH AVE
NE 379TH AVE
NE 380TH AVE
NE 381ST AVE
NE 382ND AVE
NE 383RD AVE
NE 384TH AVE
NE 385TH AVE
NE 386TH AVE
NE 387TH AVE
NE 388TH AVE
NE 389TH AVE
NE 390TH AVE
NE 391ST AVE
NE 392ND AVE
NE 393RD AVE
NE 394TH AVE
NE 395TH AVE
NE 396TH AVE
NE 397TH AVE
NE 398TH AVE
NE 399TH AVE
NE 400TH AVE
NE 401ST AVE
NE 402ND AVE
NE 403RD AVE
NE 404TH AVE
NE 405TH AVE
NE 406TH AVE
NE 407TH AVE
NE 408TH AVE
NE 409TH AVE
NE 410TH AVE
NE 411TH AVE
NE 412TH AVE
NE 413TH AVE
NE 414TH AVE
NE 415TH AVE
NE 416TH AVE
NE 417TH AVE
NE 418TH AVE
NE 419TH AVE
NE 420TH AVE
NE 421ST AVE
NE 422ND AVE
NE 423RD AVE
NE 424TH AVE
NE 425TH AVE
NE 426TH AVE
NE 427TH AVE
NE 428TH AVE
NE 429TH AVE
NE 430TH AVE
NE 431ST AVE
NE 432ND AVE
NE 433RD AVE
NE 434TH AVE
NE 435TH AVE
NE 436TH AVE
NE 437TH AVE
NE 438TH AVE
NE 439TH AVE
NE 440TH AVE
NE 441ST AVE
NE 442ND AVE
NE 443RD AVE
NE 444TH AVE
NE 445TH AVE
NE 446TH AVE
NE 447TH AVE
NE 448TH AVE
NE 449TH AVE
NE 450TH AVE
NE 451ST AVE
NE 452ND AVE
NE 453RD AVE
NE 454TH AVE
NE 455TH AVE
NE 456TH AVE
NE 457TH AVE
NE 458TH AVE
NE 459TH AVE
NE 460TH AVE
NE 461ST AVE
NE 462ND AVE
NE 463RD AVE
NE 464TH AVE
NE 465TH AVE
NE 466TH AVE
NE 467TH AVE
NE 468TH AVE
NE 469TH AVE
NE 470TH AVE
NE 471ST AVE
NE 472ND AVE
NE 473RD AVE
NE 474TH AVE
NE 475TH AVE
NE 476TH AVE
NE 477TH AVE
NE 478TH AVE
NE 479TH AVE
NE 480TH AVE
NE 481ST AVE
NE 482ND AVE
NE 483RD AVE
NE 484TH AVE
NE 485TH AVE
NE 486TH AVE
NE 487TH AVE
NE 488TH AVE
NE 489TH AVE
NE 490TH AVE
NE 491ST AVE
NE 492ND AVE
NE 493RD AVE
NE 494TH AVE
NE 495TH AVE
NE 496TH AVE
NE 497TH AVE
NE 498TH AVE
NE 499TH AVE
NE 500TH AVE
NE 501ST AVE
NE 502ND AVE
NE 503RD AVE
NE 504TH AVE
NE 505TH AVE
NE 506TH AVE
NE 507TH AVE
NE 508TH AVE
NE 509TH AVE
NE 510TH AVE
NE 511TH AVE
NE 512TH AVE
NE 513TH AVE
NE 514TH AVE
NE 515TH AVE
NE 516TH AVE
NE 517TH AVE
NE 518TH AVE
NE 519TH AVE
NE 520TH AVE
NE 521ST AVE
NE 522ND AVE
NE 523RD AVE
NE 524TH AVE
NE 525TH AVE
NE 526TH AVE
NE 527TH AVE
NE 528TH AVE
NE 529TH AVE
NE 530TH AVE
NE 531ST AVE
NE 532ND AVE
NE 533RD AVE
NE 534TH AVE
NE 535TH AVE
NE 536TH AVE
NE 537TH AVE
NE 538TH AVE
NE 539TH AVE
NE 540TH AVE
NE 541ST AVE
NE 542ND AVE
NE 543RD AVE
NE 544TH AVE
NE 545TH AVE
NE 546TH AVE
NE 547TH AVE
NE 548TH AVE
NE 549TH AVE
NE 550TH AVE
NE 551ST AVE
NE 552ND AVE
NE 553RD AVE
NE 554TH AVE
NE 555TH AVE
NE 556TH AVE
NE 557TH AVE
NE 558TH AVE
NE 559TH AVE
NE 560TH AVE
NE 561ST AVE
NE 562ND AVE
NE 563RD AVE
NE 564TH AVE
NE 565TH AVE
NE 566TH AVE
NE 567TH AVE
NE 568TH AVE
NE 569TH AVE
NE 570TH AVE
NE 571ST AVE
NE 572ND AVE
NE 573RD AVE
NE 574TH AVE
NE 575TH AVE
NE 576TH AVE
NE 577TH AVE
NE 578TH AVE
NE 579TH AVE
NE 580TH AVE
NE 581ST AVE
NE 582ND AVE
NE 583RD AVE
NE 584TH AVE
NE 585TH AVE
NE 586TH AVE
NE 587TH AVE
NE 588TH AVE
NE 589TH AVE
NE 590TH AVE
NE 591ST AVE
NE 592ND AVE
NE 593RD AVE
NE 594TH AVE
NE 595TH AVE
NE 596TH AVE
NE 597TH AVE
NE 598TH AVE
NE 599TH AVE
NE 600TH AVE
NE 601ST AVE
NE 602ND AVE
NE 603RD AVE
NE 604TH AVE
NE 605TH AVE
NE 606TH AVE
NE 607TH AVE
NE 608TH AVE
NE 609TH AVE
NE 610TH AVE
NE 611TH AVE
NE 612TH AVE
NE 613TH AVE
NE 614TH AVE
NE 615TH AVE
NE 616TH AVE
NE 617TH AVE
NE 618TH AVE
NE 619TH AVE
NE 620TH AVE
NE 621ST AVE
NE 622ND AVE
NE 623RD AVE
NE 624TH AVE
NE 625TH AVE
NE 626TH AVE
NE 627TH AVE
NE 628TH AVE
NE 629TH AVE
NE 630TH AVE
NE 631ST AVE
NE 632ND AVE
NE 633RD AVE
NE 634TH AVE
NE 635TH AVE
NE 636TH AVE
NE 637TH AVE
NE 638TH AVE
NE 639TH AVE
NE 640TH AVE
NE 641ST AVE
NE 642ND AVE
NE 643RD AVE
NE 644TH AVE
NE 645TH AVE
NE 646TH AVE
NE 647TH AVE
NE 648TH AVE
NE 649TH AVE
NE 650TH AVE
NE 651ST AVE
NE 652ND AVE
NE 653RD AVE
NE 654TH AVE
NE 655TH AVE
NE 656TH AVE
NE 657TH AVE
NE 658TH AVE
NE 659TH AVE
NE 660TH AVE
NE 661ST AVE
NE 662ND AVE
NE 663RD AVE
NE 664TH AVE
NE 665TH AVE
NE 666TH AVE
NE 667TH AVE
NE 668TH AVE
NE 669TH AVE
NE 670TH AVE
NE 671ST AVE
NE 672ND AVE
NE 673RD AVE
NE 674TH AVE
NE 675TH AVE
NE 676TH AVE
NE 677TH AVE
NE 678TH AVE
NE 679TH AVE
NE 680TH AVE
NE 681ST AVE
NE 682ND AVE
NE 683RD AVE
NE 684TH AVE
NE 685TH AVE
NE 686TH AVE
NE 687TH AVE
NE 688TH AVE
NE 689TH AVE
NE 690TH AVE
NE 691ST AVE
NE 692ND AVE
NE 693RD AVE
NE 694TH AVE
NE 695TH AVE
NE 696TH AVE
NE 697TH AVE
NE 698TH AVE
NE 699TH AVE
NE 700TH AVE
NE 701ST AVE
NE 702ND AVE
NE 703RD AVE
NE 704TH AVE
NE 705TH AVE
NE 706TH AVE
NE 707TH AVE
NE 708TH AVE
NE 709TH AVE
NE 710TH AVE
NE 711TH AVE
NE 712TH AVE
NE 713TH AVE
NE 714TH AVE
NE 715TH AVE
NE 716TH AVE
NE 717TH AVE
NE 718TH AVE
NE 719TH AVE
NE 720TH AVE
NE 721ST AVE
NE 722ND AVE
NE 723RD AVE
NE 724TH AVE
NE 725TH AVE
NE 726TH AVE
NE 727TH AVE
NE 728TH AVE
NE 729TH AVE
NE 730TH AVE
NE 731ST AVE
NE 732ND AVE
NE 733RD AVE
NE 734TH AVE
NE 735TH AVE
NE 736TH AVE
NE 737TH AVE
NE 738TH AVE
NE 739TH AVE
NE 740TH AVE
NE 741ST AVE
NE 742ND AVE
NE 743RD AVE
NE 744TH AVE
NE 745TH AVE
NE 746TH AVE
NE 747TH AVE
NE 748TH AVE
NE 749TH AVE
NE 750TH AVE
NE 751ST AVE
NE 752ND AVE
NE 753RD AVE
NE 754TH AVE
NE 755TH AVE
NE 756TH AVE
NE 757TH AVE
NE 758TH AVE
NE 759TH AVE
NE 760TH AVE
NE 761ST AVE
NE 762ND AVE
NE 763RD AVE
NE 764TH AVE
NE 765TH AVE
NE 766TH AVE
NE 767TH AVE
NE 768TH AVE
NE 769TH AVE
NE 770TH AVE
NE 771ST AVE
NE 772ND AVE
NE 773RD AVE
NE 774TH AVE
NE 775TH AVE
NE 776TH AVE
NE 777TH AVE
NE 778TH AVE
NE 779TH AVE
NE 780TH AVE
NE 781ST AVE
NE 782ND AVE
NE 783RD AVE
NE 784TH AVE
NE 785TH AVE
NE 786TH AVE
NE 787TH AVE
NE 788TH AVE
NE 789TH AVE
NE 790TH AVE
NE 791ST AVE
NE 792ND AVE
NE 793RD AVE
NE 794TH AVE
NE 795TH AVE
NE 796TH AVE
NE 797TH AVE
NE 798TH AVE
NE 799TH AVE
NE 800TH AVE
NE 801ST AVE
NE 802ND AVE
NE 803RD AVE
NE 804TH AVE
NE 805TH AVE
NE 806TH AVE
NE 807TH AVE
NE 808TH AVE
NE 809TH AVE
NE 810TH AVE
NE 811TH AVE
NE 812TH AVE
NE 813TH AVE
NE 814TH AVE
NE 815TH AVE
NE 816TH AVE
NE 817TH AVE
NE 818TH AVE
NE 819TH AVE
NE 820TH AVE
NE 821ST AVE
NE 822ND AVE
NE 823RD AVE
NE 824TH AVE
NE 825TH AVE
NE 826TH AVE
NE 827TH AVE
NE 828TH AVE
NE 829TH AVE
NE 830TH AVE
NE 831ST AVE
NE 832ND AVE
NE 833RD AVE
NE 834TH AVE
NE 835TH AVE
NE 836TH AVE
NE 837TH AVE
NE 838TH AVE
NE 839TH AVE
NE 840TH AVE
NE 841ST AVE
NE 842ND AVE
NE 843RD AVE
NE 844TH AVE
NE 845TH AVE
NE 846TH AVE
NE 847TH AVE
NE 848TH AVE
NE 849TH AVE
NE 850TH AVE
NE 851ST AVE
NE 852ND AVE
NE 853RD AVE
NE 854TH AVE
NE 855TH AVE
NE 856TH AVE
NE 857TH AVE
NE 858TH AVE
NE 859TH AVE
NE 860TH AVE
NE 861ST AVE
NE 862ND AVE
NE 863RD AVE
NE 864TH AVE
NE 865TH AVE
NE 866TH AVE
NE 867TH AVE
NE 868TH AVE
NE 869TH AVE
NE 870TH AVE
NE 871ST AVE
NE 872ND AVE
NE 873RD AVE
NE 874TH AVE
NE 875TH AVE
NE 876TH AVE
NE 877TH AVE
NE 878TH AVE
NE 879TH AVE
NE 880TH AVE
NE 881ST AVE
NE 882ND AVE
NE 883RD AVE
NE 884TH AVE
NE 885TH AVE
NE 886TH AVE
NE 887TH AVE
NE 888TH AVE
NE 889TH AVE
NE 890TH AVE
NE 891ST AVE
NE 892ND AVE
NE 893RD AVE
NE 894TH AVE
NE 895TH AVE
NE 896TH AVE
NE 897TH AVE
NE 898TH AVE
NE 899TH AVE
NE 900TH AVE
NE 901ST AVE
NE 902ND AVE
NE 903RD AVE
NE 904TH AVE
NE 905TH AVE
NE 906TH AVE
NE 907TH AVE
NE 908TH AVE
NE 909TH AVE
NE 910TH AVE
NE 911TH AVE
NE 912TH AVE
NE 913TH AVE
NE 914TH AVE
NE 915TH AVE
NE 916TH AVE
NE 917TH AVE
NE 918TH AVE
NE 919TH AVE
NE 920TH AVE
NE 921ST AVE
NE 922ND AVE
NE 923RD AVE
NE 924TH AVE
NE 925TH AVE
NE 926TH AVE
NE 927TH AVE
NE 928TH AVE
NE 929TH AVE
NE 930TH AVE
NE 931ST AVE
NE 932ND AVE
NE 933RD AVE
NE 934TH AVE
NE 935TH AVE
NE 936TH AVE
NE 937TH AVE
NE 938TH AVE
NE 939TH AVE
NE 940TH AVE
NE 941ST AVE
NE 942ND AVE
NE 943RD AVE
NE 944TH AVE
NE 945TH AVE
NE 946TH AVE
NE 947TH AVE
NE 948TH AVE
NE 949TH AVE
NE 950TH AVE
NE 951ST AVE
NE 952ND AVE
NE 953RD AVE
NE 954TH AVE
NE 955TH AVE
NE 956TH AVE
NE 957TH AVE
NE 958TH AVE
NE 959TH AVE
NE 960TH AVE
NE 961ST AVE
NE 962ND AVE
NE 963RD AVE
NE 964TH AVE
NE 965TH AVE
NE 966TH AVE
NE 967TH AVE
NE 968TH AVE
NE 969TH AVE
NE 970TH AVE
NE 971ST AVE
NE 972ND AVE
NE 973RD AVE
NE 974TH AVE
NE 975TH AVE
NE 976TH AVE
NE 977TH AVE
NE 978TH AVE
NE 979TH AVE
NE 980TH AVE
NE 981ST AVE
NE 982ND AVE
NE 983RD AVE
NE 984TH AVE
NE 985TH AVE
NE 986TH AVE
NE 987TH AVE
NE 988TH AVE
NE 989TH AVE
NE 990TH AVE
NE 991ST AVE
NE 992ND AVE
NE 993RD AVE
NE 994TH AVE
NE 995TH AVE
NE 996TH AVE
NE 997TH AVE
NE 998TH AVE
NE 999TH AVE
NE 1000TH AVE
NE 1001ST AVE
NE 1002ND AVE
NE 1003RD AVE
NE 1004TH AVE
NE 1005TH AVE
NE 1006TH AVE
NE 1007TH AVE
NE 1008TH AVE
NE 1009TH AVE
NE 1010TH AVE
NE 1011TH AVE
NE 1012TH AVE
NE 1013TH AVE
NE 1014TH AVE
NE 1015TH AVE
NE 1016TH AVE
NE 1017TH AVE
NE 1018TH AVE
NE 1019TH AVE
NE 1020TH AVE
NE 1021ST AVE
NE 1022ND AVE
NE 1023RD AVE
NE 1024TH AVE
NE 1025TH AVE
NE 1026TH AVE
NE 1027TH AVE
NE 1028TH AVE
NE 1029TH AVE
NE 1030TH AVE
NE 1031ST AVE
NE 1032ND AVE
NE 1033RD AVE
NE 1034TH AVE
NE 1035TH AVE
NE 1036TH AVE
NE 1037TH AVE
NE 1038TH AVE
NE 1039TH AVE
NE 1040TH AVE
NE 1041ST AVE
NE 1042ND AVE
NE 1043RD AVE
NE 1044TH AVE
NE 1045TH AVE
NE 1046TH AVE
NE 1047TH AVE
NE 1048TH AVE
NE 1049TH AVE
NE 1050TH AVE
NE 1051ST AVE
NE 1052ND AVE
NE 1053RD AVE
NE 1054TH AVE
NE 1055TH AVE
NE 1056TH AVE
NE 1057TH AVE
NE 1058TH AVE
NE 1059TH AVE
NE 1060TH AVE
NE 1061ST AVE
NE 1062ND AVE
NE 1063RD AVE
NE 1064TH AVE
NE 1065TH AVE
NE 1066TH AVE
NE 1067TH AVE
NE 1068TH AVE
NE 1069TH AVE
NE 1070TH AVE
NE 1071ST AVE
NE 1072ND AVE
NE 1073RD AVE
NE 1074TH AVE
NE 1075TH AVE
NE 1076TH AVE
NE 1077TH AVE
NE 1078TH AVE
NE 1079TH AVE
NE 1080TH AVE
NE 1081ST AVE
NE 1082ND AVE
NE 1083RD AVE
NE 1084TH AVE
NE 1085TH AVE
NE 1086TH AVE
NE 1087TH AVE
NE 1088TH AVE
NE 1089TH AVE
NE 1090TH AVE
NE 1091ST AVE
NE 1092ND AVE
NE 1093RD AVE
NE 1094TH AVE
NE 1095TH AVE
NE 1096TH AVE
NE 1097TH AVE
NE 1098TH AVE
NE 1099TH AVE
NE 1100TH AVE
NE 1101ST AVE
NE 1102ND AVE
NE 1103RD AVE
NE 1104TH AVE
NE 1105TH AVE
NE 1106TH AVE
NE 1107TH AVE
NE 1108TH AVE
NE 1109TH AVE
NE 1110TH AVE
NE 1111TH AVE
NE 1112TH AVE
NE 1113TH AVE
NE 1114TH AVE
NE 1115TH AVE
NE 1116TH AVE
NE 1117TH AVE
NE 1118TH AVE
NE 1119TH AVE
NE 1120TH AVE
NE 1121ST AVE
NE 1122ND AVE
NE 1123RD AVE
NE 1124TH AVE
NE 1125TH AVE
NE 1126TH AVE
NE 1127TH AVE
NE 1128TH AVE
NE 1129TH AVE
NE 1130TH AVE
NE 1131ST AVE
NE 1132ND AVE
NE 1133RD AVE
NE 1134TH AVE
NE 1135TH AVE
NE 1136TH AVE
NE 1137TH AVE
NE 1138TH AVE
NE 1139TH AVE
NE 1140TH AVE
NE 1141ST AVE
NE 1142ND AVE
NE 1143RD AVE
NE 1144TH AVE
NE 1145TH AVE
NE 1146TH AVE
NE 1147TH AVE
NE 1148TH AVE
NE 1149TH AVE
NE 1150TH AVE
NE 1151ST AVE
NE 1152ND AVE
NE 1153RD AVE
NE 1154TH AVE
NE 1155TH AVE
NE 1156TH AVE
NE 1157TH AVE
NE 1158TH AVE
NE 1159TH AVE
NE 1160TH AVE
NE 1161ST AVE
NE 1162ND AVE
NE 1163RD AVE
NE 1164TH AVE
NE 1165TH AVE
NE 1166TH AVE
NE 1167TH AVE
NE 1168TH AVE
NE 1169TH AVE
NE 1170TH AVE
NE 1171ST AVE
NE 1172ND AVE
NE 1173RD AVE
NE 1174TH AVE
NE 1175TH AVE
NE 1176TH AVE
NE 1177TH AVE
NE 1178TH AVE
NE 1179TH AVE
NE 1180TH AVE
NE 1181ST AVE
NE 1182ND AVE
NE 1183RD AVE
NE 1184TH AVE
NE 1185TH AVE
NE 1186TH AVE
NE 1187TH AVE
NE 1188TH AVE
NE 1189TH AVE
NE 1190TH AVE
NE 1191ST AVE
NE 1192ND AVE
NE 1193RD AVE
NE 1194TH AVE
NE 1195TH AVE
NE 1196TH AVE
NE 1197TH AVE
NE 1198TH AVE
NE 1199TH AVE
NE 1200TH AVE
NE 1201ST AVE
NE 1202ND AVE
NE 1203RD AVE
NE 1204TH AVE
NE 1205TH AVE
NE 1206TH AVE
NE 1207TH AVE
NE 1208TH AVE
NE 1209TH AVE
NE 1210TH AVE
NE 1211TH AVE
NE 1212TH AVE
NE 1213TH AVE
NE 1214TH AVE
NE 1215TH AVE
NE 1216TH AVE
NE 1217TH AVE
NE 1218TH AVE
NE 1219TH AVE
NE 1220TH AVE
NE 1221ST AVE
NE 1222ND AVE
NE 1223RD AVE
NE 1224TH AVE
NE 1225TH AVE
NE 1226TH AVE
NE 1227TH AVE
NE 1228TH AVE
NE 1229TH AVE
NE 1230TH AVE
NE 1231ST AVE
NE 1232ND AVE
NE 1233RD AVE
NE 1234TH AVE
NE 1235TH AVE
NE 1236TH AVE
NE 1237TH AVE
NE 1238TH AVE
NE 1239TH AVE
NE 1240TH AVE
NE 1241ST AVE
NE 1242ND AVE
NE 1243RD AVE
NE 1244TH AVE
NE 1245TH AVE
NE 1246TH AVE
NE 1247TH AVE
NE 1248TH AVE
NE 1249TH AVE
NE 1250TH AVE
NE 1251ST AVE
NE 1252ND AVE
NE 1253RD AVE
NE 1254TH AVE
NE 1255TH AVE
NE 1256TH AVE
NE 1257TH AVE
NE 1258TH AVE
NE 1259TH AVE
NE 1260TH AVE
NE 1261ST AVE
NE 1262ND AVE
NE 1263RD AVE
NE 1264TH AVE
NE 1265TH AVE
NE 1266TH AVE
NE 1267TH AVE
NE 1268TH AVE
NE 1269TH AVE
NE 1270TH AVE
NE 1271ST AVE
NE 1272ND AVE
NE 1273RD AVE
NE 1274TH AVE
NE 1275TH AVE
NE 1276TH AVE
NE 1277TH AVE
NE 1278TH AVE
NE 1279TH AVE
NE 1280TH AVE
NE 1281ST AVE
NE 1282ND AVE
NE 1283RD AVE
NE 1284TH AVE
NE 1285TH AVE
NE 1286TH AVE
NE 1287TH AVE
NE 1288TH AVE
NE 1289TH AVE
NE 1290TH AVE
NE 1291ST AVE
NE 1292ND AVE
NE 1293RD AVE
NE 1294TH AVE
NE 1295TH AVE
NE 1296TH AVE
NE 1297TH AVE
NE 1298TH AVE
NE 1299TH AVE
NE 1300TH AVE
NE 1301ST AVE
NE 1302ND AVE
NE 1303RD AVE
NE 1304TH AVE
NE 1305TH AVE
NE 1306TH AVE
NE 1307TH AVE
NE 1308TH AVE
NE 1309TH AVE
NE 1310TH AVE
NE 1311TH AVE
NE 1312TH AVE
NE 1313TH AVE
NE 1314TH AVE
NE 1315TH AVE
NE 1316TH AVE
NE 1317TH AVE
NE 1318TH AVE
NE 1319TH AVE
NE 1320TH AVE
NE 1321ST AVE
NE 1322ND AVE
NE 1323RD AVE
NE 1324TH AVE
NE 1325TH AVE
NE 1326TH AVE
NE 1327TH AVE
NE 1328TH AVE
NE 1329TH AVE
NE 1330TH AVE
NE 1331ST AVE
NE 1332ND AVE
NE 1333RD AVE
NE 1334TH AVE
NE 1335TH AVE
NE 1336TH AVE
NE 1337TH AVE
NE 1338TH AVE
NE 1339TH AVE
NE 1340TH AVE
NE 1341ST AVE
NE 1342ND AVE
NE 1343RD AVE
NE 1344TH AVE
NE 1345TH AVE
NE 1346TH AVE
NE 1347TH AVE
NE 1348TH AVE
NE 1349TH AVE
NE 1350TH AVE
NE 1351ST AVE
NE 1352ND AVE
NE 1353RD AVE
NE 1354TH AVE
NE 1355TH AVE
NE 1356TH AVE
NE 1357TH AVE
NE 1358TH AVE
NE 1359TH AVE
NE 1360TH AVE
NE 1361ST AVE
NE 1362ND AVE
NE 1363RD AVE
NE 1364TH AVE
NE 1365TH AVE
NE 1366TH AVE
NE 1367TH AVE
NE 1368TH AVE
NE 1369TH AVE
NE 1370TH AVE
NE 1371ST AVE
NE 1372ND AVE
NE 1373RD AVE
NE 1374TH AVE
NE 1375TH AVE
NE 1376TH AVE
NE 1377TH AVE
NE 1378TH AVE
NE 1379TH AVE
NE 1380TH AVE
NE 1381ST AVE
NE 1382ND AVE
NE 1383RD AVE
NE 1384TH AVE
NE 1385TH AVE
NE 1386TH AVE
NE 1387TH AVE
NE 1388TH AVE
NE 1389TH AVE
NE 1390TH AVE
NE 1391ST AVE
NE 1392ND AVE
NE 1393RD AVE
NE 1394TH AVE
NE 1395TH AVE
NE 1396TH AVE
NE 1397TH AVE
NE 1398TH AVE
NE 1399TH AVE
NE 1400TH AVE
NE 1401ST AVE
NE 1402ND AVE
NE 1403RD AVE
NE 1404TH AVE
NE 1405TH AVE
NE 1406TH AVE
NE 1407TH AVE
NE 1408TH AVE
NE 1409TH AVE
NE 1410TH AVE
NE 1411TH AVE
NE 1412TH AVE
NE 1413TH AVE
NE 1414TH AVE
NE 1415TH AVE
NE 1416TH AVE
NE 1417TH AVE
NE 1418TH AVE
NE 1419TH AVE
NE 1420TH AVE
NE 1421ST AVE
NE 1422ND AVE
NE 1423RD AVE
NE 1424TH AVE
NE 1425TH AVE
NE 1426TH AVE
NE 1427TH AVE
NE 1428TH AVE
NE 1429TH AVE
NE 1430TH AVE
NE 1431ST AVE
NE 1432ND AVE
NE 1433RD AVE
NE 1434TH AVE
NE 1435TH AVE
NE 1436TH AVE
NE 1437TH AVE
NE 1438TH AVE
NE 1439TH AVE
NE 1440TH AVE
NE 1441ST AVE
NE 1442ND AVE
NE 1443RD AVE
NE 1444TH AVE
NE 1445TH AVE
NE 1446TH AVE
NE 1447TH AVE
NE 1448TH AVE
NE 1449TH AVE
NE 1450TH AVE
NE 1451ST AVE
NE 1452ND AVE
NE 1453RD AVE
NE 1454TH AVE
NE 1455TH AVE
NE 1456TH AVE
NE 1457TH AVE
NE 1458TH AVE
NE 1459TH AVE
NE 1460TH AVE
NE 1461ST AVE
NE 1462ND AVE
NE 1463RD AVE
NE 1464TH AVE
NE 1465TH AVE
NE 1466TH AVE
NE 1467TH AVE
NE 1468TH AVE
NE 1469TH AVE
NE 1470TH AVE
NE 1471ST AVE
NE 1472ND AVE
NE 1473RD AVE
NE 1474TH AVE
NE 1475TH AVE
NE 1476TH AVE
NE 1477TH AVE
NE 1478TH AVE
NE 1479TH AVE
NE 1480TH AVE
NE 1481ST AVE
NE 1482ND AVE
NE 1483RD AVE
NE 1484TH AVE
NE 1485TH AVE
NE 1486TH AVE
NE 1487TH AVE
NE 1488TH AVE
NE 1489TH AVE
NE 1490TH AVE
NE 1491ST AVE
NE 1492ND AVE
NE 1493RD AVE
NE 1494TH AVE
NE 1495TH AVE
NE 1496TH AVE
NE 1497TH AVE
NE 1498TH AVE
NE 1499TH AVE
NE 1500TH AVE
NE 1501ST AVE
NE 1502ND AVE
NE 1503RD AVE
NE 1504TH AVE
NE 1505TH AVE
NE 1506TH AVE
NE 1507TH AVE
NE 1508TH AVE
NE 1509TH AVE
NE 1510TH AVE
NE 1511TH AVE
NE 1512TH AVE
NE 1513TH AVE
NE 1514TH AVE
NE 1515TH AVE
NE 1516TH AVE
NE 1517TH AVE
NE 1518TH AVE
NE 1519TH AVE
NE 1520TH AVE
NE 1521ST AVE
NE 1522ND AVE
NE 1523RD AVE
NE 1524TH AVE
NE 1525TH AVE
NE 1526TH AVE
NE 1527TH AVE
NE 1528TH AVE
NE 1529TH AVE
NE 1530TH AVE
NE 1531ST AVE
NE 1532ND AVE
NE 1533RD AVE
NE 1534TH AVE
NE 1535TH AVE
NE 1536TH AVE
NE 1537TH AVE
NE 1538TH AVE
NE 1539TH AVE
NE 1540TH AVE

PARCEL NO.	ACRES
17752	1.939
17752-1	1.984
17752-1-1	2.666
17752-1-1	2.002
17752-3	1.000
17752-2	1.000
17752-4	6.200
17752-5	1.033

ACQUISITIONS
PARCEL NO.
17752 AIP PROJECT NO. 3-12-0028-01
L A.I.P. NUMBERS TO BE DETERMINED FOR PARCELS:
17752-1
17752-1-1
17752-2
17752-3
17752-4
17752-5
17752-1

MAGNETIC DECLINATION 5°35'W
0°5'W /YEAR (JUN. 2013)

0 500 1,000 1,500
SCALE IN FEET



ACQUISITIONS

PARCEL NUMBER	DATE OF ACQUISITION	FEDERAL AID PROJECT #	TYPE OF OWNERSHIP	PARCEL ACREAGE
A1	10/16/1948	-----	PRIVATE	245+/-
A2	10/16/1948	-----	PRIVATE	600+/-
A3	10/1948	-----	PRIVATE	105+/-
B1	-----	9-08-021-02	PRIVATE	49.07
B2	-----	9-08-021-02	PRIVATE	82.22
B3	-----	9-08-021-02	PRIVATE	9.9
C	-----	9-08-021-04	PRIVATE	66.2
C1	-----	-----	PRIVATE	114.64
D	-----	8-12-0028-03	PRIVATE	5
E1	-----	8-12-0028-03	PRIVATE	5.4
E2	-----	8-12-0028-03	PRIVATE	85+/-
F1	-----	05	PRIVATE	3.087
3-F	-----	05	PRIVATE	5+
G	6/21/1977	06	EASEMENT	13+
H	5/10/1977		EASEMENT	4+
I	10/01/1987	10.32 AC. 6-12-0028-10 20.6 AC. 3-12-0028-01 17.12 AC. 3-12-0028-06	MUNICIPAL	48.04
J	-----	3-12-0028-01	PRIVATE	1.94
K	FY 1991/1992	FDOT GRANT WPI 2820773	PRIVATE	269.03
	2/27/1990	-----	-----	-----
L	1994	3-12-0028-16	PRIVATE	15.5+
M	-----	-----	-----	-----
8A	5/16/1996	-----	PRIVATE	0.95+/-

PARCELS RELEASED FROM WAA INSTRUMENT OCT. 15, 1948

PARCEL NUMBER	DATE OF ACQUISITION	ACQUIRING ENTITY	TYPE OF OWNERSHIP	PARCEL ACREAGE
1	6/1/1954	SPERRY RAND CORP.	SOLD	43.52
2	10/23/1957	PENINSULAR CHEMICAL RESEARCH, INC.	SOLD	5+
3A	8/2/1958	SPERRY RAND CORP.	SOLD	69.58
3B	-----	-----	-----	11.46
4	11/20/1959	PENINSULAR CHEMICAL RESEARCH, INC. AND IAC. SPERRY RAND CORP.	SOLD	5+
5	11/24/1967	PENINSULAR CHEMICAL RESEARCH, INC.	SOLD	0.75
6	4/30/1970	FABCO-AIR INC.	SOLD	5.98
7	8/24/1970	MARIS DISTRIBUTING COMPANY	SOLD	6.09
8	6/7/1971	HUNTER & ADAMS	SOLD	3.34
8A	SEE "8"	-----	SEE "8"	0.95
9A	4/14/1995	CITY OF GAINESVILLE	RELEASE	-----
9B	4/14/1995	CITY OF GAINESVILLE	ENCUMBRANCE	27+/-
10	5/5/1998	KENNETH O. LESTER CO.	SOLD	2.01
11	-----	RYDER SYSTEMS INC.	-----	-----
12	-----	CITY OF GAINESVILLE	RELEASE	-----

FUTURE ACQUISITIONS

PARCEL NUMBER	PARCEL OWNER	PARCEL ACREAGE
N	STATE OF FLORIDA	120.72
O	STATE OF FLORIDA	5.28
P	ALACHUA COUNTY	5.72
Q	CITY OF GAINESVILLE, FDOT & EAST GAINESVILLE DEVELOPMENT PARTNERS LLC	53.5
R	RYDER TRUCK RENTAL, INC	4.72
S	RAYONIER FOREST RESOURCES	20.29

LEGEND

DESCRIPTION	EXISTING	FUTURE
PROPERTY LINE		
AIRPORT PROPERTY		
RUNWAY PROTECTION ZONE		
PAVED SURFACE		

NOT FOR CONSTRUCTION

RS&H
IMPROVING YOUR WORLD

Reynolds, Smith and Hills, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2000 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
EB0005620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 00-00-00
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2013 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

AIRPORT PROPERTY MAP

SHEET NUMBER

SHEET 17 OF 17

DRAFT

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_17_PROPERTY.dwg Plotted on: 12/31/2013 12:20 PM Plotted by: Morse, Ryan

ATTACHMENT B
ARFF SITING LOCATION STUDY

ARFF Siting Location Study

Prepared for

GAINESVILLE REGIONAL AIRPORT

August 2013

Version 2.0

RS&H
IMPROVING YOUR WORLD

Contents

CHAPTER 1 Executive Summary 1-1
CHAPTER 2 AirCRaft rescue and fire fighting (ARFF) Siting Study 2-1
2.1 Overview 2-1
2.2 Response Time AnALysis 2-2
2.3 Condition Assessment of the current structure 2-3
2.3.1 Structure 2-3
2.3.2 Roofing 2-3
2.3.3 Windows 2-3
2.3.4 Flooring 2-4
2.3.5 Ceilings 2-4
2.3.6 Sightlines 2-4
2.3.7 Truck Bays 2-4
2.3.8 Mechanical, Electrical and Plumbing (MEP) 2-4
2.3.9 Qualitative Evaluation of the Existing ARFF Structure 2-6
2.4 Site Evaluation 2-6
2.4.1 FAA ARFF Operational Criteria 2-6
2.4.2 Site Specific Evaluation Criteria 2-7
2.4.3 Site A 2-7
2.4.4 Site B 2-8
2.4.5 Site C 2-9
2.4.6 Site D 2-9
2.4.7 Evaluation 2-10
2.4.8 Recommendation 2-11
Appendix A Average Turn Out Time 2-1

List of Tables

Table 2-1 ARFF RESPONSE TIMES SITE A 2-2
Table 2-2 ARFF RESPONSE TIMES SITE B 2-2
Table 2-3 ARFF RESPONSE TIME SITE C 2-2
Table 2-4 ARFF RESPONSE TIME SITE D 2-3

CHAPTER 1
EXECUTIVE SUMMARY

The purpose of this technical memo is a site evaluation analysis to identify the location for the future Aircraft Rescue and Fire Fighting (ARFF) facility. According to FAA guidance 14 CFR Part 139.319, the parameter for consideration of an ARFF location is that the ARFF vehicle must reach the midpoint of the farthest air carrier runway from its assigned post within 3 minutes from the time of the alarm. Therefore, this regulation becomes the most important factor when determining the areas where an ARFF facility can be placed.

For this analysis, lengths of 7,504 feet and 8,000 feet for Runway 11-29 and 6,500 feet and Runway 7-25 were considered in this analysis. Four sites have been proposed for the future ARFF facility. The current ARFF facility was considered as one of the proposed future sites. The current facility was evaluated to identify whether the current structure, if renovated, would provide a cost effective solution.

Response time for each runway length scenario, the proposed sites, along with other factors was used to evaluate each proposed site. Other factors used in this evaluation were site preparation, environmental considerations, airport/community use and land use. For the site evaluation, each factor was considered, but response time was weighted heavier than the other factors because of the importance of the 3:00 minute response time.

CHAPTER 2
AIRCRAFT RESCUE AND FIRE FIGHTING (ARFF) SITING STUDY

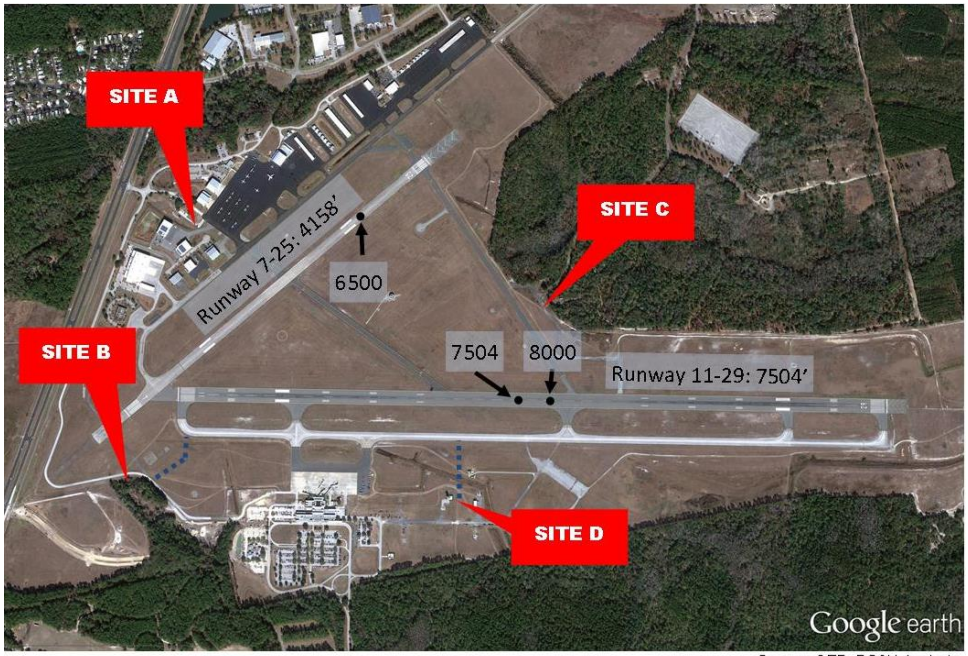
2.1 OVERVIEW

For planning purposes, lengths of 7,504 feet (current) and 8,000 feet (planned) for Runway 11-29 and 6,500 feet (planned) for Runway 7-25 were considered in this analysis; the rationale for runway length options is described in Section 3.5 Preliminary Runway Length Analysis.

According to the FAA guidance, the 3:00 minutes (3 minutes and no seconds) response time is only required for air carrier runways. Currently Runway 7-25 is not an air carrier runway. It only would be considered an air carrier runway if the ultimate Master Plan extension to 6,500 feet or greater is constructed. Therefore, the shorter runway lengths for Runway 7-25 were not included in this analysis.

Four proposed ARFF facility locations were determined based on future planning, available land, and proximity to the airfield depicted in Exhibit 2-1. Site A is the location of the current ARFF facility. Site B is located in the southwest of the airfield approximately 700 feet south of Runway 7 and 1,000 feet southwest of Runway 11. Site C is located off Taxiway Bravo, approximately 1,750 feet southeast of Runway 25. Site D is located immediately east of the current Air Traffic Control Tower. Figure 4-1 depicts the midpoints for the runway lengths included in this analysis.

Exhibit 2-1
Proposed ARFF Locations



Source: RS&H Analysis

2.2 RESPONSE TIME ANALYSIS

To ensure the future ARFF facility location would be compliant with this FAA regulation, the response time for each proposed ARFF facility was calculated for each runway length scenario, as shown in Table 2-1, Table 2-2, Table 2-3, and Table 2-4.

Response times were calculated using a spreadsheet model that estimated times for each segment of the response trip, from the time the bell is sounded until the vehicle arrives at the runway midpoint and begins applying agent. For each trip segments, there are assumptions regarding vehicle acceleration speeds, deceleration speeds and turn speeds.

The primary aspect of response time is mobilization or turn-around time, i.e., the time it takes from hearing the initial response bell until the vehicle leaves the ARFF structure. Because each ARFF crew operates differently, the turn-around time is considered the one aspect of the total response time calculation that best calibrates the model. For this key parameter, the Consultant used the average of a series of response events over a period of five years provided by Fire Chief Rusty Barnett and Artie Chestnut of the City of Gainesville. For all practical purposes, the average Gainesville ARFF mobilization response time is the same as industry-wide estimated averages. Appendix A provides the response time calculations for both runways and the assumptions provided by the City of Gainesville.

Table 2-1
ARFF RESPONSE TIMES SITE A

ARFF Scenarios	Length Runway 11-29 (feet)	Response Time (min)	Length Runway 7-25 (feet)	Response Time (min)
1	7,504	2:15	6,500	1:51
3	8,000	2:18	6,500	1:51

Table 2-2
ARFF RESPONSE TIMES SITE B

ARFF Scenarios	Length Runway 11-29 (feet)	Response Time (min)	Length Runway 7-25 (feet)	Response Time (min)
1	7,504	2:29	6,500	2:30
2	8,000	2:32	6,500	2:30

Table 2-3
ARFF RESPONSE TIME SITE C

ARFF Scenarios	Length Runway 11-29 (feet)	Response Time (min)	Length Runway 7-25 (feet)	Response Time (min)
1	7,504	1:59	6,500	2:16
2	8,000	1:54	6,500	2:16

Table 2-4
ARFF RESPONSE TIME SITE D

ARFF Scenarios	Length Runway 11-29 (feet)	Response Time (min)	Length Runway 7-25 (feet)	Response Time (min)
1	7,504	2.00	6,500	2.26
2	8,000	1.52	6,500	2.32

2.3 CONDITION ASSESSMENT OF THE CURRENT STRUCTURE

Another consideration of the GNV ARFF siting study is consideration of the existing ARFF location as the future location. The existing structure was built in 1979. This section of Chapter 3 will present the findings of a building conditions study to identify whether the current structure, if renovated, would provide a cost effective solution.

On February 7, 2013, the Consultant Team visited the existing ARFF facility located within the general aviation area to the north of Runway 7-25 and performed a non-destructive evaluation of the facility. The single story building is approximately 6,000 square feet in area and consists of two drive through garage bays, an outdoor patio, an activity/dining room, kitchen, bedroom, offices, corridor, storage room, dorm rooms, locker/weight room, restrooms with showers and mechanical room. The Team's assessment of the facility is below.

2.3.1 Structure

The building's primary structural system is reinforced 8-inch concrete masonry units (CMU) with vertical scores at 8-inch bearing on concrete spread footing. The walls appear to be in good to fair condition structurally. The CMU cells are filled with vermiculite wall insulation that is a concern for contamination of asbestos.[1]

2.3.2 Roofing

The roofing framing system is metal decking on steel bar joist bearing on the CMU walls. The metal decking is showing some signs of deterioration. The steel bar joists are in fair to good condition. The roofing system looks to be original to the building. The system is a built-up roofing system with gravel ballast on lightweight insulating concrete on metal deck as the original building drawings indicated. The ARFF staff complained of roof leaks throughout the facility. The signs of some moisture infiltration are evident in the mildew stains and water damage on the ceiling tiles.

2.3.3 Windows

The window system is a single pane non-insulating glazing system that looks to be original to the building. The window framing system is composed of a bronze anodized aluminum framing with 1/4" solar bronze glass. The window framing system incorporated operable vents for fresh air,

[1] ***Concerns about Asbestos-contaminated Vermiculite Insulation -*** *A mine near Libby, Montana, was the source of over 70 percent of all vermiculite sold in the United States from 1919 to 1990. There was also a deposit of asbestos at that mine, so the vermiculite from Libby was contaminated with asbestos. Vermiculite from Libby was used in the majority of vermiculite insulation in the United States and was often sold under the brand name Zonolite. If you have vermiculite insulation in your home, you should assume this material may be contaminated with asbestos and be aware of steps you can take to protect yourself and your family from exposure to asbestos, U.S. Environmental Protection Agency, http://www.epa.gov/asbestos/vermiculite.html*

which no longer works properly and are filled with dust and bugs. The vents are located approximately two feet above the finish floor.

2.3.4 Flooring

There are four basic flooring systems (exposed concrete, vinyl asbestos tile, quarry tile, and ceramic tile) currently installed in the facility which all appear to be original to the building. The truck bays and equipment rooms flooring are exposed concrete, which appear to be in fair to good condition. The truck bays flooring appears to have been sealed recently. The vinyl asbestos tiles appear to be in fair condition and are installed in the utility rooms, hall ways, pantry, storage, office, dorm rooms, and locker room. The ceramic tiles are installed in toilet and showers rooms and are in fair condition. The quarry tiles are installed in the Watch Room and Dining room and also appear to be in fair condition. The flooring throughout the facility is in fair condition but show signs of wear and tear. Proper precautions should be taken with the vinyl asbestos tile during any planned renovation project of the facility.

2.3.5 Ceilings

There are three types of ceilings in the facility: exposed metal deck and steel joist, 24-inch x 24-inch lay–in acoustical tiles in exposed grid, and painted smooth hard coat plaster. The exposed metal decking is located in the truck bays and is showing sign of deterioration. The hard coat plaster is located in the kitchen, toilet, and shower rooms and appears to be in fair condition. The lay-in acoustical tiles are located though most of the other spaces in the facility and show signs of wear and tear. Some tiles are missing and some have water stains and mildew spots. The acoustical ceiling tiles are at or near the end of their useful life.

2.3.6 Sightlines

The staff of the ARFF complained of obstructed views of the runways. Several hangars and other general aviation buildings have been constructed near the ARFF that limit views from the building. Views of the runways from the Watch Room have been obstructed with buildings on both the north and south side of the ARFF. In addition, the airport terminal is not visible from this location.

2.3.7 Truck Bays

The truck bay is shared with the local fire firefighters and the ARFF. The tow truck bays have roll up doors on both ends that will accommodate a total of four fire trucks. The bays are very tightly packed when all four fire trucks are parked. Currently the biggest truck parked in the ARFF is an Oshkosh Stryker-1500, which has limited clearance at each side. Exhaust ductwork for a vehicle exhaust capture system was observed in use during this report, but supplemental ventilation fans may be required to remove excess exhaust fumes. CO2 monitors were not observed during the site review.

2.3.8 Mechanical, Electrical and Plumbing (MEP)

The ARFF existing HVAC, Plumbing, Fire Protection, and Electrical systems were reviewed for their existing condition.

- **HVAC -** The ARFF is served by two direct expansion (DX) split systems. The constant volume air handler units are located in a mechanical room and two heat pump condensing units are located in a walled-off area on the outside of the building. According to existing

drawings, the capacity of each system is approximately five tons. AHU-1/HP-1 system appears to have been installed in 2010 based on equipment dates from the manufacturer. AHU-2/HP-2 appears to have been installed in 1994 based on equipment dates from the manufacturer; this exceeds the ASHRAE recommended service life of 15 years for this type of equipment. According to discussions with the ARFF staff, both units are operating satisfactorily. The dorm rooms, locker room, and toilet rooms are served by one air handler unit while the remainder of the facility is served by the other unit. According to the original building drawings, these units are provided with outside air duct connections to provide ventilation air to building. However, these smaller, residential type split systems are not well-suited for conditioning outside air in the humid Florida climate and can have problems with controlling humidity levels in the building. There are signs of water leaks and mold around the air handler units. Pressurized tanks were observed being stored in the mechanical room near the air handler. The contents of the tanks are not known at the time of this report, but caution should be taken to prevent the contents of the tank leaking into the air stream to the building. The ceiling air diffuser was observed to be dirty with excessive dust, which could be an indication that the filters for the AHU's are not being replaced properly.

There is a commercial type I kitchen hood installed above the cooking range. The hood has an Ansul fire suppression system. The hood exhaust fan and make-up air systems were not observed during this site visit, but it is believed that the existing HVAC systems likely do not provide sufficient make-up air for the hood when it is operating.

- **Fire Protection System** - The ARFF facility does not have a fire protection system. This is a violation of today's building code requirements. If the current facility is to be renovated for continuing use, the building code will require the installation of a fire protection system.

- **Plumbing Systems** - Two restrooms provide three sinks, two urinals, three toilets, and three showers. Plumbing fixtures throughout the facility appeared to be in satisfactory condition. Domestic hot water for the facility is provided by two separate electric hot water heaters. The heaters appeared to be in good condition and appear to have sufficient capacity for the building.

- **Lighting and Power Systems** - The power service for the building is routed underground from a Gainesville Regional Utility (GRU) 75 kVA pad mounted transformer located at the front of the facility. The power is distributed throughout the building via two single-phase 240/120V panel boards. There are a variety of incandescent and fluorescent lamp types in the building, with T12 fluorescent lamps present in some of the fixtures. T12 lamps are being phased out of production and are expected to be obsolete in the near future. Exterior lighting is provided by high-pressure sodium lamps on wall pack floodlights. The lamp types and controls do not conform to current energy codes. Emergency/back-up power is not present at the building, which also does not conform to current ARFF building requirements. The fire alarm system is in fair condition. The sound system and speakers are from the original building construction. The emergency lighting fixtures (2 heads) and exit signs are on battery backup to provide for emergency egress lighting. The majority of electrical equipment (panel boards, lighting, fire alarm devices, etc.) are from the original building and are at the end of useful life with obsolete replacement parts, i.e. circuit breakers.

2.3.9 Qualitative Evaluation of the Existing ARFF Structure

Based on the items mentioned above, the overall building condition is assessed to be in fair to poor condition and would require, in some cases, extensive renovation or new ARFF built to solve the issues found by this non-destructive evaluation of the existing facility. There are several factors, which support this view, for instance, the existing roofing leaks seem to be extensive and have been ongoing for an extended period. This uncontrolled moisture infiltration into the facility will cause a large number of issues that may be visible or not visible without further investigation, for example, deterioration of the primary support structure system, mold and mildew growth, etc.

Furthermore, several of the existing building major elements may also contain contaminated asbestos and/or asbestos products. The abatement of the existing asbestos is costly. The renovation of the existing facility will not resolve all the issues. The views of the runways from the facility have been blocked by surrounding building, which may affect the ARFF overall effectiveness. The building HVAC systems have exceeded their service life for the type of equipment or are not properly suited for the climate conditions. The existing facility also lacks a fire sprinkler system, which will be required by current codes.

In reviewing the feasibility of an existing ARFF, renovation versus a new construction, several unique design constraints were discovered as mentioned in the previous paragraphs. The initial cost to renovate maybe slightly less than to build new, but will not resolve all the problems found. Good planning practice indicates that a new ARFF facility will be required at an alternate location. While there is sufficient space at this location to construct a new facility, the entire site would be used. During construction of the new ARFF facility, the ARFF function would need to be in a temporary location elsewhere on the airport.

An estimate of probable cost for a new two bay ARFF is approximately $1.75 million and a three bay is approximately about $2.5 million. The costs do not include site upgrades such as extension of site utilities, new access roads, etc.

2.4 SITE EVALUATION

This section presents an evaluation of the four sites. Both FAA operational criteria and site specific evaluation criteria were used to assess the sites.

2.4.1 FAA ARFF Operational Criteria

The following are the FAA's site selection criteria for operational factors relative to ARFF structures:[2]

- Immediate, straight access to the airfield network.
- Unimpeded access routes with a minimum of turns to the airfield network and aircraft aprons.
- Direct access to the terminal aprons minimizing the crossing of active runways, taxiways, or difficult terrain. This parameter is critical because of the need for a timely safe response to emergencies on the ramps, aprons, or terminal areas. Response routes that do not require ARFF vehicles to enter the aircraft movement area will reduce the risk of airfield incursions.
- Non-interference with the air traffic control tower's (ATCT) line of sight.
- Maximum surveillance of the airfield.

[2] Source: Aircraft Rescue & Firefighting Building Design, FAA Advisory Circular No. 150/5210-15A, September 10, 2008, pp. 2-3.

- Adherence to the Building Restriction Line (BRL) as determined using AC 150/5300-13A, *Airport Design*.
- Future expansion of the ARFF station without:
  - Limiting or reducing airport surveillance;
  - Blocking fire traffic lanes;
  - Impacting adjacent roads, buildings, aircraft pavement and parking areas, and ATCT's line of sight unless the structure or paved area is to be eliminated for other reasons; and,
  - Requiring significant structural changes to the ARFF station itself.
- Planned airfield improvements that will not create emergency response runs that will negatively impact FAR Part 139 response time requirements. However, in this event, an additional (satellite) ARFF station(s) may provide an alternative.
- Non-interference by ARFF vehicles or the ARFF station's communications equipment or with navigational facilities.
- Adherence to FAR Part 77.25, *Civil Airport Imaginary Surfaces*.
- Minimum obstructions or interference from existing facilities or uses such as:
  - Access roads;
  - Aircraft fuel storage areas; and,
  - Aircraft taxiing operations or parking areas.

2.4.2 Site Specific Evaluation Criteria

The criteria used for evaluation the sites are:

- Response Time. The key parameter for site consideration. This factor was described above in Section 3.1.
- Site Preparation and Infrastructure. This factor takes into consideration the availability of utilities, site preparation considerations, and landside/airside access.
- Environmental Considerations. This factor takes into consideration any potential environmental considerations associated with the site location
- Airport/Community Use. This factor takes into consideration the utility of the site both as the preferred location for an airport ARFF facility (a function of response time) as well as the potential long-term use for a co-location community Fire Station.
- Highest and Best Use. This factor takes into consideration the site location relative to the airport at large and whether or not it represents the highest and best use potential of the land at that location.

2.4.3 Site A

Site A is the current ARFF facility and is located within the general aviation area of the airport with the lowest response times to the crosswind runway.

- ❖ Operationally has less direct access to airfield as the other sites, the shortest route to the terminal would cross active runways, it does not have maximum surveillance of the airfield or visibility to the airport terminal, and would require a temporary location during the period a new ARFF structure is built on the existing site due to the need for building replacement.
- ❖ Maximum Response time from both Runway Length Scenarios: 2:18 minutes. The 2:18 minutes is the response time to the mid-point of the future extended Runway 11-29. Due to its position on the northeast side of the airfield, access times to Runway 7-25 are fastest.
- ❖ Site Preparation and Infrastructure: Site A is developed with water, sewer and electric currently servicing the site; it does not contain any environmental features.

- Pros/Cons of Existing Site Utilization - As described in Section 3.2 above, it was concluded that while the existing facility can be expanded at the existing location, there is no cost savings to renovate and expand the current structure over building a new structure that would conform to current ARFF standards. In addition, there is not sufficient space to expand at this location without demolition of the current facility prior to construction of the new one. Consequently, the ARFF function would need to be temporary located elsewhere on the airfield while the new building was being constructed. Therefore, Site A does not present a benefit over Site B or Site C in terms of cost savings from a building structure.
- Environmental Considerations - The existing site is a previously disturbed site and is located within the general aviation area. It does not present any adverse environmental considerations.
- Airport/Community Use: The current ARFF facility has the shortest response times as well as direct access to the main road off airport; this location provides the ability for quick response for airport and community emergencies
- Highest and Best use – As an airfield related land use, an ARFF facility represents one of the more important functions at an airfield. However, this location is within the general aviation area and is more conducive to general aviation facility development. Given adjacent development, the site is a prime location for larger corporate/FBO hangars or other similar use.

Due to the reasons cited above, this location for ARFF purposes is not considered the highest and best use of this property.

2.4.4 Site B

Site B is central to runway ends, and provides easy landside access to both the airport and the community at-large.

- Meets operational criteria.
- Maximum Response time from both Runway Length Scenarios: 2:32 minutes for future extended Runway 11-29 and 2:30 minutes for future extended Runway 7-25. However, these times are within the acceptable measurement parameter of 3:00 minutes.
- Site Preparation and Infrastructure
  - Consultation with the city will be required because of possible restrictions on clearing too many trees near the site.
  - Water, sewer and electric do not serve the site, but connection is feasible.
- Environmental Considerations – The existing site is currently occupied by a spare bank of trees which will be required to be cleared; area is adjacent existing wetlands and development could require approval by governing agency.
- Airport/Community Use: Site B has longer airport response times. The proposed site plan for the facilities enables quick access to the new airport access road and Waldo Road, if required.
- Highest and Best use - This location north of the new access road is appropriate for airport-related functions but does require construction of both airside and landside access. The ARFF structure would be considered a function meeting the highest and best use of this property.

Site B is feasible for location of a new ARFF facility with space for future expansion, if required. The site has not yet been developed and would require tree removal. Overall, the site is not large but adequate for the ARFF and potentially another small envelope facility, such as an airport traffic control tower. This site is also being considered as one of the alternatives for the ATCT.

Unlike the other sites, Site B would require utilities constructed to it. Adjacent airport property that is not part of the runway protection zone for Runway 7-25 has been identified for infrastructure improvements for future non-aeronautical activity. As such, any infrastructure development constructed for the ARFF in advance of future development would need to be planned in conjunction with that campus.

2.4.5 Site C

Site C is the most central location to the runway system with the lowest response times to the main air carrier runway; however, no landside access currently exists necessitating additional cost to build this infrastructure.

- Meets most operational criteria. Site does not have direct access to terminal apron without crossing of Runway 11-29. The view of the terminal apron from Site C is the best for any site; Site B and Site D are peripheral to the airport terminal whereas Site C is diagonally in view of it. The terminal apron is not visible from existing Site A.
- Maximum Response time from both Runway Length Scenarios: 2:16 minutes. Response time to the mid-point of Runway 11-29 is 1:54 which is essentially the same as Site D (1:52).
- Site Preparation and Infrastructure
  - Site C has been previously occupied by buildings that are now abandoned.
  - Water, sewer and electric do not serve the site, but connection is feasible; extension of utilities will affect adjacent wetlands.
  - The road to access Site C will need improvements and widening, especially from the east.
- Environmental Considerations – Wetlands immediately adjacent to Site C will not be impacted for the development of the ARFF if it occurs on the previously developed area, but utilities and road extensions will impact the wetlands.
- Airport/Community Use – Site C will need landside infrastructure to provide access to the community, currently there is only a small private road to access the site. Site C provides the shortest response time to the main air carrier runway along with Site D.
- Highest and Best use – This location in the midfield is most conducive to airport-related functions requiring primarily airside access. The ARFF structure would be considered a function meeting the highest and best use of this property.

2.4.6 Site D

Site D is located central to the runway system and provides relatively equal response times to Runway 11-29 compared to Site C. Site D is located adjacent to the current airport traffic control tower and provides easy landside access to the airport. With regard to the community at-large, the site does not have as good access as existing Site A or Site B but better than Site C.

- Site meets all FAA operational criteria.
- Maximum Response time from both Runway Length Scenarios: 2:32 minutes. This maximum time is relative to future extended Runway 7-25. However, Site D provides the fastest time to the mid-point of Runway 11-29 of 1:52.
- Site Preparation and Infrastructure
  - Site D site is clear and ready for development.
  - Landside access in already in place as it is adjacent to the current Air Traffic Control Tower.

- Utility infrastructure is in place. The site is east of the Air Traffic Control Tower and northwest of the airport maintenance building.
- A roadway connection to Taxiway Echo is required to provide the most direct access to the airfield. The new roadway connection will cross a culvert.

- Environmental Considerations – The site does not present any adverse environmental considerations.
- Airport/Community Use – Site D has relatively low response times and requires minimal upgrades to landside infrastructure to easily access the main road and quickly respond to airport or community emergencies.
- Highest and Best use – This location is located immediately adjacent to the Air Traffic Control Tower and in the proximity of the maintenance facility. The ARFF structure would be considered a function meeting the highest and best use of this property.

2.4.7 Evaluation

In evaluating the four sites, the most important factors are response time and adherence to site selection operational criteria.

Response Time. All four sites fall well within the response time parameter. Site D and Site C are better relative to Runway 11-29 and Site A and Site C are better relative to Runway 7-25.

Operational Criteria. From an operational perspective, Site B, Site C, and Site D meet FAA operational criteria. Due to the age and condition of the existing ARFF structure, a new building is required for Site A. While the site is technically large enough, it does not provide future room for expansion. At the same time, it has limited airfield visibility as well as no terminal visibility. During the time a new facility is being constructed, the ARFF function at GNV would need to be in a temporary location. Unlike the other sites, there is no immediate competing land use. If a new ARFF structure is not built at the current location, the site is desirable for construction of a corporate aircraft hangar similar to those in proximity.

Site Preparation and Infrastructure. Site A and Site D have availability to infrastructure whereas Site B and Site C do not. On the other hand, there has been previous development at Site C, although buildings are now abandoned. Of the four sites, Site B would require the most physical site development due to tree clearing. In addition, Site B and Site C require access to be constructed to it. Access to Site B would connect the site to the new airport entrance road. Access to Site C would parallel Runway 11-29 from the east. The road would follow the route of the perimeter road westerly along the property line until the perimeter road curves from west to north. From that point, the ARFF road would continue west to Site C in the midfield.

Environmental Considerations. Site A and Site D are previously disturbed. Site B would require consultation with the City due to possible restrictions on tree clearing. It also may have some wetland impacts but the specific site chosen was selected in conjunction with existing wetlands and flood information and represents a site that does not appear to impact wetlands. Nevertheless, it would be prudent to do wetlands delineation in the event the site was selected. Site C would be constructed on a previously developed site but the access road that would need to be constructed to it may have wetlands impacts.

Airport/Community Use. The airport/community use parameter takes into consideration the opportunity to co-locate community fire protection facilities along with ARFF. Site A is too small to accommodate any additional facilities. Site B is the shortest distance to Waldo Road but access would be via the new access road. If the site were also to be considered as a location for an Air

Traffic Control Tower, there is not sufficient space for a community fire station. Site C is in the midfield and has sufficient room to accommodate a community fire station however access to it is the longest. The two options to reach the site are from the northeast around the end of Runway 7-25 or from the east from 39th Street northeast of the end of Runway 29. Site D, adjacent to the current Air Traffic Control Tower, is east of the main terminal. With proper planning, the site could accommodate a community firefighting facility but somewhat removed from Waldo Road or 39th Avenue.

Highest and Best Land Use. Site A is located within the corporate general aviation area, Site B in a forested area suited for airfield-related development, Site C in an area of the midfield planned for future airfield and general aviation related development, and Site D is adjacent to the existing Air Traffic Control Tower. With the exception of Site A, the sites all represented the highest and best uses of land at their location.

2.4.8 Recommendation

In consideration of the evaluation six factors, the recommended site for future ARFF development is Site D. Site D best meets the goals and objectives for GNV:

- Response Times. All the response times are in the same for all sites range with Site D equivalent to the others. For access to the primary runway, Site D is marginally better than the others.
- Operational Criteria. Overall, Site D best meets these criteria; in particular the site has good visibility of the airfield and terminal apron and has sufficient size for future expandability. Site B and Site C also meet FAA operational criteria where there are important operational issues with Site A. Due to the age and condition of the existing ARFF structure, a new building is required for Site A. While the site is technically large enough, it does not provide future room for expansion. At the same time, it has limited airfield visibility as well as no terminal visibility. During the time a new facility is being constructed, the ARFF function at GNV would need to be in a temporary location. Unlike the other sites, there is no immediate competing land use. If a new ARFF structure is not built at the current location, the site is desirable for construction of a corporate aircraft hangar similar to those in proximity.
- Site preparation/infrastructure. In terms of site preparation, Site D is a greenfield site with existing infrastructure whereas Site A, the current location, requires demolition of the existing structure before construction of a new facility. The site assessment of the current facility concluded that it would be more cost effective to build a new structure than to renovate the existing one. In addition, issues such as asbestos and mold would need to be addressed. Site B and Site C are also greenfield sites but Site B requires more site preparation than Site D. Site C requires the most site preparation but not in terms of the site for the structure but in terms of the need to construct a road to access it.
- Environmental considerations. Site D does not present any adverse environmental considerations and does not have any potential impact to the wetlands like could exist for Site B and Site C.
- Airport/community use. From the standpoint of being able to develop a site that would jointly serve both an aviation and community fire location function, each of the sites presents opportunities to provide access or site development for a co-located facility.
- Land use. From a highest and best use perspective, Site D is judged equal or better than the others.

APPENDIX A
AVERAGE TURN OUT TIME

Incident #	CADCallType	INCIDENT DATE	DISPATCH	RESPONDING	Turn-Out Time (Min)
07005458	ALERT1	5/5/2007	11:19:00	11:20:00	01:00
07010475	ALERT1	9/5/2007	9:57:00	9:58:00	01:00
07013262	ALERT2	11/9/2007	0:28:13	0:33:12	04:59
07013700	ALERT1	11/19/2007	14:15:00	14:16:00	01:00
08003357	ALERT1	3/23/2008	19:28:00	19:29:00	01:00
08004981	ALERT1	5/3/2008	17:08:00	17:09:00	01:00
08006138	ALERT2	6/2/2008	10:04:00	10:05:00	01:00
08006963	ALERT3	6/22/2008	19:32:00	19:33:00	01:00
08009256	ALERT1	8/20/2008	13:45:00	13:45:00	00:00
08009708	ALERT2	8/29/2008	21:26:00	21:27:00	01:00
08012695	ALERT3O	11/7/2008	7:10:00	7:11:00	01:00
08014709	ALERT2#	12/26/2008	21:49:50	21:50:00	00:10
09001143	ALERT2#	1/29/2009	12:44:00	12:45:00	01:00
09005491	ALERT2#	5/12/2009	18:23:01	18:24:00	00:59
09005481	ALERT2#	5/12/2009	15:21:06	15:22:00	00:54
09007229	ALERT2#	6/22/2009	15:09:51	15:10:00	00:09
09012296	ALERT2	10/9/2009	17:19:46	17:19:56	00:10
09012604	ALERT2	10/16/2009	21:23:26	21:23:36	00:10
09013476	ALERT2	11/6/2009	17:10:25	17:11:35	01:10
09013566	ALERT1	11/8/2009	18:15:26	18:15:49	00:23
10000061	ALERT2	1/3/2010	11:22:04	11:23:13	01:09
10001255	ALERT1	1/31/2010	10:40:10	10:40:52	00:42
10002259	ALERT2	2/24/2010	21:59:31	21:59:55	00:24
10005696	ALERT1	5/13/2010	18:38:58	18:39:00	00:02
10005891	ALERT1	5/18/2010	11:51:56	11:52:30	00:34
10006553	ALERT1	6/2/2010	9:36:42	9:37:00	00:18
10007531	ALERT1	6/24/2010	10:33:39	10:33:55	00:16
10010789	ALERT1	9/5/2010	22:07:16	22:08:27	01:11
10012689	ALERT2	10/16/2010	16:50:09	16:51:51	01:42
10015817	ALERT1	12/26/2010	8:13:36	8:14:04	00:28
11001030	ALERT2	1/24/2011	14:49:45	14:50:20	00:35
11003473	ALERT3	3/19/2011	9:34:41	9:36:09	01:28
11005772	ALERT1	5/6/2011	20:46:27	20:48:27	02:00
11006517	ALERT2	5/23/2011	15:02:01	15:02:02	00:01
11007717	ALERT3	6/21/2011	10:47:15	10:48:00	00:45
11012059	ALERT3	9/27/2011	20:46:52	20:48:03	01:11
11012756	ALERT1	10/12/2011	11:59:18	12:00:00	00:42
11013454	ALERT1	10/28/2011	9:51:00	9:51:19	00:19
11013781	ALERT1	11/4/2011	17:23:39	17:23:49	00:10
12000833	ALERT2	1/19/2012	13:18:25	13:20:22	01:57
12002941	ALERT2	3/4/2012	10:39:45	10:40:17	00:32
12005477	ALERT1	4/25/2012	7:13:41	7:15:43	02:02
12008246	ALERT2	6/27/2012	8:01:16	8:03:36	02:20
12008967	ALERT1	7/12/2012	13:11:07	13:13:00	01:53
12009291	ALERT2	7/19/2012	10:20:49	10:21:22	00:33
12009548	ALERT2	7/25/2012	10:13:19	10:14:16	00:57
12011424	ALERT1	9/1/2012	22:15:37	22:18:22	02:45
12012769	ALERT1	9/28/2012	16:41:37	16:42:51	01:14
12017266	ALERT1	12/28/2012	13:51:42	13:52:00	00:18
13000032	ALERT1	1/1/2013	12:51:22	12:53:53	02:31
13000240	ALERT1	1/6/2013	15:32:00	15:32:19	00:19
13001721	ALERT1	2/5/2013	17:15:36	17:15:36	00:00
13003512	ALERT2	3/13/2013	22:33:47	22:37:22	03:35
			Average Turn Out Time		**01:01**

ATTACHMENT C
RUNWAY 11-29 FEASIBILITY WORKING PAPER

ALP Update Working Paper:

Runway 11-29 Feasibility

Prepared for

GAINESVILLE REGIONAL AIRPORT

July 2013

Version 4.0

RS&H
IMPROVING YOUR WORLD

TABLE OF CONTENTS

Introduction 3
CHAPTER 1 Runway 11-29 Feasibility analysis 4
1.1.1 Runway 11-29 Length Analysis 4
1.1.2 Information from the Interviews 4
1.1.3 Runway Length Analysis 5
1.1.4 Recommendations 8
1.1.5 Runway 29 Extension Rough Order Magnitude of Cost **Error! Bookmark not defined.**

FIGURES

Figure 1 GNV RUNWAY LENGTH ANALYSIS 7
Figure 2 GNV RANGE MAP 7

TABLES

Table 1 GNV RUNWAY LENGTH ANALYSIS 6

INTRODUCTION

This working paper has the purpose to specify a reasonable runway length for long-term planning purposes for the Gainesville Regional Airport. It recommends the planning for a future 500-foot extension of Runway 11-29.

The inclusion of a 6,500-foot length of Runway 7-25 as identified in the 2006 Master Plan and shown on the current ALP was not revisited and was not part of this project.

CHAPTER 1
RUNWAY 11-29 FEASIBILITY ANALYSIS

1.1 Runway 11-29 Length Analysis

Gainesville has been very successful in attracting new technically oriented businesses to the community over the past decade. The community is building a critical mass in culture, technology, and education, in part because of the University of Florida's emergence as a major university and also because the quality of life in the Gainesville has become nationally recognized. In response to anticipated long-term growth, ongoing planning activities for GNV should consider the impact of that growth on long-term runway length requirements. The 2006 Master Plan considered a long-term potential length for Runway 7-25 to be 6,500-feet. This task includes a similar examination of the ultimate length of Runway 11-29.

This runway task itself consists of two parts. The first step is to interview knowledgeable persons at GNV to identify potential users, followed by a runway length analysis by aircraft type.

1.2 Information from the Interviews

Based upon discussions with the Airport, two persons were interviewed to identify potential future users and what their needs would likely be – Airport Director Allan Penksa on December 17, 2012 and General Manager Bill Pokorny of University Air Center on December 19, 2012. Information from these interviews was incorporated into the forecast discussions in previous sections of the ALP Update.

The interviews generated the following points:

- Air cargo. There have been periodic discussions at GNV over the years regarding the potential to stage limited air cargo operations. The region has a growing, biotech industry that relies on daily overnight, delivery of high value, biological materials. This service is presently being provided by FedEx ground services from Gainesville to the Fed Ex air freight facility in Jacksonville. Local biotech companies have expressed dissatisfaction with the unavailability of evening pick-ups for next day delivery, which is a significant problem for the local industry. Despite efforts to identify potential air cargo operations, the prospect for significant future air cargo activity is not considered to become a reality within the short term. However, for purposes of long-term planning, areas for air cargo should continue to be identified for such uses on the Airport Layout Plan.

- In the past, there have been discussions with Boeing 727 operators considering transport of high value items, including horses from GNV. Transport of horses was considered since this part of Florida is well known as horse country. Horses were formerly transported from GNV via B-727 and DC-8 aircraft prior to these types of operations consolidating to Ocala. Ocala's runway length is similar to GNV, and Ocala is actively planning to extend its primary runway.

- Military operations. Military activities have a strong connection with GNV. Large aircraft like the KC-10 (military version of the DC-10) and KC-135 tankers (military version of the B-707) refuel at GNV. In one month during 2012, 20 large military aircraft refueled at the airport, including the KC-135 and C-130 Hercules as well as A-10s and CH-47s. In addition, U.S. Navy F/A-18 Hornets, T-6 Texans, and P-3 Orions often refuel at GNV enroute to Key West. While

GNV represents an excellent refueling location for many military aircraft, a runway extension to at least 8,000 feet would put GNV into position to attract more military flights. In discussions with military personnel at Air National Guard bases across the country, the 8,000-foot length is often cited as the general runway length desirable for operating tactical aircraft.

- General aviation. Based upon interviews, there are a relatively large number of older general aviation aircraft that operate at GNV. These aircraft are either privately owned by individuals or operated by aerial refuelers. It should be noted that aerial B-707 aerial refuelers have requested operation at GNV to top off their fuel tanks at GNV but cannot do so due to inadequate runway length. There is also an issue of the apron strength in the general aviation area that is a limiting factor.

- Charter operations. In general, the current 7,504-foot runway at GNV provides sufficient runway length for handling charter operations. However, it is noteworthy that there are instances when fully loaded B-737s carrying University of Florida teams and supporters to bowl or away games must use the full runway length. Other Southeastern Conference schools are increasingly using B-757 aircraft and some are using B-767 aircraft. It is not uncommon for these aircraft to use the full runway length upon departing or use reverse thrusters upon landing.

  In addition, Allegiant Airlines is considering GNV as a location for their charter operation and could use a DC-9 aircraft.

- Maintenance Operations. At one time, A-Star was interested in locating a large aircraft maintenance facility at GNV, for maintenance of DHL aircraft when DHL operated a fleet. GNV was the location for Eclipse Aviation's regional factory service and modification center. DayJet also operated a separate facility at GNV also for maintenance of its Eclipse 500 jet fleet. Both companies recognized the advantages of GNV's inland location by minimizing costly disruptions from hurricanes. Both companies filed for Bankruptcy in 2008. Silver Airways now leases the former Eclipse Aviation facility for maintenance of its SAAAB-340 and Be-1900 fleet. Air Methods, Inc. currently operates a regional helicopter maintenance facility in the former DayJet hangar. Air Methods is the largest publically traded operator of emergency medical helicopters in the U.S. GNV continues to be a candidate for a potential airline and jet maintenance operations.

1.3 Runway Length Analysis

The runway length analysis for GNV takes into consideration the additional capability that a longer runway could provide for pilots wanting to operate at maximum zero fuel weight for extended segments. The additional capability may also open new markets due to the additional range enabled by a longer runway. These are the parameters used for evaluating runway lengths at GNV.

Table 1 provides a runway length analysis for the existing runway length and two future conditions, 8,000 and 8,500-feet. Many of the aircraft in this table are older models that are likely to be used for charter, air cargo, and general aviation uses. All calculations assume maximum gross takeoff weight as the measure for serviceability used for evaluating runway length.

As the table demonstrates, only a modest increase in range is achievable for the alternative runway lengths. The benefits are most noticeable between 7,500 feet and 8,000 feet for the B757-200, B-757-300, B-767-300, and MD-11. For these, increasing the runway length from 8,000 feet

to 8,500 feet yields less benefit than does extending it from 7,500 feet to 8,000 feet. It is interesting to note that there is no range difference for the B-767-200 or B-707 aircraft from 7,500-feet to 8,500-feet. For the older B-737 model series, only minor range improvement is gained by extending the runway.

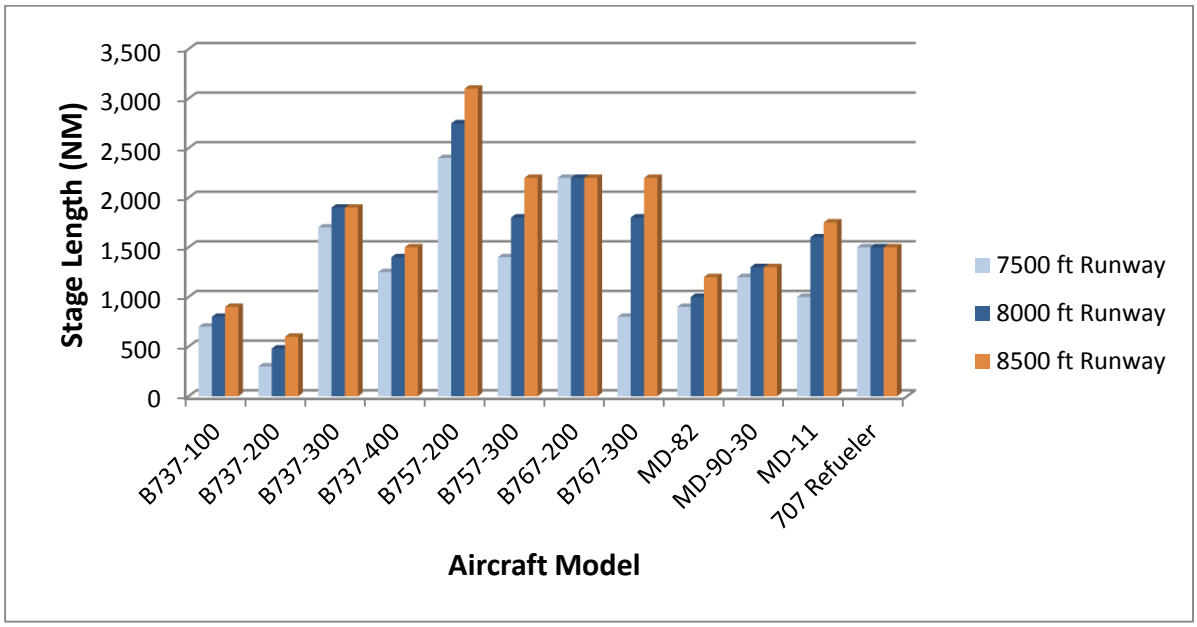
Table 1
GNV RUNWAY LENGTH ANALYSIS

Aircraft		Stage Length (NM)		
Aircraft Type	**Model**	**7500-ft Runway**	**8000-ft Runway**	**8500-ft Runway**
Passenger	B737-100	700	800	900
	B737-200	300	480	600
	B737-300	1,700	1900*	1,900*
	B737-400	1,250	1,400	1,500
	B757-200	2,400	2,750	3,100
	B757-300	1,400	1,800	2,200
	B767-200	2,200*	2,200*	2,200*
	B767-300	800	1,800	2,200
	MD-82	900	1,000	1,200
	MD-90-30	1,200	1,300*	1,300*
Cargo	B757-200	2,400	2,750	3,100
	B767-200*	2,200*	2,200*	2,200*
	MD-11	1,000	1,600	1,750
Military	KC-135	1,500*	1,500*	1,500*

** Indicated Max stage length at full payload*

Figure 1 provides a graphical depiction of Table 1

Figure 1
GNV RUNWAY LENGTH ANALYSIS



The other parameter used to evaluating runway length is the difference in the markets potentially service by extending the runway. Figure 2 is a range map for 300, 500, and 1,000 miles.

Figure 2
GNV RANGE MAP



1.4 Recommendations

For planning purposes, it is reasonable to plan for an ultimate length of Runway 11-29 of 8,000 feet. Currently, there is no immediate justification for a runway extension. However, there are a number of developments that could warrant a future runway extension, should those conditions materialize. These are:

- Gainesville's reputation as having an excellent quality of life and home to a growing technological and research community provides an attractive atmosphere for business growth, which may bring with it the demand for additional commercial passenger service and the need for a future runway extension;

- Periodically, there are fully loaded charter operations that require full length of the existing runway for landing and takeoff. While the need currently does not justify a runway extension, it could become more prevalent in the future;

GNV serves military aircraft that have high approach speeds, as well as tankers and other large military aircraft that need the full 7,500 feet. Based upon working with airports in the U.S. with military installations, it is common that *Installation Development Plans (IDP)* include a minimum requirement of 8,000 feet for takeoffs and landings. GNV interviews with military personnel indicated that 8,000 feet could induce additional activity and make GNV an attractive alternative for transient refueling. This activity would provide the airport with an important additional revenue source to fund airfield operations.

- Commercial passenger and air cargo airlines have considered GNV as a candidate location for a maintenance base over the years but nothing has yet materialized. However, a longer runway would make GNV more attractive and competitive compared to surrounding airports that have 8,000 feet or more, such as Lake City, where Timco conducts major Boeing and Airbus maintenance operations, or St. Augustine, which has a Northrup Grumman facility; and,

- As in the case for smaller aircraft, GNV's inland location provides opportunities for diversions of larger aircraft during period of severe weather in other parts of the state. This inland location makes GNV an attractive location for major maintenance operations by minimizing potential, long-term disruptions from hurricanes.

Extending Runway 11-29 to 8,000 feet would enable longer stage lengths for a number of aircraft, including:

- Boeing 737-200: Stage length increase of 180 NM, to 480 NM, allowing flights to:
  - Birmingham
  - Charlotte
  - Raleigh
  - New Orleans

- Boeing 757-200: Stage length increase of 350 NM, to 2,750 NM, allowing flights to:
  - Portland
  - Seattle

- Boeing 767-300: Stage length increase of 1,000 NM, to 1,800 NM, allowing flights to:
  - Detroit
  - Newark
  - New York
  - Dallas
  - Chicago
  - Manchester
  - Santa Fe
  - Boston

  - Austin
  - San Antonio
  - Denver
  - Phoenix
  - Minneapolis

- MD-11: Stage length increase of 600 NM, to 1,600 NM allowing flights to:
  - Boston
  - Manchester
  - Minneapolis
  - Santa Fe
  - Denver

Therefore while there does not seem to be sufficient justification for considering lengthening Runway 11-29 in the immediate timeframe, there are many indications that a longer runway may be required to 8,000 feet and potentially justified within the next five to 10 years.

1.5 Runway 11-29 Extension Rough Order of Magnitude Cost

A preliminary estimate of the cost associated with the extension of Runway 11-29 by 500 feet to 8,000 feet has been prepared for the ALP Update Report and will be included in the Capital Improvements Program (CIP). The estimated cost for the runway extension, extension of parallel runway, relocation of the glide slope, approach lighting system, Precision Path Indicator Lights (PAPI), and FAA flight certification. The estimated cost of this project is $4.9 million.

ATTACHMENT D
AIRPORT LAYOUT PLAN SET

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE, FLORIDA

AIRPORT LAYOUT PLAN UPDATE

PREPARED FOR

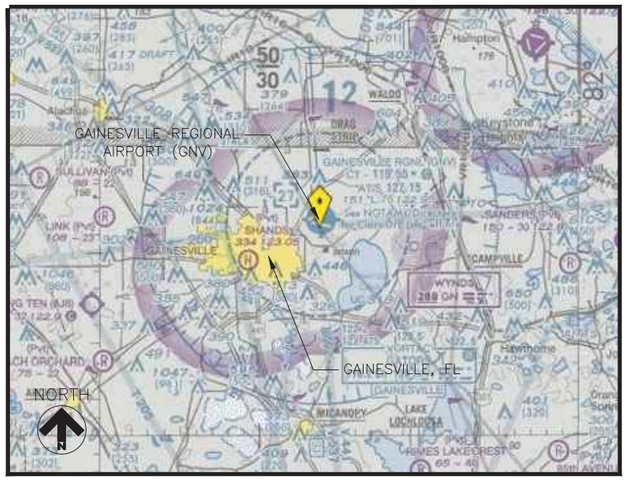
GAINESVILLE - ALACHUA COUNTY REGIONAL AIRPORT AUTHORITY

RS&H

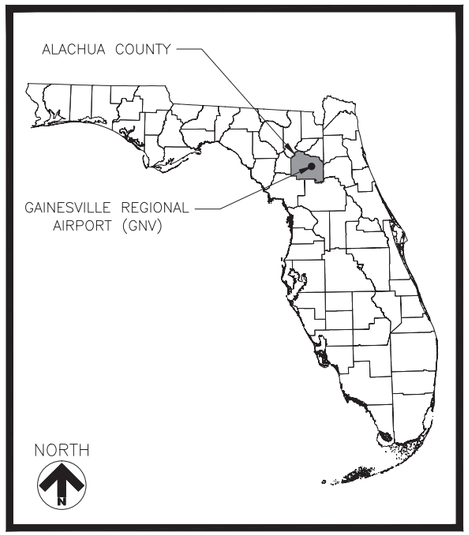
RS&H, Inc.
10748 Deerwood Park Boulevard South
Jacksonville, Florida 32256-0597
904-256-2500 FAX 904-256-2502
www.rsandh.com
FL.Cert.Nos. AAC001886 EB0005620 LCC000210

GAINESVILLE REGIONAL AIRPORT

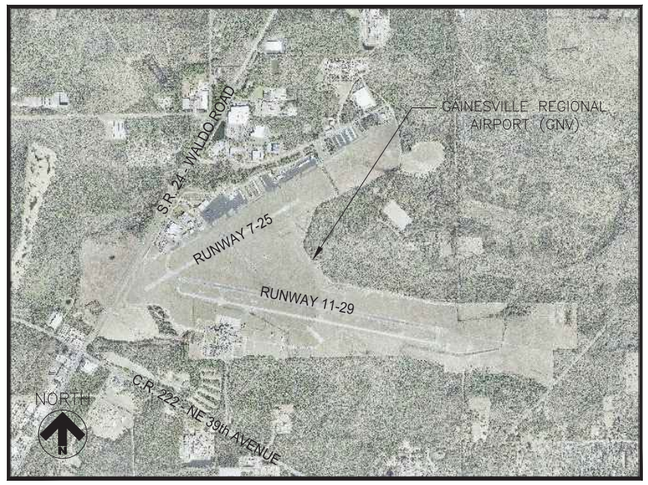
FAA AIP NO.: 3-12-0028-035-2012
RS&H PROJECT NO.: 201-3363-007
JULY 31, 2015



LOCATION MAP
N.T.S.



STATE MAP
N.T.S.



VICINITY MAP
N.T.S.

FDOT SPONSOR APPROVAL

THIS AIRPORT DRAWING IS APPROVED BY:

(SIGNATURE) _____ DATE: _____

NAME: _____

TITLE: _____

AIRPORT SPONSOR APPROVAL

THIS AIRPORT DRAWING IS APPROVED BY:

(SIGNATURE) _____ DATE: _____

NAME: _____

TITLE: _____

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION	REVISION DATE
1	TITLE SHEET	
2	AIRPORT DATA SHEET	
3	FACILITIES LAYOUT PLAN	
4	AIRPORT LAYOUT PLAN	
5	AIRPORT AIRSPACE DRAWING (1 OF 2)	
6	AIRPORT AIRSPACE DRAWING (2 OF 2)	
7	AIRPORT AIRSPACE PROFILES	
8	INNER PORTION OF THE APPROACH SURFACE RUNWAY 11	
9	INNER PORTION OF THE APPROACH SURFACE RUNWAY 29	
10	INNER PORTION OF THE APPROACH SURFACE RUNWAY 7	
11	INNER PORTION OF THE APPROACH SURFACE RUNWAY 25	
12	DEPARTURE SURFACE DRAWING RUNWAY 11-29	
13	TERMINAL AREA PLAN	
14	GENERAL AVIATION AREA PLAN (1 OF 2)	
15	GENERAL AVIATION AREA PLAN (2 OF 2)	
16	LAND USE DRAWING	
17	AIRPORT PROPERTY MAP	

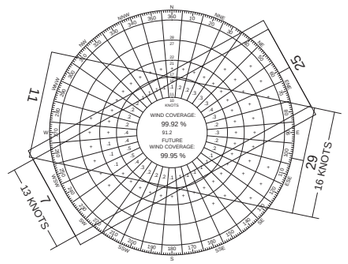
RUNWAY DATA

	RUNWAY 11-29				RUNWAY 7-25			
	EXISTING		FUTURE		EXISTING		FUTURE	
RUNWAY DIMENSIONS (L x W)	7504' X 150'		8004' X 150'		4158' X 100'		6500' X 100'	
RUNWAY DESIGN CODE	C-III-2400		C-III-2400		B-II-4000		C-III-2400	
RUNWAY REFERENCE CODE	C-III-2400		C-III-2400		B-II-4000		C-III-2400	
TAXIWAY DESIGN GROUP	TDG-3		TDG-3		TDG-2		TDG-3	
CRITICAL AIRCRAFT	BOEING 727		BOEING 737		KING AIR 200		CANADAIR REGIONAL JET	
EFFECTIVE GRADIENT[2]	-0.6%		-0.6%		-0.5%		-0.5%	
PAVEMENT TYPE	ASPHALT		ASPHALT		ASPHALT		ASPHALT	
PAVEMENT STRENGTH (LBS)	S-75,000, D-260,000, DT-320,000		S-75,000, D-260,000, DT-320,000		S-75,000, D-150,000, DT-210,000		S-75,000, D-150,000, DT-210,000	
PAVEMENT CLASSIFICATION NUMBER	N/A		N/A		N/A		N/A	
PAVEMENT SURFACE TREATMENT	GROOVED		GROOVED		GROOVED		GROOVED	
RUNWAY LIGHTING	HIRL		HIRL		MIRL		MIRL	
RUNWAY MARKING	PRECISION INSTRUMENT		PRECISION INSTRUMENT		NON-PRECISION INSTRUMENT		PRECISION INSTRUMENT	
	RWY 11	RWY 29	RWY 11	RWY 29	RWY 7	RWY 25	RWY 7	RWY 25
RUNWAY END COORDINATES LATITUDE	29°41'26.01"N	29°41'10.21"N	29°41'26.01"N	29°41'09.18"N	29°41'25.10"N	29°41'45.04"N	29°41'29.98"N	29°42'01.16"N
RUNWAY END COORDINATES LONGITUDE	82°16'50.16"W	82°15'27.03"W	82°16'50.16"W	82°15'21.54"W	82°16'56.61"W	82°16'15.37"W	82°16'46.51"W	82°15'42.05"W
RUNWAY END ELEVATION (MSL)	147.4'	105.1'	147.4'	104.6'	151.4'	130.2'	149.5'	128.0'
ROFZ WIDTH	400'	400'	400'	400'	250'	250'	400'	400'
ROFZ LENGTH BEYOND RUNWAY END	200'	200'	200'	200'	200'	200'	200'	200'
INNER APPROACH OFZ DIMENSIONS	N/A	2600'	2600'	2600'	N/A	N/A	2600'	N/A
RSA WIDTH[1]	500'	500'	500'	500'	150'	150'	500'	500'
RSA LENGTH BEYOND DEPARTURE END[1]	1000'	1000'	1000'	1000'	300'	300'	1000'	1000'
RSA LENGTH PRIOR TO THRESHOLD[1]	600'	600'	600'	600'	300'	300'	600'	600'
ROFA WIDTH[1]	800'	800'	800'	800'	500'	500'	800'	800'
ROFA LENGTH BEYOND RUNWAY END[1]	1000'	1000'	1000'	1000'	300'	300'	1000'	1000'
ROFA LENGTH PRIOR TO THRESHOLD[1]	600'	600'	600'	600'	300'	300'	600'	600'
APPROACH RPZ LENGTH[1]	1700'	2500'	2500'	2500'	1000'	1000'	1700'	2500'
APPROACH RPZ INNER WIDTH[1]	500'	1000'	1000'	1000'	500'	500'	500'	1000'
APPROACH RPZ OUTER WIDTH[1]	1010'	1750'	1750'	1750'	700'	700'	1010'	1750'
DEPARTURE RPZ LENGTH[1]	1700'	1700'	1700'	1700'	1000'	1000'	1700'	1700'
DEPARTURE RPZ INNER WIDTH[1]	500'	500'	500'	500'	500'	500'	500'	500'
DEPARTURE RPZ OUTER WIDTH[1]	1010'	1010'	1010'	1010'	700'	700'	1010'	1010'
DISPLACED THRESHOLD COORDINATES	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISPLACED THRESHOLD ELEVATION (MSL)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
INSTRUMENT APPROACHES	VOR/DME, RNAV	ILS/LOC, VOR/DME, RNAV	VOR/DME, RNAV	ILS/LOC, VOR/DME, RNAV	VOR/DME, RNAV	VOR, RNAV	VOR/DME, RNAV	ILS/LOC, VOR, RNAV
APPROACH TYPE	NPI	PIR	PIR	PIR	NPI	NPI	NPI	PIR
14 CFR PART 77 APPROACH CATEGORY	34:1	50:1	50:1	50:1	34:1	34:1	34:1	50:1
VISIBILITY MINIMUMS (MILE)	1	1/2	1/2	1/2	1			1/2
TYPE OF AERONAUTICAL SURVEY REQ.	NON-VERTICALLY GUIDED	VERTICALLY GUIDED	VERTICALLY GUIDED	VERTICALLY GUIDED	NON-VERTICALLY GUIDED	NON-VERTICALLY GUIDED	NON-VERTICALLY GUIDED	VERTICALLY GUIDED
40:1 OBSTACLE CLEARANCE SURFACE APPLICABILITY	YES	YES	YES	YES	NO	NO	YES	YES
THRESHOLD SITING CRITERIA APPROACH SLOPE	20:1	34:1	34:1	34:1	20:1	20:1	20:1	34:1
VISUAL AND INSTRUMENT NAVAIDS	VORTAC WIND CONE PAPI, REIL	VORTAC, MALSR WIND CONE PAPI,	VORTAC, MALSR WIND CONE PAPI, REIL	VORTAC, MALSR WIND CONE PAPI	WIND CONE PAPI	WIND CONE PAPI	MALSR WIND CONE PAPI	WIND CONE PAPI
OBJECTS PENETRATING TSS[3]	TREES (11)	NONE	TREES (11)	NONE	TREES (66)	TREE (1)	NONE	NONE
TOUCHDOWN ZONE ELEVATION (MSL)	147'	122'	147'	122'	151'	144'	151'	144'
PERCENT ALL WEATHER WIND COVERAGE (10.5 KNOTS)	85.23%	86.39%	85.23%	86.39%	85.73%	85.45%	85.73%	85.45%
PERCENT ALL WEATHER WIND COVERAGE (13 KNOTS)	86.38%	87.61%	86.38%	87.61%	86.50%	86.31%	86.50%	86.31%
PERCENT ALL WEATHER WIND COVERAGE (16 KNOTS)	87.40%	88.59%	87.40%	88.59%	87.14%	87.00%	87.14%	87.00%
PERCENT ALL WEATHER WIND COVERAGE (20 KNOTS)	87.57%	88.75%	87.57%	88.75%	87.25%	87.13%	87.25%	87.13%

RUNWAY DATA TABLE NOTES:
[1]DIMENSIONS LISTED ARE EQUAL TO FAA STANDARDS UNLESS OTHERWISE NOTED.
[2]ALL RUNWAYS MEET THE 5' LINE OF SIGHT REQUIREMENT
[3]OBJECTS PENETRATING THE TSS ARE BASED PART 77 AIRSPACE OBSTRUCTION SURVEY COMPLETED MY MARTINEZ GEOSPATIAL INC IN APRIL 2013. THERE MAY BE ADDITIONAL OBJECTS PENETRATING THE TSS FOR THE EXISITNG AND FUTURE CONDITIONS

WIND ROSES

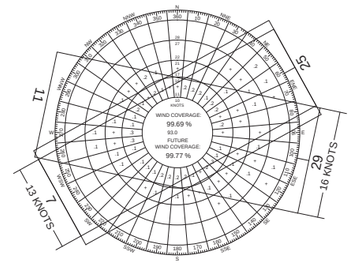
ALL-WEATHER WINDROSE



WIND COVERAGE

RUNWAY	CROSSWIND COMPONENT (KNOTS)			
	10.5 (12.0)	13.0 (15.0)	16.0 (18.4)	20.0 (23.0)
7/25	97.76%	98.96%	99.81%	99.96%
11/29	96.70%	98.46%	99.75%	99.96%
COMBINED	99.02%	99.69%	99.95%	100.00%

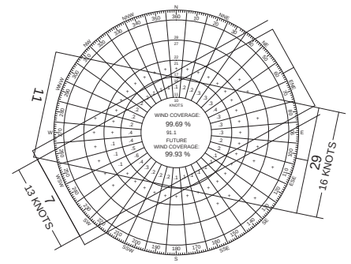
IFR WINDROSE



WIND COVERAGE

RUNWAY	CROSSWIND COMPONENT (KNOTS)			
	10.5 (12.0)	13.0 (15.0)	16.0 (18.4)	20.0 (23.0)
7/25	97.77%	97.99%	99.00%	99.63%
11/29	96.49%	97.80%	99.15%	99.69%
COMBINED	98.42%	99.23%	99.77%	100.00%

VFR WINDROSE



WIND COVERAGE

RUNWAY	CROSSWIND COMPONENT (KNOTS)			
	10.5 (12.0)	13.0 (15.0)	16.0 (18.4)	20.0 (23.0)
7/25	97.81%	99.01%	99.85%	99.97%
11/29	96.71%	95.50%	99.78%	99.98%
COMBINED	99.05%	99.71%	99.96%	100.00%

SOURCE: NOAA - NATIONAL CLIMATIC DATA CENTER PERIOD: 11/1/02 - 11/1/12
STATION: GAINESVILLE REGIONAL AIRPORT WBAN 12816

DECLARED DISTANCES

	RUNWAY 11-29				RUNWAY 7-25			
	EXISTING		FUTURE		EXISTING		FUTURE	
	RWY 11	RWY 29	RWY 11	RWY 29	RWY 7	RWY 25	RWY 7	RWY 25
TAKE-OFF RUN AVAILABLE (TORA)	7504'	7504'	8004'	8004'	4158'	4158'	6500'	6500'
TAKE-OFF DISTANCE AVAILABLE (TODA)	7504'	7504'	8004'	8004'	4158'	4158'	6500'	6500'
LANDING DISTANCE AVAILABLE (LDA)	7504'	7504'	8004'	8004'	4158'	4158'	6500'	6500'
ACCELERATE STOP DISTANCE AVAILABLE (ASDA)	7504'	7504'	8004'	8004'	4158'	4158'	6500'	6500'

AIRPORT DATA

	EXISTING	FUTURE
AIRPORT REFERENCE CODE	C-III-2400	C-III-2400
CRITICAL AIRCRAFT	B-727	B-737
CRITICAL AIRCRAFT APPROACH SPEED (KNOTS)	133	130
CRITICAL AIRCRAFT WINGSPAN	108'	130'
CRITICAL AIRCRAFT MAIN GEAR WIDTH	18.75'	18.75'
AIRPORT ELEVATION (MSL)	152.2'	152.2'
MEAN MAX. TEMPERATURE OF HOTTEST MONTH	90.9° F (JULY)	90.9° F (JULY)
AIRPORT REFERENCE POINT LATITUDE	29°41'24.16"N	29°41'29.04"N
AIRPORT REFERENCE POINT LONGITUDE	82°16'18.36"W	82°16'11.89"W
AIRPORT NAVAIDS	ILS/LOC, VOR/DME RNAV (GPS), PAPI, REIL, MALSR, WIND CONE/SEG CIRCLE, BEACON	ILS/LOC, VOR/DME RNAV (GPS), PAPI, REIL, MALSR, WIND CONE/SEG CIRCLE, BEACON
MISCELLANEOUS FACILITIES	ASOS (500'R) CRITICAL AREA	ASOS (500'R) CRITICAL AREA
AIRPORT MAGNETIC VARIATION & ANNUAL DECLINATION CHANGE	5.62° W 0.1° W PER YEAR NOAA (JUN. 2013)	5.62° W 0.1° W PER YEAR NOAA (JUN. 2013)
NPIAS SERVICE LEVEL	PRIMARY	PRIMARY

FAA APPROVED MODIFICATIONS TO STANDARDS*

DESCRIPTION OF MODIFICATION	REQUIRED STANDARD	DATE OF MOD. APPROVAL	AIRSPACE CASE NO.
1. NONE REQUIRED			
2.			
3.			
4.			

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE (ADO) PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

NOTES:

1. THE NAD83 COORDINATE SYSTEM WAS USED FOR ALL LATITUDE/LONGITUDE COORDINATES

2. THE NAVD88 VERTICAL CONTROL WAS USED FOR ALL ELEVATIONS

NOT FOR CONSTRUCTION

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2015 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

DATA SHEET

SHEET NUMBER

SHEET 2 OF 17

FAA SUBMITTAL

LEGEND	
DESCRIPTION	EXISTING
AIRPORT PROPERTY LINE	
AIRPORT INDUSTRIAL PARK	
ACTIVE AIRFIELD PAVEMENT	
PAVED ROADS & PARKING	
FENCE	X X
GATE LOCATION (# OR UNKNOWN)	
BUILDINGS – ON AIRPORT PROPERTY	
BUILDINGS – OFF AIRPORT PROPERTY	
OBSTACLE FREE ZONE	OFZ
RUNWAY SAFETY AREA	RSA
RUNWAY OBJECT FREE AREA	OFA
TAXIWAY OBJECT FREE AREA	TOFA
RUNWAY VISIBILITY ZONE	RVZ
BUILDING RESTRICTION LINE	BRL 35°
ONE ENGINE INOPERATIVE SURFACE	OEI
RUNWAY PROTECTION ZONE	
STORM DRAINAGE CHANNEL	
TREES	
APRON TIE DOWN	
PAPI	
BEACON	
REIL	

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE (ADO) PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

TRUE N / MAG N

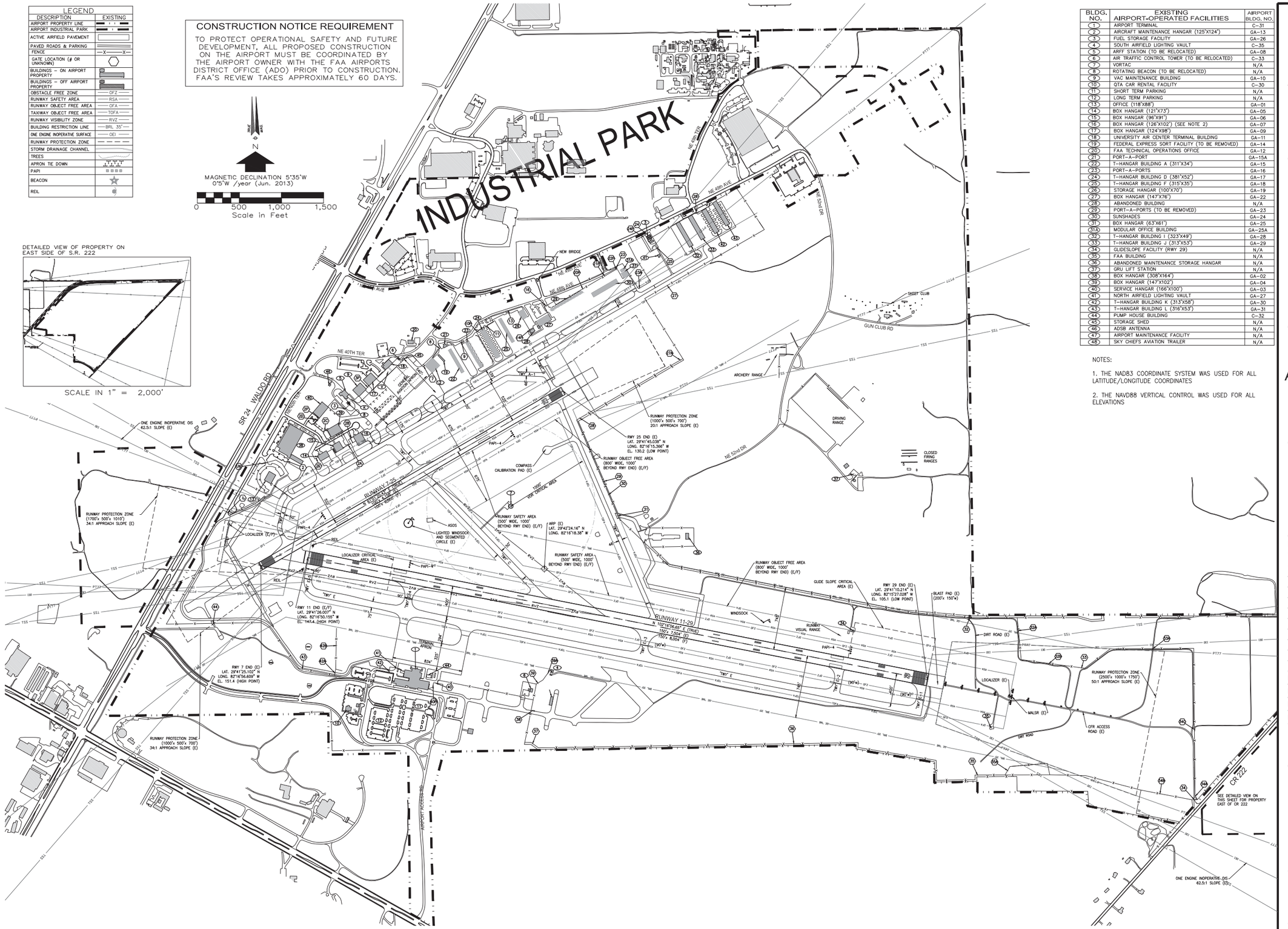
N

MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

0 500 1,000 1,500
Scale in Feet

DETAILED VIEW OF PROPERTY ON EAST SIDE OF S.R. 222

SCALE IN 1" = 2,000'



BLDG. NO.	EXISTING AIRPORT-OPERATED FACILITIES	AIRPORT BLDG. NO.
1	AIRPORT TERMINAL	C–31
2	AIRCRAFT MAINTENANCE HANGAR (125'X124')	GA–13
3	FUEL STORAGE FACILITY	GA–26
4	SOUTH AIRFIELD LIGHTING VAULT	C–35
5	ARFF STATION (TO BE RELOCATED)	GA–08
6	AIR TRAFFIC CONTROL TOWER (TO BE RELOCATED)	C–33
7	VORTAC	N/A
8	ROTATING BEACON (TO BE RELOCATED)	N/A
9	VAC MAINTENANCE BUILDING	GA–10
10	QTA CAR RENTAL FACILITY	C–30
11	SHORT TERM PARKING	N/A
12	LONG TERM PARKING	N/A
13	OFFICE (118'X88')	GA–01
14	BOX HANGAR (121'X73')	GA–05
15	BOX HANGAR (96'X91')	GA–06
16	BOX HANGAR (126'X102') (SEE NOTE 2)	GA–07
17	BOX HANGAR (124'X98')	GA–09
18	UNIVERSITY AIR CENTER TERMINAL BUILDING	GA–11
19	FEDERAL EXPRESS SORT FACILITY (TO BE REMOVED)	GA–14
20	FAA TECHNICAL OPERATIONS OFFICE	GA–12
21	PORT–A–PORT	GA–15A
22	T–HANGAR BUILDING A (311'X34')	GA–15
23	PORT–A–PORTS	GA–16
24	T–HANGAR BUILDING D (381'X52')	GA–17
25	T–HANGAR BUILDING F (315'X35')	GA–18
26	STORAGE HANGAR (100'X70')	GA–19
27	BOX HANGAR (147'X76')	GA–22
28	ABANDONED BUILDING	N/A
29	PORT–A–PORTS (TO BE REMOVED)	GA–23
30	SUNSHADES	GA–24
31	BOX HANGAR (63'X61')	GA–25
31A	MODULAR OFFICE BUILDING	GA–25A
32	T–HANGAR BUILDING I (323'X49')	GA–28
33	T–HANGAR BUILDING J (313'X53')	GA–29
34	GLIDESLOPE FACILITY (RWY 29)	N/A
35	FAA BUILDING	N/A
36	ABANDONED MAINTENANCE STORAGE HANGAR	N/A
37	GRU LIFT STATION	N/A
38	BOX HANGAR (308'X164')	GA–02
39	BOX HANGAR (147'X102')	GA–04
40	SERVICE HANGAR (166'X100')	GA–03
41	NORTH AIRFIELD LIGHTING VAULT	GA–27
42	T–HANGAR BUILDING K (313'X58')	GA–30
43	T–HANGAR BUILDING L (316'X53')	GA–31
44	PUMP HOUSE BUILDING	C–32
45	STORAGE SHED	N/A
46	ADSB ANTENNA	N/A
47	AIRPORT MAINTENANCE FACILITY	N/A
48	SKY CHIEFS AVIATION TRAILER	N/A

NOTES:

1. THE NAD83 COORDINATE SYSTEM WAS USED FOR ALL LATITUDE/LONGITUDE COORDINATES

2. THE NAVD88 VERTICAL CONTROL WAS USED FOR ALL ELEVATIONS

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_03_FLP.dwg

Plotted by: Morse, Ryan

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2015 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

FACILITIES LAYOUT PLAN

SHEET NUMBER

SHEET 3 OF 17

FAA SUBMITTAL

LEGEND		
DESCRIPTION	EXISTING	FUTURE
LAND ACQUISITION HATCH	N/A	
AIRPORT PROPERTY LINE		
AIRPORT INDUSTRIAL PARK		N/A
FUTURE AVIATION RELATED DEVELOPMENT	N/A	
FUTURE NON- AVIATION RELATED DEVELOPMENT	N/A	
ACTIVE AIRFIELD PAVEMENT		
PAVEMENT DEMOLITION	N/A	
BUILDING DEMOLITION	N/A	
PAVED ROADS & PARKING		
FENCE	—X—X—	—XX—XX—
GATE LOCATION (# OR UNKNOWN)		N/A
DESCRIPTION	EXISTING	FUTURE
BUILDINGS – ON AIRPORT PROPERTY		
BUILDINGS – OFF AIRPORT PROPERTY		N/A
OBSTACLE FREE ZONE	OFZ	F-OFZ
RUNWAY SAFETY AREA	RSA	F-RSA
RUNWAY OBJECT FREE AREA	OFA	F-OFA
TAXIWAY OBJECT FREE AREA	TOFA	F-TOFA
RUNWAY VISIBILITY ZONE	RVZ	F-RVZ
BUILDING RESTRICTION LINE	BRL 35'	F-BRL 35'
ONE ENGINE INOPERATIVE SURFACE	OIS	F-OIS
RUNWAY PROTECTION ZONE		
STORM DRAINAGE CHANNEL		
TREES		N/A
APRON TIE DOWN		N/A
PAPI		
BEACON		
REIL		

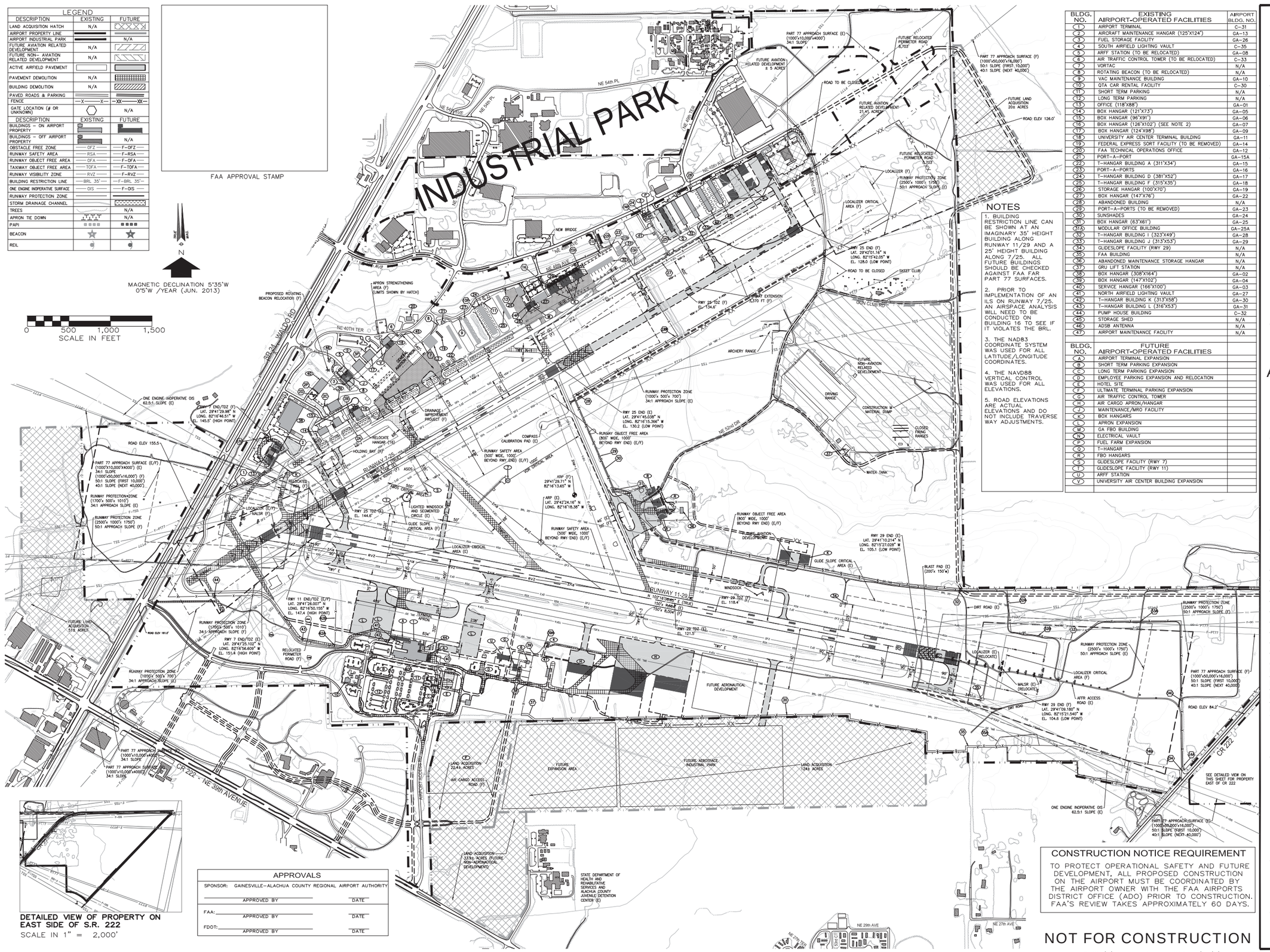
FAA APPROVAL STAMP

TRUE N / MAG N

N

MAGNETIC DECLINATION 5°35'W
0°5'W /YEAR (JUN. 2013)

0 500 1,000 1,500
SCALE IN FEET



DETAILED VIEW OF PROPERTY ON EAST SIDE OF S.R. 222
SCALE IN 1" = 2,000'

APPROVALS		
SPONSOR: GAINESVILLE–ALACHUA COUNTY REGIONAL AIRPORT AUTHORITY		
	APPROVED BY	DATE
FAA:	APPROVED BY	DATE
FDOT:	APPROVED BY	DATE

BLDG. NO.	EXISTING AIRPORT-OPERATED FACILITIES	AIRPORT BLDG. NO.
1	AIRPORT TERMINAL	C–31
2	AIRCRAFT MAINTENANCE HANGAR (125'X124')	GA–13
3	FUEL STORAGE FACILITY	GA–26
4	SOUTH AIRFIELD LIGHTING VAULT	C–35
5	ARFF STATION (TO BE RELOCATED)	GA–08
6	AIR TRAFFIC CONTROL TOWER (TO BE RELOCATED)	C–33
7	VORTAC	N/A
8	ROTATING BEACON (TO BE RELOCATED)	N/A
9	VAC MAINTENANCE BUILDING	GA–10
10	QTA CAR RENTAL FACILITY	C–30
11	SHORT TERM PARKING	N/A
12	LONG TERM PARKING	N/A
13	OFFICE (118'X88')	GA–01
14	BOX HANGAR (121'X73')	GA–05
15	BOX HANGAR (96'X91')	GA–06
16	BOX HANGAR (126'X102') (SEE NOTE 2)	GA–07
17	BOX HANGAR (124'X98')	GA–09
18	UNIVERSITY AIR CENTER TERMINAL BUILDING	GA–11
19	FEDERAL EXPRESS SORT FACILITY (TO BE REMOVED)	GA–14
20	FAA TECHNICAL OPERATIONS OFFICE	GA–12
21	PORT–A–PORT	GA–15A
22	T–HANGAR BUILDING A (311'X34')	GA–15
23	PORT–A–PORTS	GA–16
24	T–HANGAR BUILDING D (381'X52')	GA–17
25	T–HANGAR BUILDING F (315'X35')	GA–18
26	STORAGE HANGAR (100'X70')	GA–19
27	BOX HANGAR (147'X76')	GA–22
28	ABANDONED BUILDING	N/A
29	PORT–A–PORTS (TO BE REMOVED)	GA–23
30	SUNSHADES	GA–24
31	BOX HANGAR (63'X61')	GA–25
32	MODULAR OFFICE BUILDING	GA–25A
33	T–HANGAR BUILDING I (323'X49')	GA–28
34	T–HANGAR BUILDING J (313'X53')	GA–29
35	GLIDESLOPE FACILITY (RWY 29)	N/A
36	FAA BUILDING	N/A
37	ABANDONED MAINTENANCE STORAGE HANGAR	N/A
38	GRU LIFT STATION	N/A
39	BOX HANGAR (308'X164')	GA–02
40	BOX HANGAR (147'X102')	GA–04
41	SERVICE HANGAR (166'X100')	GA–03
42	NORTH AIRFIELD LIGHTING VAULT	GA–27
43	T–HANGAR BUILDING K (313'X58')	GA–30
44	T–HANGAR BUILDING L (316'X53')	GA–31
45	PUMP HOUSE BUILDING	C–32
46	STORAGE SHED	N/A
47	ADSB ANTENNA	N/A
48	AIRPORT MAINTENANCE FACILITY	N/A

BLDG. NO.	FUTURE AIRPORT-OPERATED FACILITIES
A	AIRPORT TERMINAL EXPANSION
B	SHORT TERM PARKING EXPANSION
C	LONG TERM PARKING EXPANSION
D	EMPLOYEE PARKING EXPANSION AND RELOCATION
E	HOTEL SITE
F	ULTIMATE TERMINAL PARKING EXPANSION
G	AIR TRAFFIC CONTROL TOWER
H	AIR CARGO APRON/HANGAR
J	MAINTENANCE/MRO FACILITY
K	BOX HANGARS
L	APRON EXPANSION
M	GA FBO BUILDING
N	ELECTRICAL VAULT
P	FUEL FARM EXPANSION
Q	T–HANGAR
R	FBO HANGARS
S	GLIDESLOPE FACILITY (RWY 7)
T	GLIDESLOPE FACILITY (RWY 11)
U	ARFF STATION
V	UNIVERSITY AIR CENTER BUILDING EXPANSION

NOTES

1. BUILDING RESTRICTION LINE CAN BE SHOWN AT AN IMAGINARY 35' HEIGHT BUILDING ALONG RUNWAY 11/29 AND A 25' HEIGHT BUILDING ALONG 7/25. ALL FUTURE BUILDINGS SHOULD BE CHECKED AGAINST FAA FAR PART 77 SURFACES.
2. PRIOR TO IMPLEMENTATION OF AN ILS ON RUNWAY 7/25, AN AIRSPACE ANALYSIS WILL NEED TO BE CONDUCTED ON BUILDING 16 TO SEE IF IT VIOLATES THE BRL.
3. THE NAD83 COORDINATE SYSTEM WAS USED FOR ALL LATITUDE/LONGITUDE COORDINATES.
4. THE NAVD88 VERTICAL CONTROL WAS USED FOR ALL ELEVATIONS.
5. ROAD ELEVATIONS ARE ACTUAL ELEVATIONS AND DO NOT INCLUDE TRAVERSE WAY ADJUSTMENTS.

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE (ADO) PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

NOT FOR CONSTRUCTION

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS		
NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2015 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

AIRPORT LAYOUT PLAN

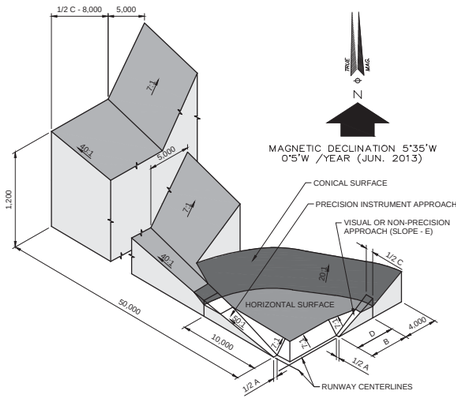
SHEET NUMBER

SHEET 4 OF 17

FAA SUBMITTAL

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_04_ALP.dwg

Plotted by: Morse, Ryan



ISOMETRIC VIEW

NOT TO SCALE

MAGNETIC DECLINATION 5°35'W
0°5'W /YEAR (JUN. 2013)

MATCH LINE SHEET 6 (WEST)

MATCH LINE SHEET 6 (EAST)

7:1 TRANSITIONAL SURFACE 5,000'

20:1 CONICAL SURFACE

HORIZONTAL SURFACE (ELEV. = 302')

50:1 APPROACH SURFACE

40:1 APPROACH SURFACE

34:1 APPROACH SURFACE

PRIMARY SURFACE (ELEV. VARIES)

6,500' RUNWAY 7-25

8,001' RUNWAY 11-29

10,000'

40,000'

NOTES:

1. REFER TO THE INNER PORTION OF THE APPROACH SURFACE PLAN VIEW DETAILS FOR CLOSE-IN OBSTRUCTIONS (SHEETS 7-10).

2. CITY OF GAINESVILLE AND ALACHUA COUNTY HAS ADOPTED HEIGHT RESTRICTION ZONING. SEE LOCAL LAND DEVELOPMENT CODE FOR ADDITIONAL DETAILS

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_05_AIRSPACE1.dwg

Plotted by: Morse, Ryan

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

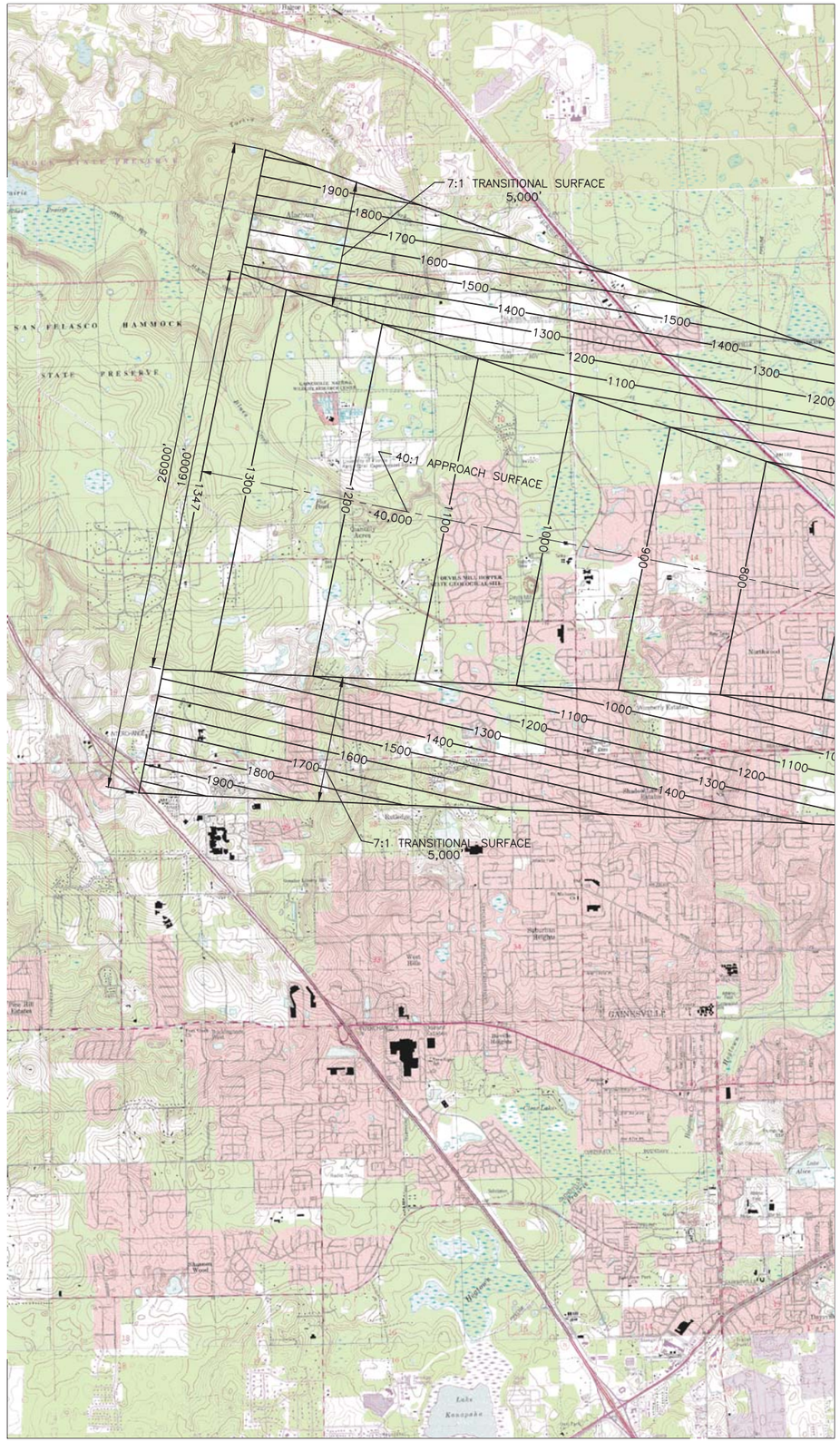
SHEET TITLE

AIRSPACE DRAWING (1 OF 2)

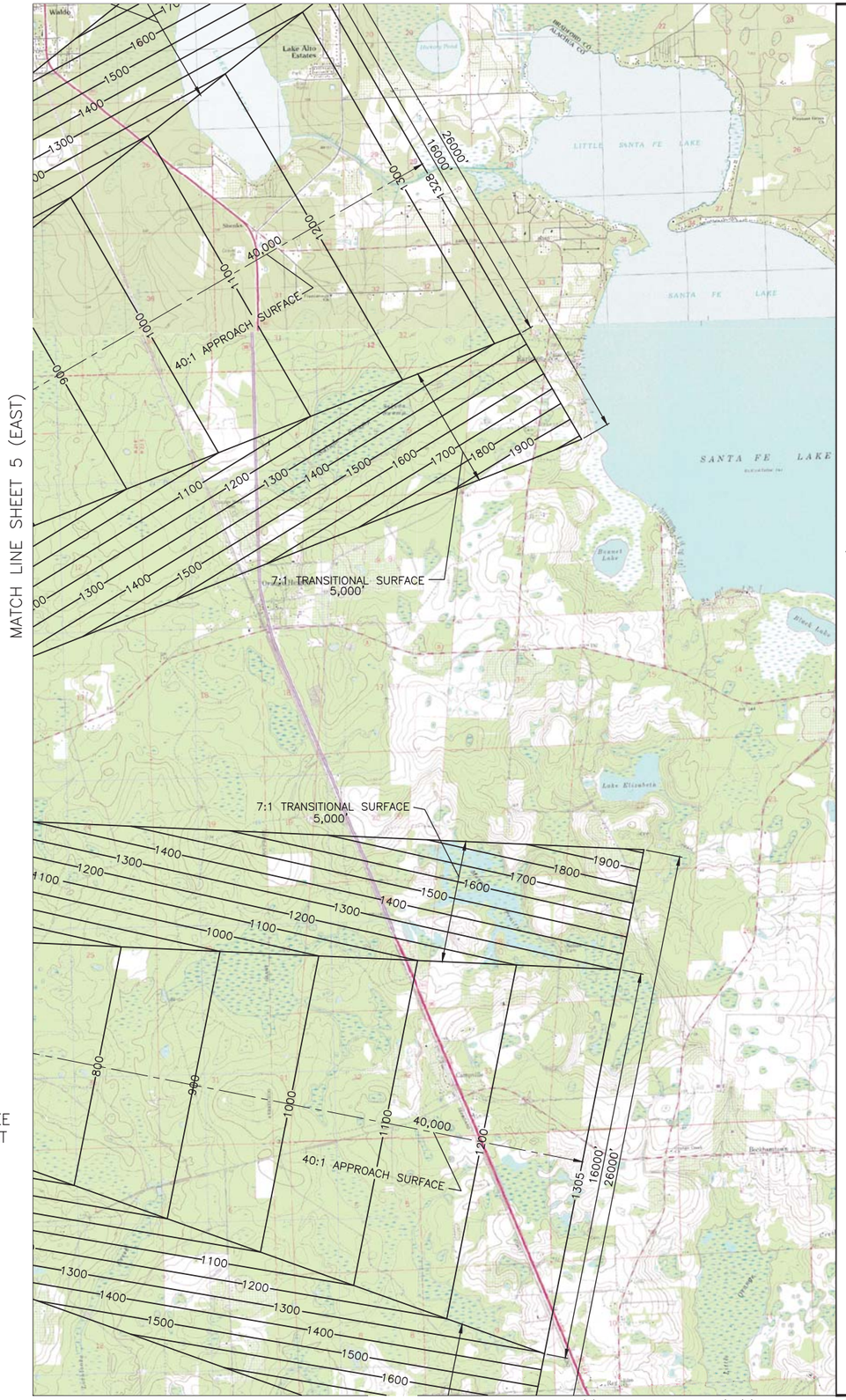
SHEET NUMBER

SHEET 5 OF 17

FAA SUBMITTAL



MATCH LINE SHEET 5 (WEST)



NOTE:
CITY OF GAINESVILLE AND ALACHUA COUNTY HAS ADOPTED HEIGHT RESTRICTION ZONING. SEE LOCAL LAND DEVELOPMENT CODE FOR ADDITIONAL DETAILS



MAGNETIC DECLINATION 5°35'W
0°5'W /YEAR (JUN. 2013)

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

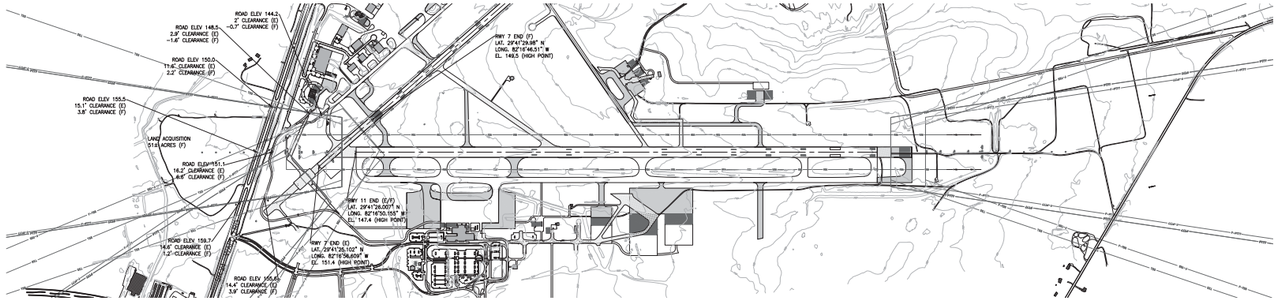
SHEET TITLE

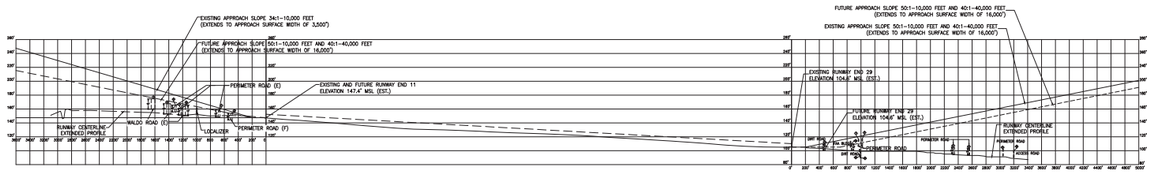
AIRSPACE DRAWING (2 OF 2)

SHEET NUMBER

SHEET 6 OF 17

FAA SUBMITTAL





OBSTRUCTION CHART (EXISTING)

OBJECT DESCRIPTION	OBJECT NUMBER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
GRD	1	148'	NPI	34:1 APPROACH	0'	NONE
GRD	2	148'	NPI	34:1 APPROACH	0'	NONE
GRD	3	148'	NPI	34:1 APPROACH	0'	NONE
GRD	4	148'	NPI	34:1 APPROACH	0'	NONE
POST GUARD	5	149'	NPI	34:1 APPROACH	1'	NONE
TREE	18	230'	NPI	34:1 APPROACH	9'	PURCHASE/REMOVE
TREE	19	222'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	20	222'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	21	229'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	22	223'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	23	225'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE
TREE	24	226'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	25	223'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	26	232'	NPI	34:1 APPROACH	9'	PURCHASE/REMOVE
TREE	27	230'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	31	232'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE

TRAVERSE WAYS (EXISTING & FUTURE)

ROAD NAME	ROAD NUMBER	ROAD ELEVATION	OBSTRUCTED PART 77 SURFACE	ROAD CLEARANCE OR PENETRATION (E/F)*	PROPOSED ROAD DISPOSITION
PERIMETER RD	1	148.5'	50:1 Approach (F)	2.9'/–1.6'	NONE
PERIMETER RD (F)	2	144.2'	50:1 Approach (F)	2'/–0.7'	NONE
WALDO RD	3	159.7'	NONE	14.6'/7.2'	
WALDO RD	4	150.0'	NONE	11.6'/2.2'	
WALDO RD	5	155.5'	NONE	15.1'/3.8'	
PERIMETER RD	6	155.6'	NONE	14.4'/3.9'	
PERIMETER RD	7	151.1'	NONE	16.2'/6.6'	

*(+) DENOTES A CLEARANCE, (–) DENOTES A PENETRATION

LEGEND

7 OBSTRUCTION TO APPROACH SURFACE

7 TRAVERSE WAY TO APPROACH SURFACE

VERTICAL

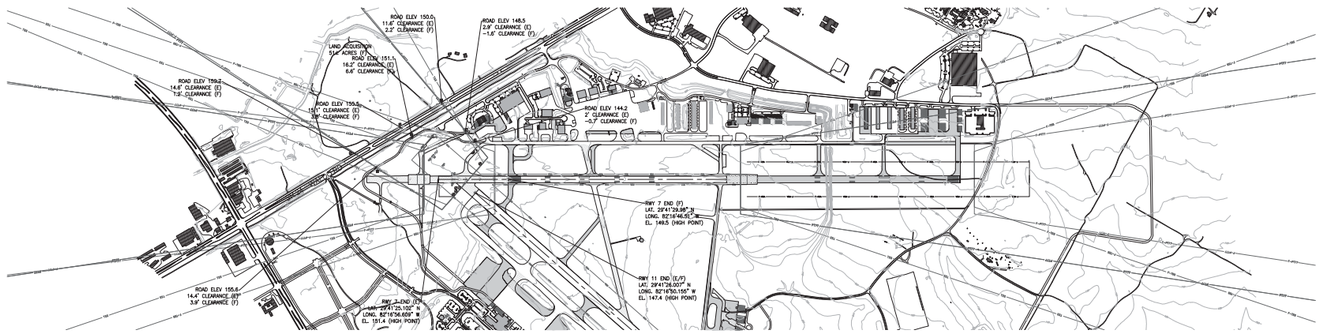
0 100 200 300

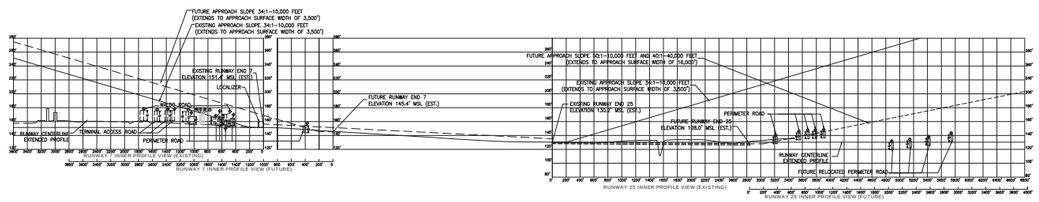
Scale in Feet: 1" = 100'

HORIZONTAL

0 1000 2000 3000

Scale in Feet: 1" = 1000'





OBSTRUCTION CHART (EXISTING)

OBJECT DESCRIPTION	OBJECT NUMBER	OBJECT ELEVATION	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
GRD	1	148'	NPI	34:1 APPROACH	0'	NONE
GRD	2	148'	NPI	34:1 APPROACH	0'	NONE
GRD	3	148'	NPI	34:1 APPROACH	0'	NONE
GRD	4	148'	NPI	34:1 APPROACH	0'	NONE
POST GUARD	5	149'	NPI	34:1 APPROACH	1'	NONE
TREE	18	230'	NPI	34:1 APPROACH	9'	PURCHASE/REMOVE
TREE	19	222'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	20	222'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	21	229'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	22	223'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	23	225'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE
TREE	24	226'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	25	223'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	26	232'	NPI	34:1 APPROACH	9'	PURCHASE/REMOVE
TREE	27	230'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	31	232'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE

TRAVERSE WAYS (EXISTING & FUTURE)

ROAD NAME	ROAD NUMBER	ROAD ELEVATION	OBSTRUCTED PART 77 SURFACE	ROAD CLEARANCE OR PENETRATION (E/F)*	PROPOSED ROAD DISPOSITION
PERIMETER RD	1	148.5'	50:1 Approach (F)	2.9'/–1.6'	NONE
PERIMETER RD (F)	2	144.2'	50:1 Approach (F)	2'/–0.7'	NONE
WALDO RD	3	159.7'	NONE	14.6'/7.2'	
WALDO RD	4	150.0'	NONE	11.6'/2.2'	
WALDO RD	5	155.5'	NONE	15.1'/3.8'	
PERIMETER RD	6	155.6'	NONE	14.4'/3.9'	
PERIMETER RD	7	151.1'	NONE	16.2'/6.6'	

*(+) DENOTES A CLEARANCE, (–) DENOTES A PENETRATION

LEGEND

7 OBSTRUCTION TO APPROACH SURFACE

7 TRAVERSE WAY TO APPROACH SURFACE



VERTICAL

0 100 200 300

Scale in Feet: 1" = 100'

HORIZONTAL

0 1000 2000 3000

Scale in Feet: 1" = 1000'

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_07_AIRSPACE_PROFILE.dwg

Plotted by: Morse, Ryan

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015

REVIEWED BY: GL

DRAWN BY: RJM

DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

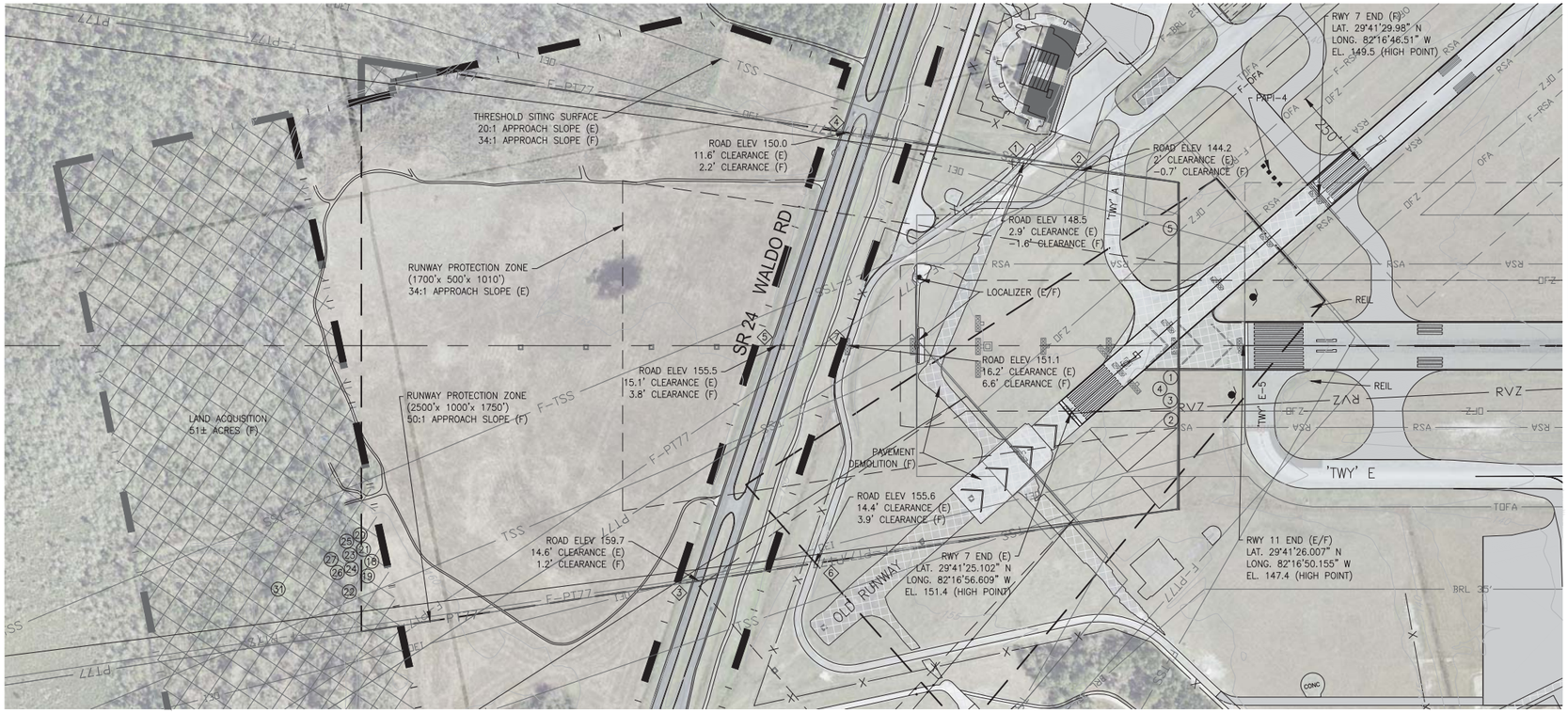
SHEET TITLE

AIRSPACE APPROACH PROFILES

SHEET NUMBER

SHEET 7 OF 17

FAA SUBMITTAL



OBSTRUCTION CHART (EXISTING)

OBJECT DESCRIPTION	OBJECT NUMBER	OBJECT ELEVATION MSL	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
GRD	1	148'	NPI	34:1 APPROACH	0'	NONE
GRD	2	148'	NPI	34:1 APPROACH	0'	NONE
GRD	3	148'	NPI	34:1 APPROACH	0'	NONE
GRD	4	148'	NPI	34:1 APPROACH	0'	NONE
POST GUARD	5	149'	NPI	34:1 APPROACH	1'	NONE
TREE	18	230'	NPI	34:1 APPROACH	9'	PURCHASE/REMOVE
TREE	19	222'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	20	222'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	21	229'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	22	223'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	23	225'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE
TREE	24	226'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	25	223'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	26	232'	NPI	34:1 APPROACH	9'	PURCHASE/REMOVE
TREE	27	230'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	31	232'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE

TRAVERSE WAYS (EXISTING & FUTURE)

ROAD NAME	ROAD NUMBER	ROAD ELEVATION MSL	OBSTRUCTED PART 77 SURFACE	ROAD CLEARANCE OR PENETRATION (E/F)*	PROPOSED ROAD DISPOSITION
PERIMETER RD	1	148.5'	50:1 Approach (F)	2.9'/-1.6'	NONE
PERIMETER RD (F)	2	144.2'	50:1 Approach (F)	2.7'/-0.7'	NONE
WALDO RD	3	159.7'	NONE	14.6'/1.2'	
WALDO RD	4	150.0'	NONE	11.6'/2.2'	
WALDO RD	5	155.5'	NONE	15.1'/3.8'	
PERIMETER RD	6	155.6'	NONE	14.4'/3.9'	
PERIMETER RD	7	151.1'	NONE	16.2'/6.6'	

*(+) DENOTES A CLEARANCE, (-) DENOTES A PENETRATION

LEGEND

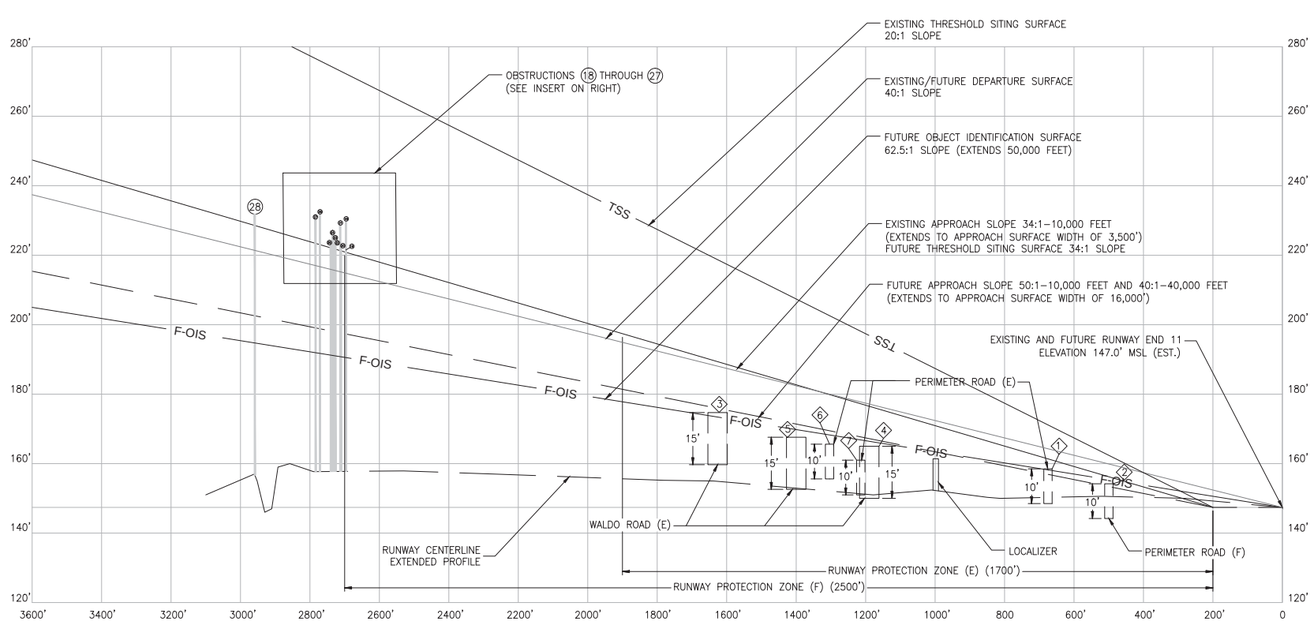
7 OBSTRUCTION TO APPROACH SURFACE

7 TRAVERSE WAY TO APPROACH SURFACE

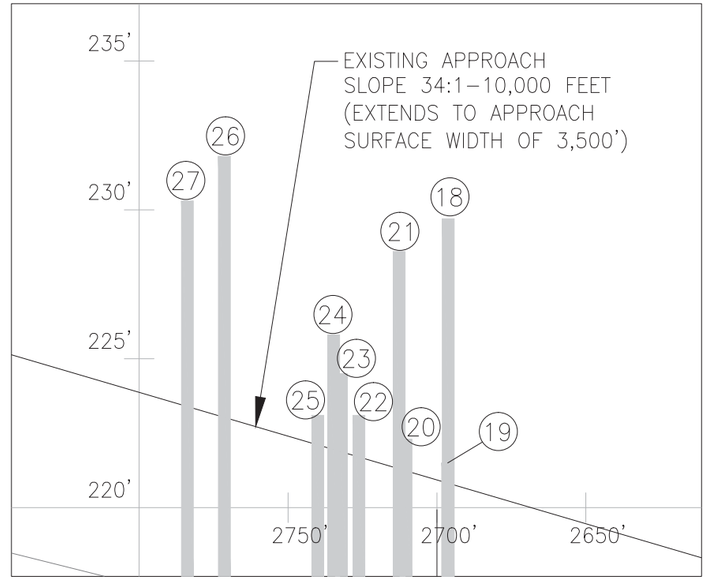
MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

VERTICAL
0 20 40 60
Scale in Feet: 1" = 20'

HORIZONTAL
0 200 400 600
Scale in Feet: 1" = 200'



RUNWAY 11 INNER PROFILE VIEW (EXISTING AND FUTURE)



EXPANDED VIEW FROM PROFILE ON LEFT

NOTE: OBSTRUCTION SURVEY COMPLETED BY MARTINEZ GEOSPATIAL INC IN APRIL 2013

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_08_RPZ11.dwg

Plotted by: Morse, Ryan

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

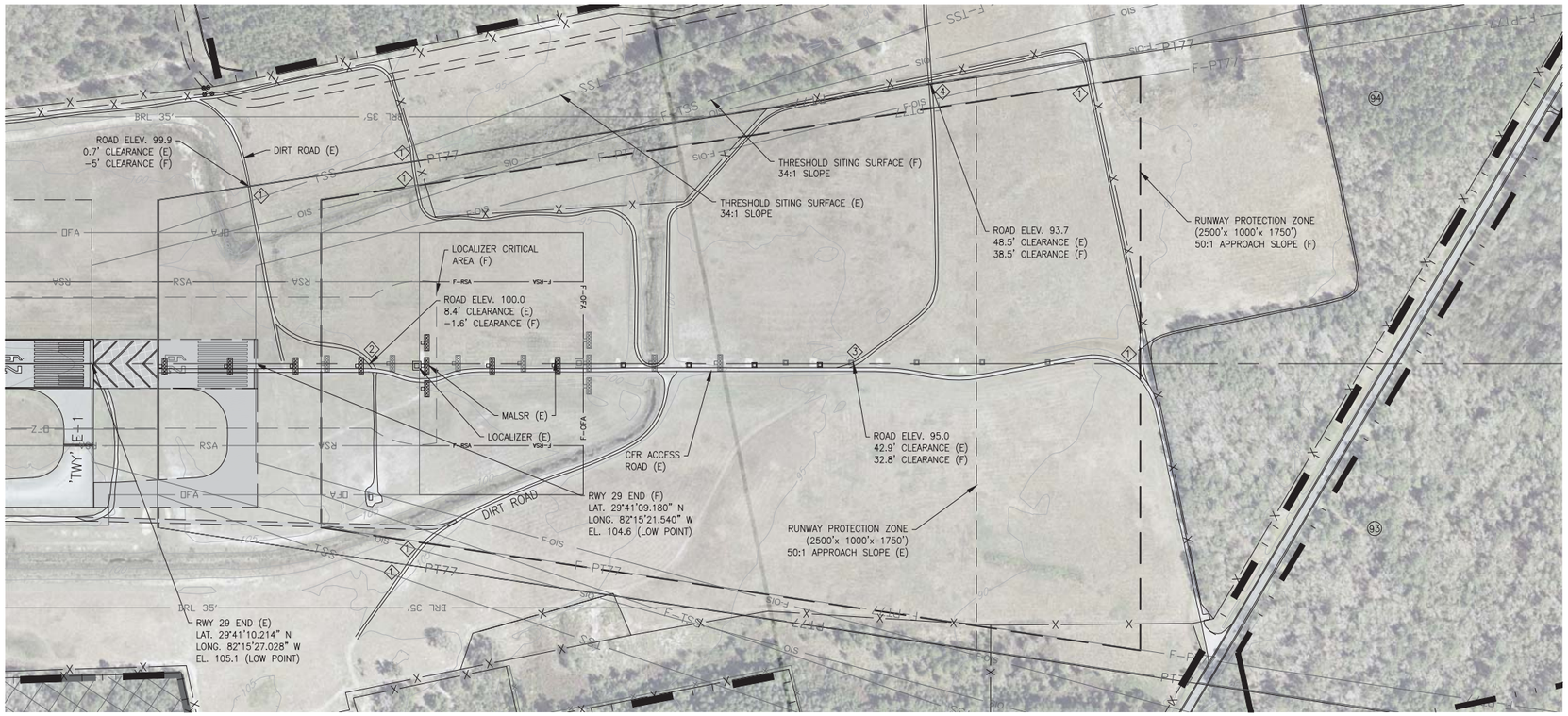
SHEET TITLE

RUNWAY APPROACH PROFILE AND RPZ RUNWAY 11

SHEET NUMBER

SHEET 8 OF 17

FAA SUBMITTAL



OBSTRUCTION CHART (EXISTING)

OBJECT DESCRIPTION	OBJECT NUMBER	OBJECT ELEVATION MSL	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
TREE	93	180'	NPI	50:1 APPROACH	0'	REMOVE
TREE	94	186'	NPI	50:1 APPROACH	6'	REMOVE

TRAVERSE WAYS (EXISTING & FUTURE)

ROAD NAME	ROAD NUMBER	ROAD ELEVATION MSL	OBSTRUCTED PART 77 SURFACE	ROAD CLEARANCE OR PENETRATION (E/F)*	PROPOSED ROAD DISPOSITION
PERIMETER RD	1	106.5'	50:1 APPROACH (F)	3.8'/-6.2'	NONE
PERIMETER RD	2	107.1'	50:1 APPROACH (F)	4.2'/-5.8'	NONE
DIRT RD	3	99.9'	50:1 APPROACH (F)	0.3'/-5.0'	NONE
DIRT RD	4	100.0'	50:1 APPROACH (F)	8.4'/-1.6'	NONE
DIRT RD	6	90.0'	NONE	20.8'/10.8'	
DIRT RD	5	92.0'	NONE	18.6'/8.6'	
PERIMETER RD	7	95.0'	NONE	42.9'/32.9'	
PERIMETER RD	8	93.7'	NONE	48.5'/38.5'	
PERIMETER RD	9	92.4'	NONE	59.5'/49.5'	
ACCESS RD	10	90.5'	NONE	64.5'/54.5'	

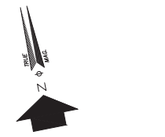
*(+) DENOTES A CLEARANCE, (-) DENOTES A PENETRATION

NOTE: OBSTRUCTION SURVEY COMPLETED BY MARTINEZ GEOSPATIAL INC IN APRIL 2013

LEGEND

7 OBSTRUCTION TO APPROACH SURFACE

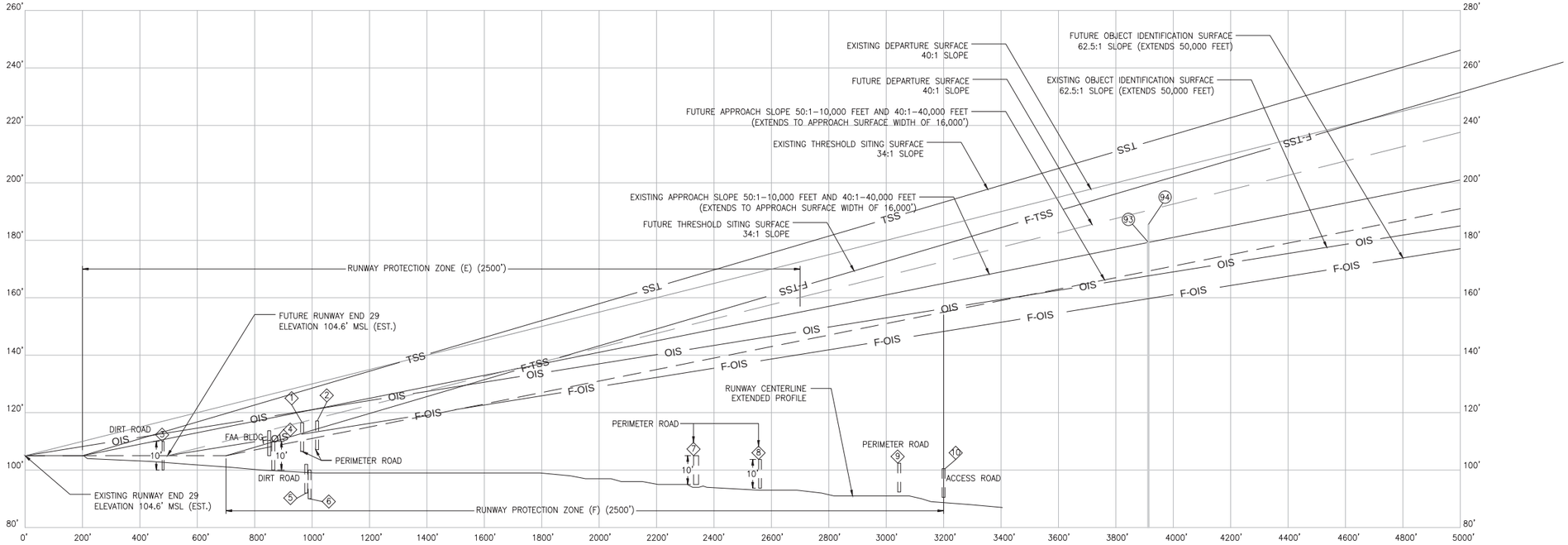
7 TRAVERSE WAY TO APPROACH SURFACE



MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

VERTICAL
0 20 40 60
Scale in Feet: 1" = 20'

HORIZONTAL
0 200 400 600
Scale in Feet: 1" = 200'



RUNWAY 29 INNER PROFILE VIEW

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_09_RPZ29.dwg

Plotted by: Morse, Ryan

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

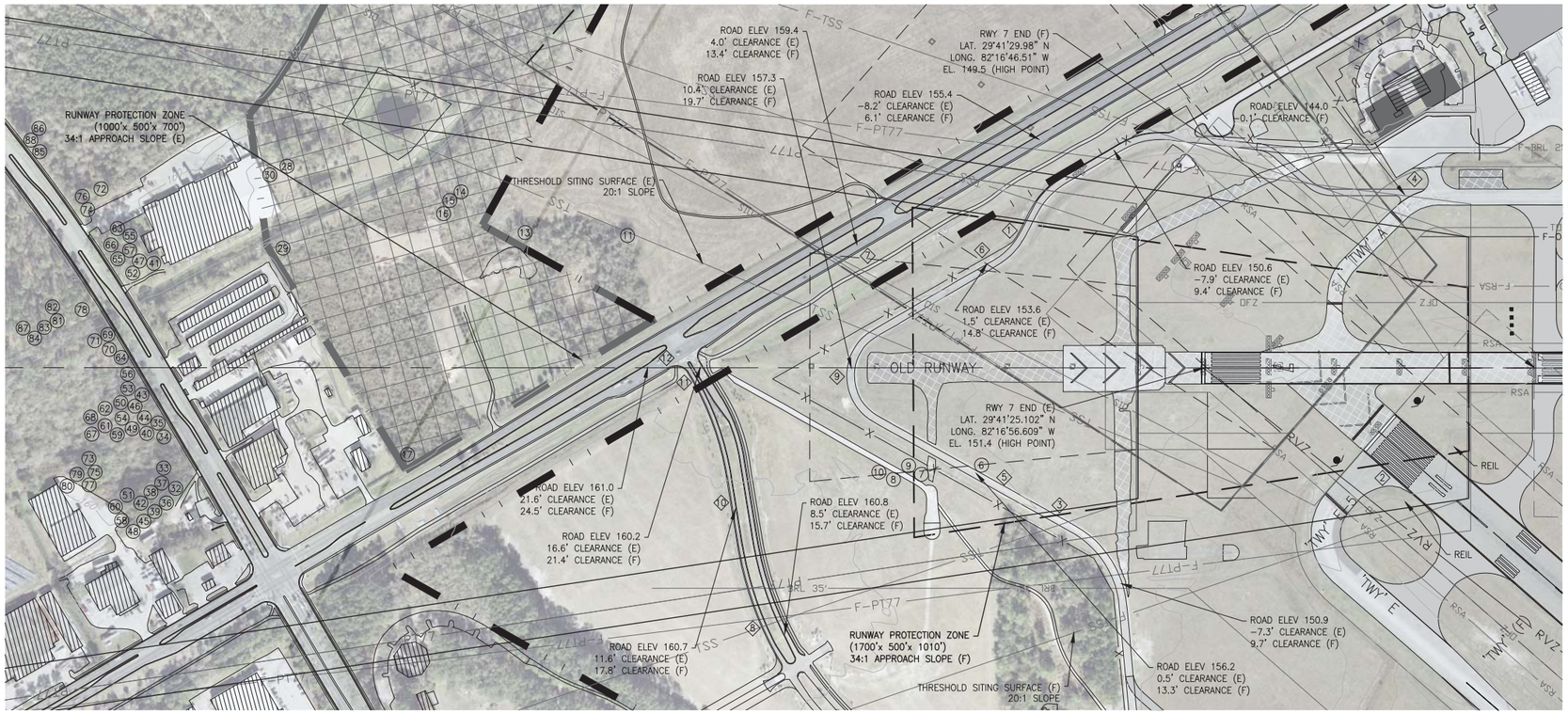
SHEET TITLE

RUNWAY APPROACH PROFILE AND RPZ RUNWAY 29

SHEET NUMBER

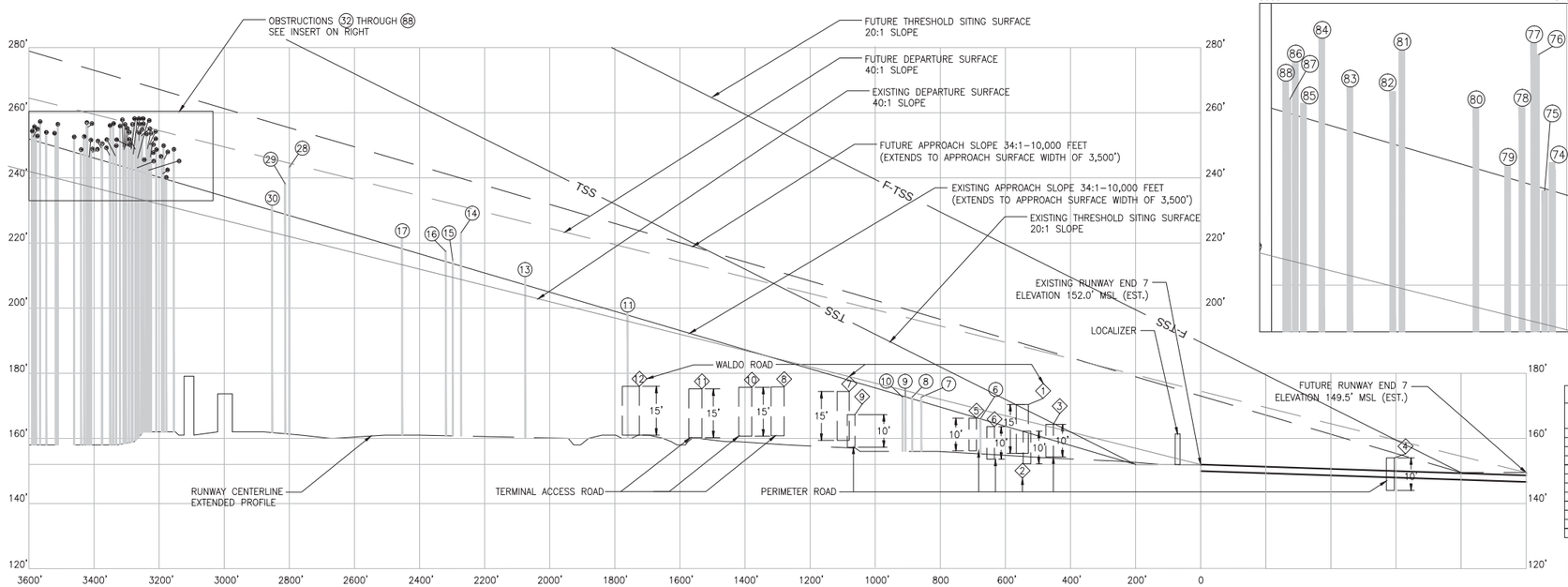
SHEET 9 OF 17

FAA SUBMITTAL



OBSTRUCTION CHART (EXISTING)

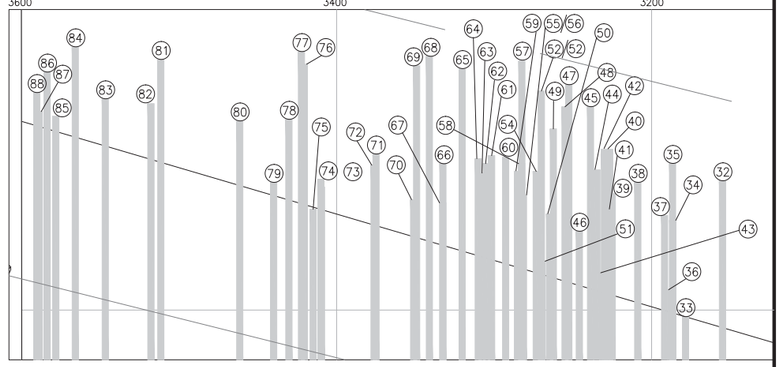
OBJECT DESCRIPTION	OBJECT NUMBER	OBJECT ELEVATION MSL	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
RD	6	166'	NPI	34:1 APPROACH	1'	NONE
RD	7	173'	NPI	34:1 APPROACH	2'	NONE
RD	8	173'	NPI	34:1 APPROACH	1'	NONE
RD	9	173'	NPI	34:1 APPROACH	1'	NONE
RD	10	173'	NPI	34:1 APPROACH	0'	NONE
TREE	11	199'	NPI	34:1 APPROACH	1'	REMOVE
TREE	13	210'	NPI	34:1 APPROACH	3'	REMOVE
TREE	14	223'	NPI	34:1 APPROACH	11'	PURCHASE/REMOVE
TREE	15	215'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	16	217'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	17	222'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	28	243'	NPI	34:1 APPROACH	15'	PURCHASE/REMOVE
TREE	29	238'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	30	232'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	32	248'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	33	240'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	34	246'	NPI	34:1 APPROACH	6'	PURCHASE/REMOVE
TREE	35	249'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	36	241'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	37	246'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	38	248'	NPI	34:1 APPROACH	8'	PURCHASE/REMOVE
TREE	39	247'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	40	250'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	41	246'	NPI	34:1 APPROACH	6'	PURCHASE/REMOVE
TREE	42	250'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	43	242'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	44	249'	NPI	34:1 APPROACH	8'	PURCHASE/REMOVE
TREE	45	253'	NPI	34:1 APPROACH	12'	PURCHASE/REMOVE
TREE	46	245'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	47	254'	NPI	34:1 APPROACH	13'	PURCHASE/REMOVE
TREE	48	253'	NPI	34:1 APPROACH	12'	PURCHASE/REMOVE
TREE	49	252'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	50	246'	NPI	34:1 APPROACH	5'	PURCHASE/REMOVE
TREE	51	243'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	52	254'	NPI	34:1 APPROACH	12'	PURCHASE/REMOVE
TREE	53	249'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	54	249'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	55	247'	NPI	34:1 APPROACH	5'	PURCHASE/REMOVE
TREE	56	246'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	57	256'	NPI	34:1 APPROACH	14'	PURCHASE/REMOVE
TREE	58	249'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	59	249'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	60	250'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	61	250'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	62	249'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	63	249'	NPI	34:1 APPROACH	6'	PURCHASE/REMOVE
TREE	64	250'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	65	255'	NPI	34:1 APPROACH	12'	PURCHASE/REMOVE
TREE	66	249'	NPI	34:1 APPROACH	6'	PURCHASE/REMOVE
TREE	67	247'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE
TREE	68	256'	NPI	34:1 APPROACH	12'	PURCHASE/REMOVE
TREE	69	256'	NPI	34:1 APPROACH	11'	PURCHASE/REMOVE
TREE	70	247'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE
TREE	71	250'	NPI	34:1 APPROACH	5'	PURCHASE/REMOVE
TREE	72	249'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	73	248'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	74	248'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	75	246'	NPI	34:1 APPROACH	0'	PURCHASE/REMOVE
TREE	76	256'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	77	256'	NPI	34:1 APPROACH	10'	PURCHASE/REMOVE
TREE	78	252'	NPI	34:1 APPROACH	6'	PURCHASE/REMOVE
TREE	79	248'	NPI	34:1 APPROACH	1'	PURCHASE/REMOVE
TREE	80	252'	NPI	34:1 APPROACH	5'	PURCHASE/REMOVE
TREE	81	256'	NPI	34:1 APPROACH	7'	PURCHASE/REMOVE
TREE	82	253'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	83	253'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	84	257'	NPI	34:1 APPROACH	6'	PURCHASE/REMOVE
TREE	85	252'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	86	255'	NPI	34:1 APPROACH	4'	PURCHASE/REMOVE
TREE	87	253'	NPI	34:1 APPROACH	2'	PURCHASE/REMOVE
TREE	88	254'	NPI	34:1 APPROACH	3'	PURCHASE/REMOVE



RUNWAY 7 INNER PROFILE VIEW (EXISTING)

3800' 3600' 3400' 3200' 3000' 2800' 2600' 2400' 2200' 2000' 1800' 1600' 1400' 1200' 1000' 800 600' 400' 200' 0

RUNWAY 7 INNER PROFILE VIEW (FUTURE)



EXPANDED VIEW FROM PROFILE ON LEFT

TRAVERSE WAYS (EXISTING & FUTURE)

ROAD NAME	ROAD NUMBER	ROAD ELEVATION MSL	OBSTRUCTED PART 77 SURFACE	ROAD CLEARANCE OR PENETRATION (E/F)*	PROPOSED ROAD DISPOSITION
WALDO RD	1	155.4'	34:1 APPROACH (E)	-8.2'/6.1'	NONE
PERIMETER RD	2	152.2'	34:1 APPROACH (E)	-0.4'/26.6'	NONE
PERIMETER RD	3	154.3'	34:1 APPROACH (E)	-4.6'/22.4'	NONE
PERIMETER RD	4	144.0'	NONE	NA/1.9'	
PERIMETER RD	5	156.2'	NONE	0.5'/13.3'	
PERIMETER RD	6	153.6'	NONE	1.5'/14.8'	
WALDO RD	7	159.4'	NONE	4.0'/13.4'	
TERMINAL ACCESS	8	160.8'	NONE	8.5'/15.7'	
PERIMETER RD	9	157.3'	NONE	10.4'/19.7'	
TERMINAL ACCESS	10	160.7'	NONE	11.6'/17.8'	
TERMINAL ACCESS	11	160.2'	NONE	16.6'/21.4'	
WALDO RD	12	161.0'	NONE	21.6'/24.5'	

*(+) DENOTES A CLEARANCE, (-) DENOTES A PENETRATION

NOTE: OBSTRUCTION SURVEY COMPLETED BY MARTINEZ GEOSPATIAL INC IN APRIL 2013

LEGEND
(7) OBSTRUCTION TO APPROACH SURFACE
<7> TRAVERSE WAY TO APPROACH SURFACE

MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

HORIZONTAL
0 200 400 600
Scale in Feet: 1" = 200'

VERTICAL
0 20 40 60
Scale in Feet: 1" = 20'

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_10_RPZ07.dwg

Plotted by: Morse, Ryan

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

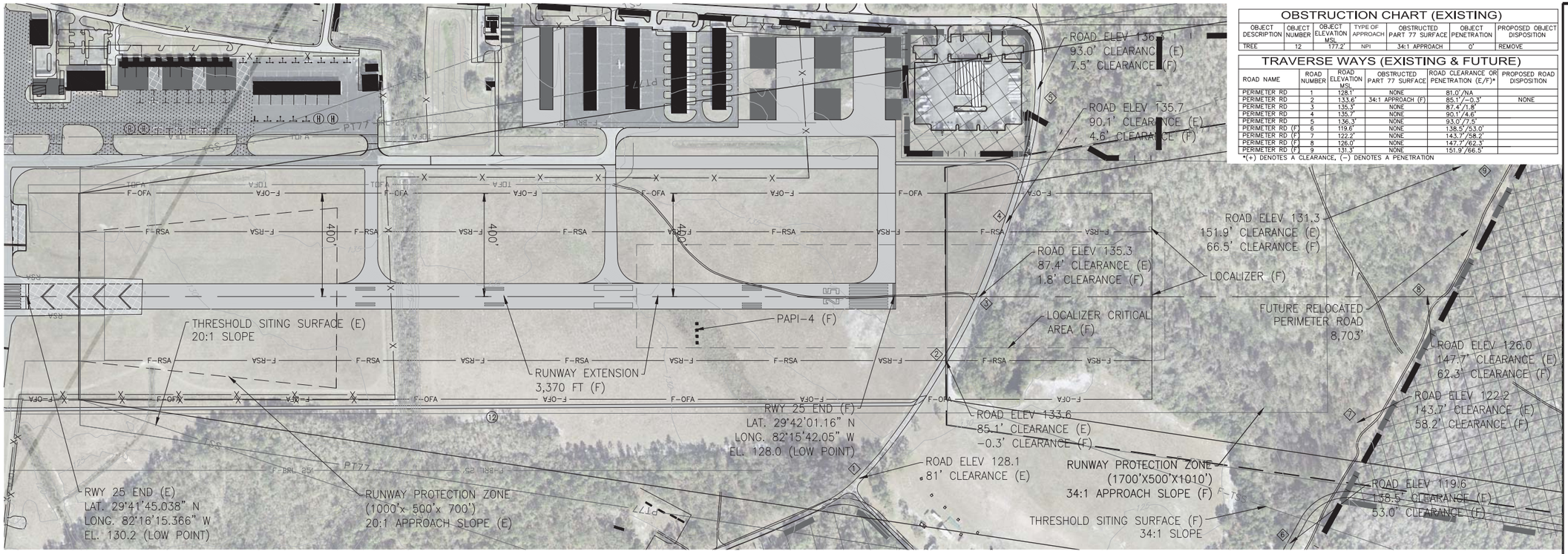
SHEET TITLE

RUNWAY APPROACH PROFILE AND RPZ RUNWAY 7

SHEET NUMBER

SHEET 10 OF 17

FAA SUBMITTAL



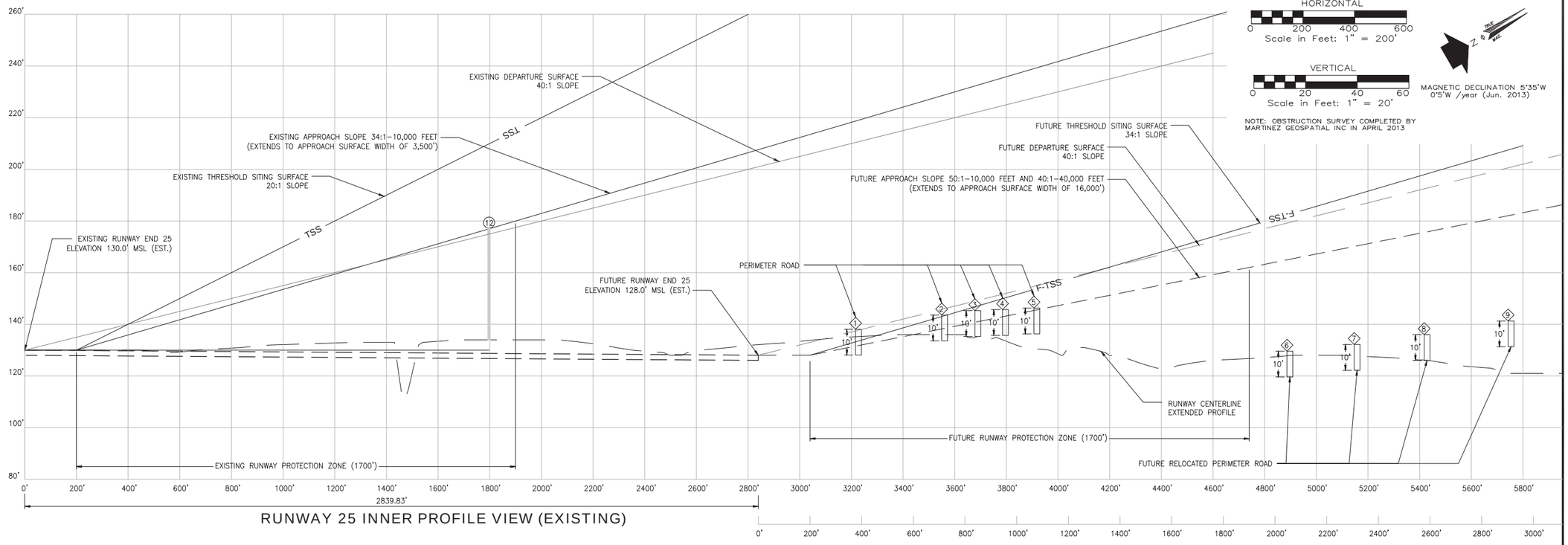
OBSTRUCTION CHART (EXISTING)

OBJECT DESCRIPTION	OBJECT NUMBER	OBJECT ELEVATION MSL	TYPE OF APPROACH	OBSTRUCTED PART 77 SURFACE	OBJECT PENETRATION	PROPOSED OBJECT DISPOSITION
TREE	12	177.2'	NPI	34:1 APPROACH	0'	REMOVE

TRAVERSE WAYS (EXISTING & FUTURE)

ROAD NAME	ROAD NUMBER	ROAD ELEVATION MSL	OBSTRUCTED PART 77 SURFACE	ROAD CLEARANCE OR PENETRATION (E/F)*	PROPOSED ROAD DISPOSITION
PERIMETER RD	1	128.1'	NONE	81.0'/NA	
PERIMETER RD	2	133.6'	34:1 APPROACH (F)	85.1'/-0.3'	NONE
PERIMETER RD	3	135.3'	NONE	87.4'/1.8'	
PERIMETER RD	4	135.7'	NONE	90.1'/4.6'	
PERIMETER RD	5	136.3'	NONE	93.0'/7.5'	
PERIMETER RD (F)	6	119.6'	NONE	138.5'/53.0'	
PERIMETER RD (F)	7	122.2'	NONE	143.7'/58.2'	
PERIMETER RD (F)	8	126.0'	NONE	147.7'/62.3'	
PERIMETER RD (F)	9	131.3'	NONE	151.9'/66.5'	

*(+) DENOTES A CLEARANCE, (-) DENOTES A PENETRATION



RUNWAY 25 INNER PROFILE VIEW (EXISTING)

RUNWAY 25 INNER PROFILE VIEW (FUTURE)

HORIZONTAL
0 200 400 600
Scale in Feet: 1" = 200'

VERTICAL
0 20 40 60
Scale in Feet: 1" = 20'

MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

NOTE: OBSTRUCTION SURVEY COMPLETED BY MARTINEZ GEOSPATIAL INC IN APRIL 2013

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_11_RPZ25.dwg

Plotted by: Morse, Ryan

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

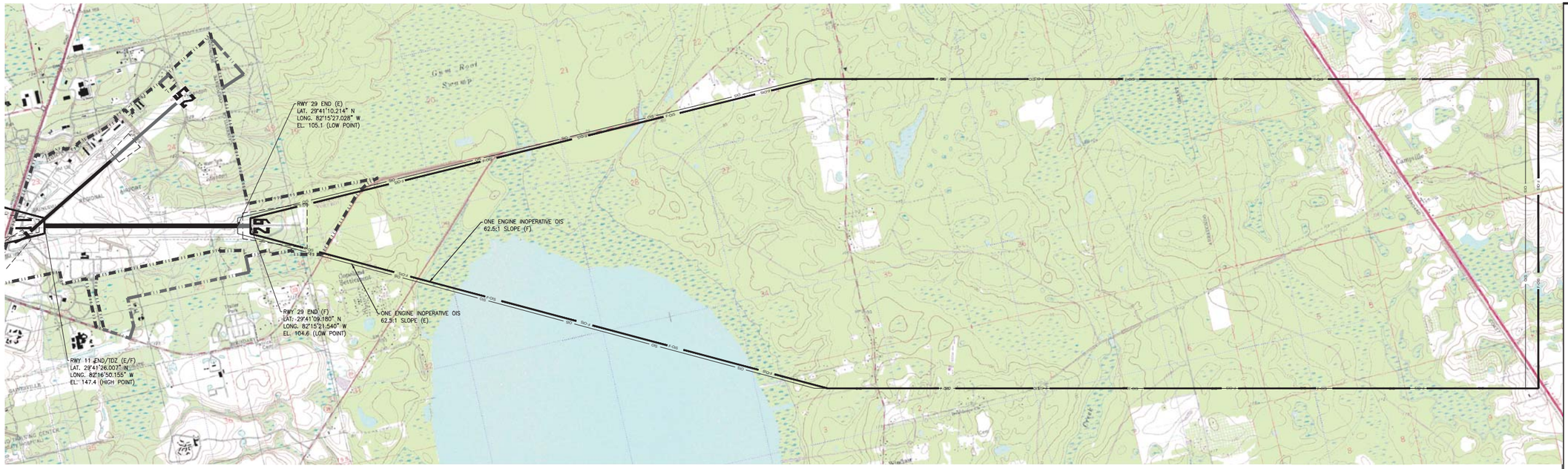
SHEET TITLE

RUNWAY APPROACH PROFILE AND RPZ RUNWAY 25

SHEET NUMBER

SHEET 11 OF 17

FAA SUBMITTAL



RUNWAY 29

LEGEND		
DESCRIPTION	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
RUNWAY PROTECTION ZONE		N/A
ONE ENGINE INOPERATIVE SURFACE	OIS	F-OIS
RUNWAY PAVEMENT		

0 2,000' 4,000' 6,000'

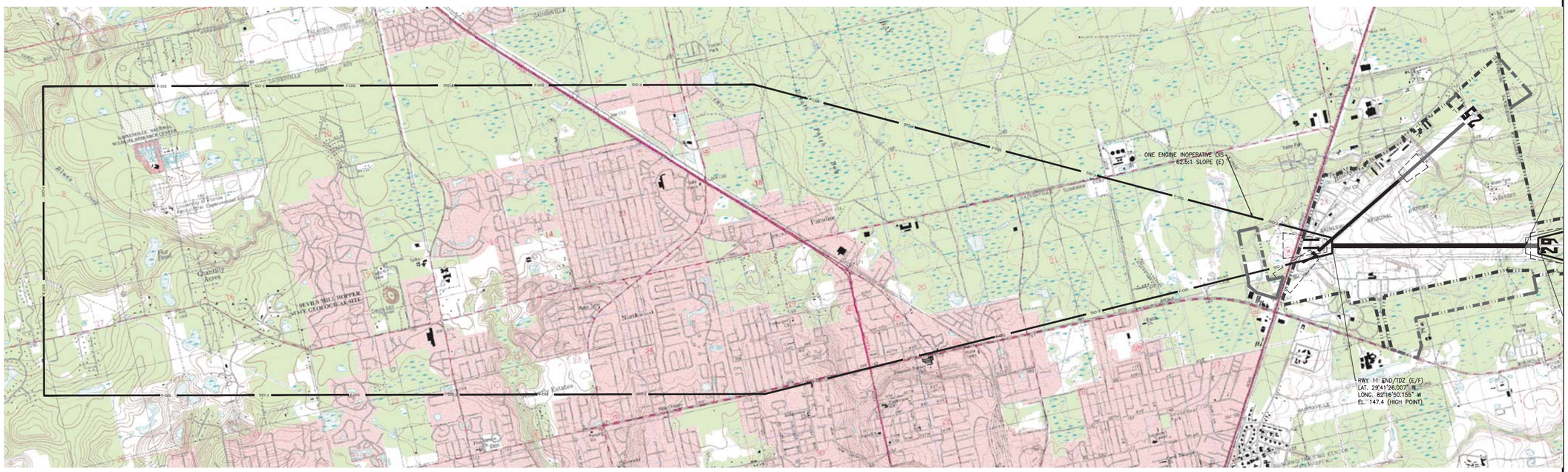
SCALE 1"=2,000'

TRUE MAG.

N

MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

RUNWAY 11



NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_12_DEP_OEI.dwg

Plotted by: Morse, Ryan

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

OBJECT IDENTIFICATION SURFACE (OIS) (DEPARTURE OIS SURFACE)

SHEET NUMBER

SHEET 12 OF 17

FAA SUBMITTAL

BLDG. NO.	EXISTING AIRPORT-OPERATED FACILITIES	TOP ELEV (FT)
1	AIRPORT TERMINAL	180.3
4	SOUTH AIRFIELD LIGHTING VAULT	136.4
6	AIR TRAFFIC CONTROL TOWER (TO BE RELOCATED)	193.4
10	NATIONAL CAR RENTAL SERVICE FACILITY (TO BE REMOVED)	163.1
11	SHORT TERM PARKING	139.8
12	LONG TERM PARKING	142.7
44	PUMP HOUSE BUILDING	155.1
47	AIRPORT MAINTENANCE FACILITY	142.7

BLDG. NO.	FUTURE AIRPORT-OPERATED FACILITIES
A	AIRPORT TERMINAL EXPANSION
B	SHORT TERM PARKING EXPANSION
C	LONG TERM PARKING EXPANSION
D	EMPLOYEE PARKING EXPANSION AND RELOCATION
E	HOTEL SITE
F	ULTIMATE TERMINAL PARKING EXPANSION
G	AIR TRAFFIC CONTROL TOWER
H	AIR CARGO TERMINAL
L	AIRCRAFT APRON
U	ARFF STATION

'TWY' (F)
90'
400' FROM TWY CL TO RWY CL
'TWY' (F)
75'
294'
325'
244'
244'
238'
L (ULTIMATE)
L (FUTURE)
L (ULTIMATE)
834'
SEE INSET A BELOW FOR AREA SOUTH/EAST OF AIRPORT TERMINAL
INSET A
FUTURE AEROSPACE INDUSTRIAL PARK
FUTURE EXPANSION AREA
LAND ACQUISITION 22.4± ACRES
LAND ACQUISITION 33.9± ACRES (FUTURE NON-AERONAUTICAL DEVELOPMENT)
STATE DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES AND ALACHUA COUNTY JUVENILE DETENTION CENTER (E)

MAGNETIC DECLINATION 5°35'W
0°5'W /YEAR (JUN. 2013)
HORIZONTAL
0 100 200 300
SCALE IN FEET: 1" = 100'

HORIZONTAL
0 600 1200 1800
SCALE IN FEET: 1" = 600'

LEGEND

DESCRIPTION	EXISTING	FUTURE
LAND ACQUISITION HATCH	N/A	
AIRPORT PROPERTY LINE		
ACTIVE AIRFIELD PAVEMENT		
PAVEMENT DEMOLITION	N/A	
PAVED ROADS & PARKING		
BUILDINGS - ON AIRPORT PROPERTY		
BUILDINGS - OFF AIRPORT PROPERTY		N/A
OBSTACLE FREE ZONE	OFZ	F-OFZ
RUNWAY SAFETY AREA	RSA	F-RSA
RUNWAY OBJECT FREE AREA	OFA	F-OFA
TAXIWAY OBJECT FREE AREA	TOFA	F-TOFA
BUILDING RESTRICTION LINE	BRL 35'	N/A
FENCE	X	XX
STORM DRAINAGE CHANNEL		N/A
TREES		N/A

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE (ADO) PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

NOT FOR CONSTRUCTION

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2015 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

TERMINAL AREA PLAN

SHEET NUMBER

SHEET 13 OF 17

FAA SUBMITTAL

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_13_TERMINAL.dwg
Plotted by: Morse, Ryan

LEGEND		
DESCRIPTION	EXISTING	FUTURE
LAND ACQUISITION HATCH	N/A	
AIRPORT PROPERTY LINE		
AIRPORT INDUSTRIAL PARK	N/A	
FUTURE AVIATION RELATED DEVELOPMENT	N/A	
FUTURE NON-AVIATION RELATED DEVELOPMENT	N/A	
ACTIVE AIRFIELD PAVEMENT		
PAVEMENT DEMOLITION	N/A	
BUILDING DEMOLITION	N/A	
PAVED ROADS & PARKING		
FENCE	—X—X—	—XX—XX—
GATE LOCATION (# OR UNKNOWN)		N/A
DESCRIPTION	EXISTING	FUTURE
BUILDINGS - ON AIRPORT PROPERTY		
BUILDINGS - OFF AIRPORT PROPERTY		N/A
OBSTACLE FREE ZONE	OFZ	F-OFZ
RUNWAY SAFETY AREA	RSA	F-RSA
RUNWAY OBJECT FREE AREA	OFA	F-OFA
TAXIWAY OBJECT FREE AREA	TOFA	F-TOFA
RUNWAY VISIBILITY ZONE	RVZ	F-RVZ
BUILDING RESTRICTION LINE	BRL 35'	F-BRL 35'
ONE ENGINE INOPERATIVE SURFACE	OEI	F-OEI
RUNWAY PROTECTION ZONE		
STORM DRAINAGE CHANNEL		
TREES		N/A
APRON TIE DOWN		N/A
PAPI		
BEACON		

CONSTRUCTION NOTICE REQUIREMENT

TO PROTECT OPERATIONAL SAFETY AND FUTURE DEVELOPMENT, ALL PROPOSED CONSTRUCTION ON THE AIRPORT MUST BE COORDINATED BY THE AIRPORT OWNER WITH THE FAA AIRPORTS DISTRICT OFFICE (ADO) PRIOR TO CONSTRUCTION. FAA'S REVIEW TAKES APPROXIMATELY 60 DAYS.

MAGNETIC DECLINATION 5°35'W
0°5'W /year (Jun. 2013)

HORIZONTAL
0 100 200 300
Scale in Feet: 1" = 100'

BLDG. NO.	EXISTING AIRPORT-OPERATED FACILITIES	TOP ELEV (FT)
2	AIRCRAFT MAINTENANCE HANGAR (125'X124')	175.4
3	FUEL STORAGE FACILITY	154.2
5	ARFF STATION (TO BE RELOCATED)	163.2
6	ROTATING BEACON (TO BE RELOCATED)	235.4
9	VAC MAINTENANCE BUILDING	173.0
13	OFFICE (118'X88')	168.8
14	BOX HANGAR (121'X73')	169.2
15	BOX HANGAR (96'X91')	178.1
16	BOX HANGAR (126'X102')	174.5
17	BOX HANGAR (124'X98')	174.0
18	UNIVERSITY AIR CENTER TERMINAL BUILDING	162.1
19	FEDERAL EXPRESS SORT FACILITY (TO BE REMOVED)	154.0
20	FAA TECHNICAL OPERATIONS OFFICE	150.4
21	PORT-A-PORT	150.0
22	T-HANGAR BUILDING A (311'X34')	151.7
23	PORT-A-PORTS	152.8
24	T-HANGAR BUILDING D (381'X52')	152.3
25	T-HANGAR BUILDING F (315'X35')	148.2
26	STORAGE HANGAR (100'X70')	162.3
27	BOX HANGAR (147'X76')	161.8
28	ABANDONED BUILDING	154.8
29	PORT-A-PORTS (TO BE REMOVED)	153.9
30	SUNSHADES	158.5
31	BOX HANGAR (63'X61')	172.3
31A	MODULAR OFFICE BUILDING	155.1
32	T-HANGAR BUILDING I (323'X49')	162.6
33	T-HANGAR BUILDING J (313'X53')	159.0
38	BOX HANGAR (308'X164')	189.0
39	BOX HANGAR (147'X102')	178.3
40	SERVICE HANGAR (166'X100')	178.7
41	NORTH AIRFIELD LIGHTING VAULT	153.5
42	T-HANGAR BUILDING K (313'X58')	162.2
43	T-HANGAR BUILDING L (316'X53')	160.1
45	STORAGE SHED	147.5
46	ASDB ANTENNA	231.9
48	SKY CHIEFS AVIATION TRAILER	N/A

BLDG. NO.	FUTURE AIRPORT-OPERATED FACILITIES
J	AIR CARGO/MRO FACILITY
M	GA FBO BUILDING
N	ELECTRICAL VAULT
P	FUEL FARM EXPANSION
Q	T-HANGAR
R	3RD FBO HANGAR
M	UNIVERSITY AIR CENTER BUILDING EXPANSION

SR 24 WALDO RD
NE 40th TER
NE 47th AVE
NE 40TH TER
NE 45th AVE
NE 41st TER
PROPOSED RELOCATED BEACON
APRON STRENGTHENING AREA (F)
GENERAL AVIATION APRON
DRAINAGE IMPROVEMENT AREA (F)
VIOLATES BRL CONSIDER RELOCATION
522' FROM TWY CL TO RWY CL
MATCHLINE SHEET 12

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_14_GA1.dwg

Plotted by: Morse, Ryan

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

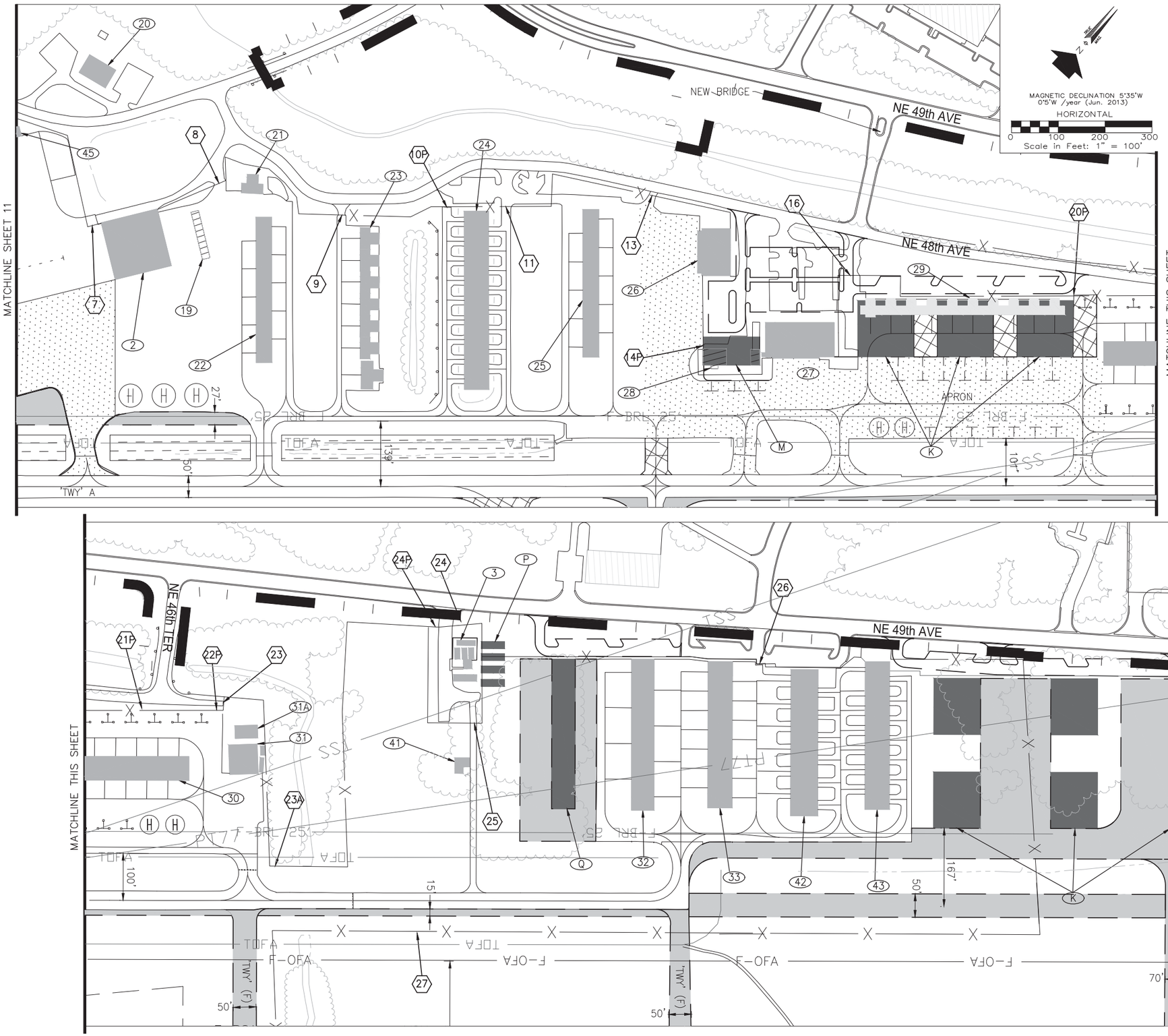
SHEET TITLE

GENERAL AVIATION AREA PLAN (1 OF 2)

SHEET NUMBER

SHEET 14 OF 17

FAA SUBMITTAL



BLDG. NO.	EXISTING AIRPORT-OPERATED FACILITIES	TOP ELEV (FT)
2	AIRCRAFT MAINTENANCE HANGAR (125'X124')	175.4
3	FUEL STORAGE FACILITY	154.2
5	ARFF STATION (TO BE RELOCATED)	163.2
8	ROTATING BEACON (TO BE RELOCATED)	235.4
9	VAC MAINTENANCE BUILDING	173.0
13	OFFICE (118'X88')	168.8
14	BOX HANGAR (121'X73')	169.2
15	BOX HANGAR (96'X98")	178.1
16	BOX HANGAR (126'X102')	174.5
17	BOX HANGAR (124'X98')	174.0
18	UNIVERSITY AIR CENTER TERMINAL BUILDING	162.1
19	FEDERAL EXPRESS SORT FACILITY (TO BE REMOVED)	154.0
20	FAA TECHNICAL OPERATIONS OFFICE	150.4
21	PORT-A-PORT	150.0
22	T-HANGAR BUILDING A (311'X34')	151.7
23	PORT-A-PORTS	152.8
24	T-HANGAR BUILDING D (381'X52')	152.3
25	T-HANGAR BUILDING F (315'X35')	148.2
26	STORAGE HANGAR (100'X70')	162.3
27	BOX HANGAR (147'X76')	161.8
28	ABANDONED BUILDING	154.8
29	PORT-A-PORTS (TO BE REMOVED)	153.9
30	SUNSHADES	158.5
31	BOX HANGAR (63'X61')	172.3
31A	MODULAR OFFICE BUILDING	155.1
33	T-HANGAR BUILDING I (323'X49')	162.6
33	T-HANGAR BUILDING J (313'X53')	159.0
38	BOX HANGAR (308'X164')	189.0
39	BOX HANGAR (147'X102')	178.3
40	SERVICE HANGAR (166'X100')	178.7
41	NORTH AIRFIELD LIGHTING VAULT	153.5
42	T-HANGAR BUILDING K (313'X58')	162.2
43	T-HANGAR BUILDING L (316'X53')	160.1
45	STORAGE SHED	147.5
46	ASDE ANTENNA	231.9

BLDG. NO.	FUTURE AIRPORT-OPERATED FACILITIES
M	GA FBO BUILDING
N	ELECTRICAL VAULT
P	FUEL FARM EXPANSION
Q	T-HANGAR
R	3RD FBO HANGAR

LEGEND		
DESCRIPTION	EXISTING	FUTURE
LAND ACQUISITION HATCH	N/A	
AIRPORT PROPERTY LINE		
AIRPORT INDUSTRIAL PARK		N/A
FUTURE AVIATION RELATED DEVELOPMENT	N/A	
FUTURE NON- AVIATION RELATED DEVELOPMENT	N/A	
ACTIVE AIRFIELD PAVEMENT		
PAVEMENT DEMOLITION	N/A	
BUILDING DEMOLITION	N/A	
PAVED ROADS & PARKING		
FENCE	—X—X—	—XX—XX—
GATE LOCATION (# OR UNKNOWN)		N/A
DESCRIPTION	EXISTING	FUTURE
BUILDINGS – ON AIRPORT PROPERTY		
BUILDINGS – OFF AIRPORT PROPERTY		N/A
OBSTACLE FREE ZONE	—OFZ—	—F-OFZ—
RUNWAY SAFETY AREA	—RSA—	—F-RSA—
RUNWAY OBJECT FREE AREA	—OFA—	—F-OFA—
TAXIWAY OBJECT FREE AREA	—TOFA—	—F-TOFA—
RUNWAY VISIBILITY ZONE	—RVZ—	—F-RVZ—
BUILDING RESTRICTION LINE	—BRL 35°—	—F-BRL 35°—
ONE ENGINE INOPERATIVE SURFACE	—OEI—	—F-OEI—
RUNWAY PROTECTION ZONE		
STORM DRAINAGE CHANNEL		
TREES		N/A
APRON TIE DOWN		N/A
PAPI		
BEACON		

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_15_GA2.dwg

Plotted by: Morse, Ryan

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

GENERAL AVIATION AREA PLAN (2 OF 2)

SHEET NUMBER

SHEET 15 OF 17

FAA SUBMITTAL

AIRPORT ZONING NOTES:

THE CITY OF GAINESVILLE GOVERNS LAND USE THOUGH FOUR TYPES OF AIRPORT ZONES

1. LAND USES WITHIN AREAS GREATER THAN DNL 55.
2. LAND USES WITH RUNWAY PROTECTION ZONES.
3. HEIGHT LIMITATION COINCIDENT WITH PART 77 SURFACES
4. SCHOOL BUILDING PROHIBITION PER FLORIDA STATUTES CHAPTER 333.03(3)

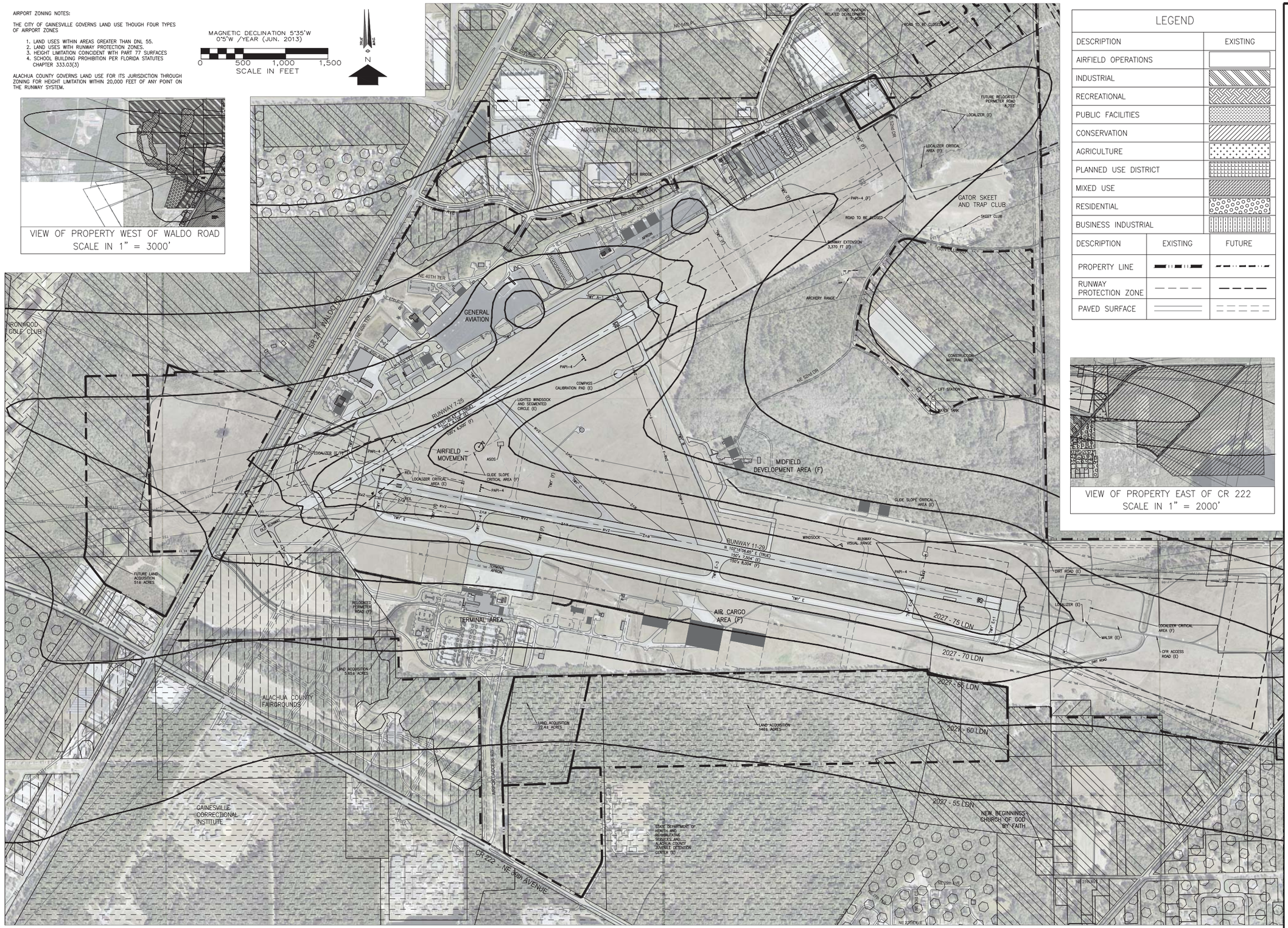
ALACHUA COUNTY GOVERNS LAND USE FOR ITS JURISDICTION THROUGH ZONING FOR HEIGHT LIMITATION WITHIN 20,000 FEET OF ANY POINT ON THE RUNWAY SYSTEM.

MAGNETIC DECLINATION 5°35'W
0°5'W /YEAR (JUN. 2013)

0 500 1,000 1,500
SCALE IN FEET

N

VIEW OF PROPERTY WEST OF WALDO ROAD
SCALE IN 1" = 3000'



LEGEND	
DESCRIPTION	EXISTING
AIRFIELD OPERATIONS	
INDUSTRIAL	
RECREATIONAL	
PUBLIC FACILITIES	
CONSERVATION	
AGRICULTURE	
PLANNED USE DISTRICT	
MIXED USE	
RESIDENTIAL	
BUSINESS INDUSTRIAL	

DESCRIPTION	EXISTING	FUTURE
PROPERTY LINE		
RUNWAY PROTECTION ZONE		
PAVED SURFACE		

VIEW OF PROPERTY EAST OF CR 222
SCALE IN 1" = 2000'

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2014 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

LAND USE COMPATIBILITY PLAN

SHEET NUMBER

SHEET 16 OF 17

FAA SUBMITTAL

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_16_LAND_USE.dwg

Plotted by: Morse, Ryan

PARCEL NO.	ACRES
17752	1.939
17752-1	1.984
17752-1-1	2.666
17752-1-1	2.002
17752-3	1.000
17752-2	1.000
17752-4	6.200
17752-5	1.033

ACQUISITIONS

PARCEL NO.	AIP PROJECT NO. 3-12-0028-01
17752	
L	A.I.P. # 3-12-0028-16
	17752-1
	17752-1-1
	17752-2
	17752-3
	17752-4
	17752-5
	17752-1

INSET "1"

MAGNETIC DECLINATION 5°35'W
0°5'W /YEAR (JUN. 2013)

0 500 1,000 1,500
SCALE IN FEET

ACQUISITIONS

PARCEL NUMBER	DATE OF ACQUISITION	FEDERAL AID PROJECT #	TYPE OF OWNERSHIP	PARCEL ACREAGE
A1	10/16/1948	N/A	PRIVATE	245+/-
A2	10/16/1948	N/A	PRIVATE	600+/-
A3	10/1948	N/A	PRIVATE	105+/-
B1	7/1967	9-08-021-02	PRIVATE	49.07
B2	1/5/1968	9-08-021-02	PRIVATE	82.22
B3	2/28/1968	9-08-021-02	PRIVATE	9.9
C	3/4/1971	9-08-021-04	PRIVATE	66.2
C1	7/26/1943	N/A	PRIVATE	114.64
D	6/1972	8-12-0028-03	PRIVATE	5
E1	9/12/1974	8-12-0028-03	PRIVATE	5.4
E2	9/7/1977	8-12-0028-03	PRIVATE	85+/-
F1	1977	6-12-0028-05	PRIVATE	3.087
3-F	1977	6-12-0028-05	PRIVATE	5+
G	6/21/1977	6-12-0028-05	EASEMENT	13+
H	5/10/1977	06	EASEMENT	4+
I	10/01/1987	10.32 AC. 6-12-0028-10 20.6 AC. 3-12-0028-01 17.12 AC. 3-12-0028-06	MUNICIPAL	48.04
J2	6/3/1988	3-12-0028-01 PART 2	PRIVATE	1.94
K	FY 1991/1992	FDOT GRANT WPI 2820773	PRIVATE	269.03
L	1994	3-12-0028-16	PRIVATE	15.5+
4A	6/1978	6-12-0028-05	PRIVATE	1.94+/-
8A	5/16/1996	N/A	PRIVATE	0.95+/-
J1	8/1/1988	3-12-0028-01 PART 2	PRIVATE	2.39+/-

PARCELS RELEASED FROM WAA INSTRUMENT OCT. 15, 1948

PARCEL NUMBER	DATE OF ACQUISITION	ACQUIRING ENTITY	TYPE OF OWNERSHIP	PARCEL ACREAGE
1	6/4/1954	SPERRY RAND CORP.	SOLD	43.52
2	10/23/1957	PENINSULAR CHEMICAL RESEARCH, INC.	SOLD	5+
3A	8/2/1958	SPERRY RAND CORP.	SOLD	69.58
3B	8/2/1958	SPERRY RAND CORP.	SOLD	11.46
4	11/20/1959	PENINSULAR CHEMICAL RESEARCH, INC. AND IAC, SPERRY RAND CORP.	SOLD	5+
5	11/24/1967	PENINSULAR CHEMICAL RESEARCH, INC.	SOLD	0.75
6	4/30/1970	FABCO-AIR INC.	SOLD	5.98
7	8/24/1970	MARIS DISTRIBUTING COMPANY	SOLD	6.09
8	6/7/1971	HUNTER & ADAMS	SOLD	3.34
8A	6/7/1971	HUNTER & ADAMS	RELEASE FROM 8 (SEE ABOVE)	0.95
9A	4/14/1995	CITY OF GAINESVILLE	RELEASE	57.65
9B	4/14/1995	CITY OF GAINESVILLE	ENCUMBRANCE	27+/-
10	5/5/1998	KENNETH O. LESTER CO.	SOLD	2.01
11	1/21/1999	RYDER SYSTEMS INC.	SOLD	3.36
12	1/26/2001	KENNETH O. LESTER CO.	RELEASE	3.00
13	7/2/2002	KENNETH O. LESTER CO.	RELEASE	3.72

FUTURE ACQUISITIONS

PARCEL NUMBER	PARCEL OWNER	PARCEL ACREAGE
N	STATE OF FLORIDA	123.82
O	STATE OF FLORIDA	25.64
P	ALACHUA COUNTY	30.48
Q	CITY OF GAINESVILLE, FDOT & EAST GAINESVILLE DEVELOPMENT PARTNERS LLC	53.5
R	RYDER TRUCK RENTAL, INC	5.04
S	RAYONIER FOREST RESOURCES	20.29

LEGEND

DESCRIPTION	EXISTING	FUTURE
AIRPORT BOUNDARY FAA ENCUMBERED PROPERTY		
CITY OWNED FAA UNENCUMBERED PROPERTY		N/A
PROPERTY RELEASED BY FAA IN 1971		N/A
RUNWAY PROTECTION ZONE		
PAVED SURFACE		

ENCUMBRANCE PARCEL "A" 9B
ENCUMBRANCE PARCEL "B" 9B
RUNWAY PROTECTION ZONE (2500'x1000'x1750') 34:1 APPROACH SLOPE (F)
RWY 25 END (F) LAT. 29°41'01.16" N LONG. 82°15'42.05" W EL. 128.0 (LOW POINT)
RWY 7 END (F) LAT. 29°41'29.98" N LONG. 82°16'46.51" W EL. 149.5 (HIGH POINT)
ARP-F 29°41'29.71" N 82°16'13.65" W
RUNWAY PROTECTION ZONE (1700'x500'x10') 34:1 APPROACH SLOPE (F)
RUNWAY PROTECTION ZONE (2500'x 1000'x 1750') 50:1 APPROACH SLOPE (F)
RWY 29 END (F) LAT. 29°41'09.190" N LONG. 82°15'21.540" W EL. 104.6 (LOW POINT)
NOS 8,8A & 8B
SEE DETAILED VIEW THIS SHEET FOR PROPERTY WEST OF SR 222
SEE INSET "1"
STATE DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES AND ALACHUA COUNTY JUVENILE DETENTION CENTER (C)

DETAILED VIEW OF PROPERTY EAST OF SR 222

0 1,000 2,000 3,000
Scale in Feet

NOTE:
THE REPRESENTATIVE EXHIBIT "A" FOR THE GAINESVILLE REGIONAL AIRPORT IS 'AIRPORT PROPERTY MAP', EFFECTIVE SEPTEMBER 2014, PREPARED BY EDA, ENGINEERS-SURVEYORS-PLANNERS, INC.

NOT FOR CONSTRUCTION

Drawing: T:\P\2013363.107 GNV ALP Update Study\CAD\C\GNV_17_PROPERTY_COLOR.dwg

Plotted by: Morse, Ryon

RS&H

RS&H, Inc.
10748 Deerwood Park Blvd. South
Jacksonville, Florida 32256-0597
904-256-2500 Fax 904-256-2503
www.rsandh.com
FL Cert. Nos. AAC001886 * IB26000956 *
5620 * LCC000210 * GB238

GAINESVILLE REGIONAL AIRPORT

GAINESVILLE
REGIONAL AIRPORT
GAINESVILLE, FL

AIRPORT LAYOUT PLAN UPDATE

CONSULTANTS

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: 7-31-2015
REVIEWED BY: GL
DRAWN BY: RJM
DESIGNED BY:

RS&H PROJECT NUMBER
201-3363-107

© 2015 REYNOLDS, SMITH AND HILLS INC.

SHEET TITLE

AIRPORT PROPERTY MAP (SEE NOTE)

SHEET NUMBER

SHEET 17 OF 17

FAA SUBMITTAL



RS&H

IMPROVING YOUR WORLD

10748 Deerwood Park Boulevard South
Jacksonville, FL 32256-0597
(904) 256-2500

www.rsandh.com