SEBRING
MULTIMODAL LOGISTICS CENTER

Airport Master Plan 2020

SEBRING REGIONAL AIRPORT

Sebring Airport Authority

ATKINS

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Executive Summary

The purpose for updating the Sebring Regional Airport (SEF) Airport Master Plan (AMP) is to describe the airports short-, medium-, and long-term plans to meet the future demand in a safe, efficient, economical, and environmentally responsible manner. The AMP assists in ensuring the airport meets the development goals of SEF, the surrounding community, and the national aviation system (NAS) by providing a roadmap for its modernization and expansion.

This executive summary provides a condensed summary of findings of the comprehensive master planning process that was completed in early 2020. Where appropriate, this summary references the location within the AMP where more detailed information can be found.

Inventory and Environmental Overview

To develop a robust and responsible plan, an airport must first have a clear understanding of the existing conditions. The existing condition of the airport infrastructure is the basis for identifying what is needed to meet current and future demands. Chapter 2, Inventory of Existing Conditions, provides details about the existing condition of the Airport and an overview of environmental issues that may affect future development. A comprehensive inventory was conducted and catalogues information about the runways, taxiways, structures, roadways, land use, and airspace. This information is used to identify any deficiencies that may need to be addressed in the future. Identifying potential environmental impacts is a crucial part of the master planning process as it provides the ability to mitigate potential adverse impacts through avoidance and integration of environmentally conscious means and methods.

Aviation Forecasts

The forecast of aviation activity is a key component of the AMP as it provides a basis and understanding of all future needs. Chapter 3, Aviation Activity Forecasts, provides a detailed analysis of multiple forecast methodologies that were analyzed for this AMP, as well as the resulting preferred forecast. Aviation activity forecasts are one of the items reviewed and approved by the Federal Aviation Administration (FAA). FAA approval of the forecast was received on March 1, 2018. FAA approval is required to ensure the forecasts are realistic, based on thorough analysis, data driven, and supported by information provided in the AMP and overall industry trends. This AMP has a base year of 2017 and provides a 20-year forecast of activity from 2018 until 2038. A copy of the FAA Approval of the Forecast of Aviation Activity is included in **Appendix A**. The approved forecast is based on a combination of market share and statewide system plan projections.

The Airport's total based aircraft were allocated to five categories, single-engine, multi-engine, turboprop, jet, and rotorcraft, based on the aircraft type, known as the fleet mix. The approved growth rate was then applied to the fleet based on the fleet mix percentages exhibited historically at the Airport combined with industry and the FAA Aerospace Forecast trends. These projections allow for a better understanding of the airport general aviation (GA) needs throughout the planning period.

Total based aircraft are forecast to increase from 91 aircraft in 2017 to 135 aircraft by 2038. According to the forecast, the number of aircraft will increase for every category of the fleet mix with the most significant increase over the 20-year period being jets (360 percent), then rotorcraft (100 percent). Single-engine and multi-engine aircraft will experience more moderate increases of 23 and 36 percent, respectively, over the planning period.

Airport operations are a key factor in understanding the major development needs at an airport. Significant increases in operations will drive significant development in airport infrastructure such as runways, taxiways, and aprons. The approved forecast of aviation activity defines an average annual growth rate of 2.5 percent, with annual operations reaching 122,500 by 2038. All operation types at SEF are projected to continually grow throughout the planning period, with a slight shift between local and itinerant operations. Projections are expected to exceeding FAA Terminal Area Forecasts (TAF) by approximately 34 percent in five years and 47 percent in 10-years.

Facility Requirements

Following the documentation of existing conditions and the establishment of a realistic and detailed forecast, a determination of facility requirements which will be necessary to accommodate the demand throughout the 20-year planning period is made. Chapter 4, Design Criteria and Facility Requirements, defines those facilities that are necessary to meet that demand. It is important to note that facility requirements are based on specific based aircraft and operational levels being met. While forecasts of aviation activity are thoroughly vetted and ultimately approved by the FAA, a forecast is still a best guess and is subject to inaccuracies due to unknown and unforeseeable influences.

The following sections outline the design criteria and facility requirements that were established as part of this AMP process. Further analysis and details can be found in Chapter 4.

Critical Aircraft and Airport Reference Code

Determination of the critical aircraft and associated Airport Reference Code (ARC) is a critical step in the AMP process and has significant implications on the overall development depicted in the Airport Layout Plan. The critical aircraft will determine the design criteria for which the airport will be developed, including dimensional requirements such as runway and taxiway separations and the areas necessary for the protection of aircraft operations, passengers, and the neighboring community.

The FAA defines the critical aircraft as "…the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the airport." Regular use is defined as having 500 annual operations or more, including local and itinerant operations, but excluding touch-and-go's. An operation is either a takeoff or landing. Further, an airport can have multiple critical aircraft depending on the number of runways and the overall layout of the airport facilities.

The critical aircraft at SEF was determined using FAA's Traffic Flow Management System Counts (TFMSC) data and FBO/airport provided details. The Aircraft Approach Category (AAC) and Airplane Design Group (ADG) for the critical aircraft is used to identify the applicable design standards that are used. The existing and future critical aircraft and their AAC and ADG are outlined in **Table 1-1** below. Note the critical aircraft for each runway is different based on each runways available infrastructure, such as length, width, and approach capabilities.

Table 1-1 Critical Aircraft

Runway	Existing Critical Aircraft		Future Critical Aircraft	
1-19	Gulfstream G450	D-II	Gulfstream GV/550	D-III
14/32	Cessna Citation 550	B-II	Cessna Citation 550	B-II-Small

Runway Length

An analysis of both the takeoff and landing distance needed for the existing and future critical aircraft was completed in accordance with FAA AC 150/5325-4B, Runway Length Requirements for Airport Design. The critical aircraft along with a representative fleet of aircraft were analyzed and runway length requirements for useful loads between 60 and 95 percent for all aircraft in the fleet were reviewed.

In December 2013, a runway extension justification report for Runway 1-19 was submitted to the FAA for review. The report outlined the increased need from existing and potential users for a longer primary runway at SEF. The report and proposed Runway 1-19 extension of 1,776-feet from an existing length of 5,234-feet to a new length of 7,000-feet was approved on January 9, 2014. Additional coordination meetings were held between the Sebring Airport Authority (SAA), the FAA, and FDOT in early 2016 to discuss the runway extension and necessary land acquisition. SAA is currently in the process of acquiring the necessary property to the north of the runway and relocating the railroad spur to allow for the extension and necessary safety areas.

Runway Safety Area

A Runway Safety Area (RSA) is a graded surface centered on a runway that is required to be free of all objects except for those that are 'fixed by function' such as runway lights and certain NAVAIDS. The width and length of the RSA depends on the Airport's runway design code (RDC). The RDC is a combination of the AAC and ADG of the critical aircraft, plus the approach visibility minimums for a given runway. When each runway end has a different RDC, the most demanding prevails. The existing and future RDC are presented in Table 1-2.

Table 1-2 Existing and Future Runway Design Code (RDC)

Runway	Existing	Future
1-19	D-II-5000	D-III-5000
14-32	B-II-5000	B-II-5000

Meeting RSA requirements is one of the FAA's highest priorities in maintaining safety at the nation's airports. The RSA requirements for each runway based on the existing and future RDC are presented in **Table 1-3**.

Table 1-3 Runway Safety Area (RSA) Requirements

Runway	Length Beyond Runway End		Width	
	Existing	Future	Existing	Future
1-19	1,000 ft.	1,000 ft.	500 ft.	500 ft.
14-32	1,000 ft.	1,000 ft.	500 ft.	500 ft.

Runway Protection Zone

The purpose of a Runway Protection Zone (RPZ) is to enhance the safety of people and property on the ground by limiting and/or restricting the construction of certain structures within its bounds. This area should be free of land uses that create glare, smoke, or other hazards to air navigation. Additionally, the FAA requires that no vertical structures are constructed within the extents of the RPZ.

The approach RPZ is based on the AAC plus the approach minimum, while the departure RPZ is based on the AAC and departure procedures associated with the runway. The RPZ requirements for each runway based on the existing and future criteria are presented in **Table 1-4**.

Table 1-4 Runway Protection Zone (RPZ) Requirements

Runway	Length		Inner Width		Outer Width	
	Existing (ft)	Future (ft)	Existing (ft)	Future (ft)	Existing (ft)	Future (ft)
1-19	1,700	Same	500	Same	1,010	Same
14-32	1,000	Same	500	Same	700	Same

Runway Designations

A runway designation is identified by the whole number nearest to the magnetic azimuth of the runway when oriented along the runway centerline as if on approach to that runway end. Magnetic azimuth is determined by adjusting the geodetic azimuth associated with a runway to compensate for magnetic declination. Magnetic declination is a natural process and periodically requires the re-designation of runways. As of March 2020, the magnetic declination in Sebring was 6 degrees, 22 minutes West.

Table 1-5 Runway Safety Area (RSA) Requirements

Runway	Geodetic Azimuth	Magnetic Azimuth	Runway Designation	
			Existing	Future
1-19	360° 01’ 57.00’’	06° 23’ 57.00’’	1-19	1-19
14-32	135° 00’ 49.00’’	141° 22’ 49.00’’	14-32	14-32

**Runway 08/26 is adjusted in order to better distinguish the turf runway from the primary paved runway.*

Runway Strength

The gross weight bearing capacity for Runway 1-19 is published in the Airport Master Record (FAA Form 5010) as Single Wheel (S) 26,000 pounds, Dual Wheel (D) 50,000 pounds, and Double Tandem (2D) 85,000. Runway 14-32 is published as Single Wheel (S) 26,000 pounds, Dual Wheel (D) 50,000 pounds, and Double Tandem (2D) 85,000. However, in 2017, the FDOT undertook a Pavement Classification Number Development (PCND) program at all Florida public airports. Based on this study, the pavement strengths have changed and are presented in **Table 1-6**.

Table 1-6 Runway Strength Summary

Runway	Single Wheel		Duel Wheel		Double Duel Tandem	
	Existing	Future	Existing	Future	Existing	Future
1-19	83,000	Same	126,000	Same	N/A	N/A
14-32*	30,000	Same	45,000	Same	N/A	N/A

All pavement strengths are in pounds (lbs)

Pavement strength based on 2017 FDOT Pavement Classification Number Development (PCND) Program

**Runway 14-32 is limited to the utility category (12,500 pounds single wheel)*

Taxiways

In 2012, the FAA introduced new design standards with respect to taxiways. A new Taxiway Design Group (TDG) was developed which identifies the taxiway design standards, specifically for fillets, that are required. Additionally, new standards were introduced which dictate overall taxiway geometry to decrease the potential for incursions, incidents, or confusing layouts. These changes have had a significant impact on the airport design and several taxiway system geometry updates have been identified at airports nationwide. These updates are not required immediately, however, as airports conduct development projects which impact the taxiway systems, the updates and reconfigurations should be included as part of that development.

At SEF, several updates to the overall taxiway system have been identified as part of the master planning effort. These updates include shifting of connector taxiways, removal of taxiways that are no longer required or no longer meet FAA design standards, and construction of partial or full-length parallel taxiways to allow access to future development areas. All new taxiways have been planned to meet current FAA design standards based on the critical aircraft identified for each area of the overall taxiway system.

Inadvisable Airfield Geometry

Inadvisable airfield geometry includes pavement which is non-compliant with updated airfield standards, and pavement geometry prone to high activity with multiple intersecting centerlines. This can include runway, taxiway and apron pavement and intersections. Similar to the updates that are necessary to meet taxiway design standards, updates to alleviate inadvisable airfield geometry should be made as development projects are completed that impact these specific pavement areas.

At SEF, there are two areas with inadvisable geometry:

- Taxiway Connector A3; and,
- Apron edge taxiway connectors that allow for direct runway access.

Aircraft Run Up Areas

Aircraft run up areas, also referred to as holding bays or holding pads, are crucial for efficient flow on airfields. These are used by pilots to perform their final pre-flight procedures, including instrument and engine performance checks, as well as to hold while waiting for departure clearance or other ATC instructions. They should be designed to provide a clearly marked area for pilots to park that will keep their aircraft clear of the active taxiway. As with many of the other changes that the 2012 update to the airport design AC made, new standards for run up areas were also introduced. Run up areas should provide aircraft the ability to bypass one-another while providing proper wingtip clearances using taxiway centerline markings and other visual cues such as grass islands, where applicable.

SEF currently has run up areas at the Runway 1 and 19 thresholds. An additional run up area has been proposed at the Runway 1 threshold on the proposed east parallel taxiway to accommodate final pre-flight procedures and while holding for departure clearance or other ATC instructions.

Annual Service Volume

There are three metrics that describe the capacity of the Airport in simple terms. Those metrics are Hourly VFR Capacity, Hourly IFR Capacity, and Annual Service Volume (ASV). ASV is a measure of the number of annual operations that can occur at the airport without incurring delay, also referred to as annual capacity. Calculating the capacity metrics is completed using the throughput method outlined in FAA AC 150/5060-5, *Airport Capacity and Delay*. Several parameters are considered when calculating the VFR and IFR Hourly Capacity, such as Instrument Approach Procedures (IAP), Visual Flight Rules (VFR), and Instrument Flight Rules (IFR). ASV is calculated based on the existing runway configuration, aircraft mix, and the parameters and assumptions identified herein, and incorporates the hourly VFR and IFR capacities calculated previously. Additional details on the calculation are provided in Section 4.2.3.

Based on those formulas, the VFR Hourly Capacity at SEF was calculated to be 109 and 111 operations per hour depending on wind direction. The IFR Hourly Capacity calculations use many of the same assumptions as the VFR Hourly Capacity calculations but utilize a different set of formulas because of the lower visibility associated with IFR operations. The IFR Hourly Capacity at the Airport is 63 aircraft operations per hour. This lower number of operations is primarily because of the greater aircraft separation requirements and the instrument approach capabilities of the Airport.

ASV is used as a guide in determining when airport development should occur in order to meet the growing demand. FAA Order 5090.5, *Formulation of the NPIAS and ACIP*, states that planning for a new or extended runway to increase hourly capacity should begin once the airports demand reaches 60 percent of the ASV. Development should begin once the airports demand reaches 80 percent of the ASV, or within 5-years of that point. Based on the FAA approved forecast, the ASV at SEF was calculated to be 101,073, with current annual operations totaling 72,670, or 72 percent of the ASV. **Table 1-7** presents the annual demand compared to the current ASV throughout the 20-year planning period.

Table 1-7 ASV to Operations Comparison

Year	ASV	Total Annual Operations	% of ASV
Base Year (2017)	101,073	72,670	72
+5 yrs (2023)		84,275	83
+10 yrs (2028)		93,349	92
+20 yrs (2038)		122,055	121

Based on the comparison of the ASV to the forecast annual operations, SEF operations will reach the calculated ASV at the prior to the end of the 20-year planning period, with operations surpassing 80 percent of the ASV within 5-years and reaching 121 percent of the ASV at 20-years. For this reason, planning for capacity enhancements were identified in the facility requirements and included in the overall airport development alternatives.

Hangar Facility Requirements

Many of the hangar facility requirements are connected to the number, type, and frequency of aircraft operations and to the number of aircraft based at the airport. Available hangar and apron facilities are some of the most crucial facility requirements at the Airport and are an important part of the planning analysis. Chapter 4 of the Master Plan document presents detailed analysis of the hangar availability and the projected need for new hangars. Information presented in section 4.6.1, Aircraft Storage Hangars, shows a current and future deficiency at the Airport in Conventional Hangars.

Aircraft Parking Apron

The Airport has a single large apron comprised of multiple aircraft parking areas. In 2017, at the request of the FAA, a detailed analysis of the aircraft parking apron was conducted. The purpose of the study was to determine the amount of apron space that was needed to accommodate the airports current operations. The study found that due to the unique operational environment of the airport, being connected to the Sebring International Raceway and with the multitude of annual events held at the airport, that the entirety of the current apron space is necessary to support current operations at the airport, with some additional itinerant aircraft parking positions for future growth. A copy of the 2017 Apron Justification report is included in **Appendix C**. Further details are included in Section 4.6.2, General Aviation Aprons.

General Aviation Terminal

The existing General Aviation (GA) terminal is described in Section 2.2.2.1, Fixed Base Operator and General Aviation Terminal. Chapter 5 of ACRP Report 113, *Guidebook on General Aviation Facility Planning*, provides general guidance as to the sizing of GA terminals. The primary consideration is that the facility can support the number of pilots, passengers, and visitors which could reasonably be expected during peak hour operations. GA facility sizing can range from 100 to 150 square feet per person. For planning purposes, the ACRP suggests using a factor of 2.5 people per-peak hour operation (pilots and passengers). Calculations shown in Section 4.6.3.2, GA Terminal, show an existing and future surplus in terminal square footage.

Preferred Airfield Development Alternative

The airport development plan outlines the necessary development and facility requirements to meet the forecast demand, ensure competitiveness, financial viability, and to provide the Airport and surrounding community with the greatest overall benefit.

Alternatives have been developed for airside and landside improvements. Airside alternatives include development affecting runways, taxiways, and navigational aids. Landside alternatives include development such as aprons, hangars, buildings, and access roads.

Preferred Development Alternative

The preferred development alternative incorporates runway, taxiway, and various landside improvements. Improvements are necessary to address future capacity constraints as operations approach the airports ASV, as well as existing and future landside constraints on the west side of the airport. Plans for development of significant landside area for commercial and industrial development have been in development for some time. Area's designated as the "Catalyst Site" and "Commerce Park" are identified on south and east of the runways, with landside access being provided by the redesigned Carroll Shelby Road. Airside access via an east parallel taxiway to Runway 1-19 and partial parallel taxiways to Runway 14-32 are included in the preferred alternative in order to support commercial and industrial aeronautical development. **Table 1-8** provides a listing of all major development items included in the preferred development alternative. Detailed information is provided in Chapter 5, Airport Alternatives Analysis.

Table 1-8 Preferred Airfield Development Alternative Major Changes

Development Item	Description
Runway	Runway 1-19 extension to 7,000-feet.
Runway	Runway 14-32 RDC change to B-II small aircraft and implementation of declared distances.
Landside Access	Realignment of Carroll Shelby Road
Landside Access	Extension of Challenger Drive
Rail Access	Realignment of the rail to allow for extension of Runway 1-19.
Taxiways	Relocation of apron edge taxiway connectors.
Taxiways	East parallel taxiway to Runway 1-19.
Taxiways	Partial parallel taxiways to Runway 14-32.
Taxiways	Relocation of Taxiway Connector A3.

Capital Improvement Plan

The Capital Improvement Plan (CIP) is a tool for outlining planning and development needs over the 20-year planning period. The projects included in the CIP are vital to achieve the future goals and objectives of the airport and meet the growing demand. The projects included in the CIP are prioritized based on meeting the goals of the airport while addressing all capacity, safety, and security needs. The CIP is broken down into short-term (1-5 years), medium-term (6-10 years), and long-term (11-20 years) needs. Project phasing also considers anticipated funding availability in each year. The CIP is presented in **Table 7-2**, **Table 7-3**, **Table 7-4**, and **Table 7-5** within Chapter 7, Capital Improvement Program.

Covid-19 Master Plan Disclaimer

Airport master planning is intended to aid an airport in achieving its future goals and objectives by documenting existing conditions, observing past trends to project future growth expectations, and providing a development plan of future facilities needed to meet the airport's future demands. This Airport Master Plan Update (AMPU) commenced in July 2017, and the predicted growth in aviation activity was based upon official FAA historical records on aircraft operations and passenger enplanements reported from 2000 through 2017. The Federal Aviation Administration (FAA) finalized their review and approved the aviation activity forecasts associated with this AMPU on March 1st, 2018.

On March 25th, 2020, the United States President approved disaster declarations for Florida and other states, resulting from what is currently a global pandemic (the Pandemic) of coronavirus disease 2019 (COVID-19) also commonly known as the 'coronavirus pandemic', caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2).

The Pandemic's outbreak originated from Wuhan, the capital city of the Hubei province, People's Republic of China and was first identified in a person on November 17, 2019, more than one month earlier than doctors began noting cases of the disease. The World Health Organization (WHO) declared the outbreak a Public Health Emergency of International Concern and a global pandemic on January 30 and March 11, 2020 respectively.

Globalized aviation from Wuhan was evidently the main source of the rapid international spread of the Pandemic. Before being closed due to the Pandemic on January 23, 2020, the Wuhan Tianhe (translated 'Sky River') International Airport was the busiest airport in central China, serving nearly 21 million passengers in 2016, making it the fourteenth busiest passenger service airport in China. That airport provided direct international connections to destinations such as New York City, San Francisco, London, Tokyo, Rome, Istanbul, Dubai, Paris, Sydney, Bali, Bangkok, Moscow, Osaka, Seoul, and Singapore, the combination of which could link an international passenger to practically every international airport in the world.

The global air transport impact from the Pandemic has been unprecedented. Since the birth of commercial passenger aviation in 1926, no other pandemic or event, including the September 11, 2001 Terrorist Attacks (9/11), has been as catastrophic to aviation demand. By comparison, overall revenues from the airline industry fell by $23 billion in the wake of 9/11, whereas forecast implications of the Pandemic range from $63 to $113 billion lost revenues.

Airports Council International (ACI) released an updated model in May 2020 which forecast prolonged and more widespread impacts and effects of the Pandemic, resulting in worse predictions for traffic and revenue losses for airports across all regions. ACI's current prediction estimates a reduction of more than two billion passengers at the global level in the second quarter of 2020 and more than 4.6 billion passengers for all of 2020. That represents an estimated decline in total airport revenues on a global scale of $39.2 billion in the second quarter and more than $97 billion for 2020.

In effort to reduce those impacts to U.S. airports and airlines, among other industries, U.S. Congress passed the Coronavirus Aid, Relief, and Economic Security (CARES) Act (H.R. 748, Public Law 116-136), which was signed into law by the President on March 27, 2020. The CARES Act included $10 billion in funds to be awarded as economic relief to eligible U.S. airports which were affected by the prevention of, preparation for, and response to the Pandemic.

The projections and forecasts in this AMPU are unlikely to occur by their presented timelines. However, given the almost inevitable recovery of the aviation industry, the levels of aircraft operations and passenger enplanements predicted by this AMPU should increase the shelf life of the plans presented to facilitate that growth. Furthermore, the timelines presented in the forecast chapter should be viewed as Planning Activity Levels (PALs) to understand that future airport improvements are tied to such levels and not dates on a calendar. This AMPU focusses on four PAL periods; immediate, intermediate, mid-range and long-term, which would traditionally be associated with the first five years, then ten, fifteen, and finally 20 years from the baseline year of the forecasts, in this case 2017. Given the uncertainty caused by the Pandemic, development presented in this AMPU may require further justification prior to its implementation.

Introduction

1. Introduction

1.1. Purpose, Goals, & Objectives

The purpose of this study is to provide a 20-year development program that will create the safe, efficient, economical, and environmentally responsible airport facility capable of facilitating the demand for aviation services which can be reasonably expected, meet the development goals of the Sebring Airport Authority (SAA), and create additional public value for residents in the Sebring area and the entire aeronautical community.

Consistent with this purpose, the following goals and objectives were established to guide the development of a 20-year visioning for the Airport. These goals will guide the project development alternatives and serve as the ultimate criteria for the selection of a preferred development plan. The objectives coupled with each goal aim to create measurable milestones to be addressed within this planning effort.

1.1.1. Goal No. 1

Provide an airport that is safe and reliable.

Objectives:

- Provide navigational aids, flight support services, and meteorological facilities which enhance the safety and reliability of operations under all weather conditions.
- Protect FAA-mandated safety areas and protection zones, and other design 'imaginary surfaces.'
- Minimize obstructions to air navigation.
- Develop facilities to meet the demands of the proposed critical aircraft.

1.1.2. Goal No. 2

Continue to meet and enhance the level of service provided to all airport users and develop an airport facility that will provide adequate capacity to fill its role as a general aviation (GA) airport in southcentral Florida.

Objectives:

- Provide adequate runway capacity for estimated demand in terms of annual and hourly operations.
- Provide adequate runway length to meet forecasted regional market and operational needs.
- Provide opportunities for development of services associated with corporate aviation, industrial aviation, and other GA uses.
- Provide necessary ancillary facilities and equipment to support anticipated operations at SEF.

1.1.3. Goal No. 3

Provide guidelines for future development, while satisfying anticipated aviation demand.

Objectives:

- Provide adequate airside and landside facilities to meet anticipated demand while adhering to FAA safety and design standards.
- Effectively market commercial and non-commercial GA operators and facilities.
- Develop synergies between SEF and its community sponsors and beneficiaries that will benefit the Airport and the entire region.

1.1.4. Goal No. 4

Develop SEF in a manner which strives to be a 'good neighbor' by minimizing negative environmental impacts.

Objectives:

- Identify the major environmental issues of concern, including noise impacts.
- Minimize potential environmental impacts in developing future facilities.
- Create an efficient development layout to provide ease of air and ground access.
- Ensure that noise mitigation measures are identified for potential future airport noise impacts.

1.1.5. Goal No. 5

Promote the development of compatible land uses in the Airport's vicinity.

Objectives:

- Promote land use planning and development objectives for on- and off-airport land uses which are compatible with the anticipated long-range needs of the Airport and community.
- Designate areas for future development (i.e. on-Airport land uses).
- Encourage the adoption of airport protective zoning.

1.1.6. Goal No. 6

Develop an airport that supports local and regional economic goals while accommodating new opportunities or shifts in development patterns.

Objectives:

- Establish the Airport's importance to the community as one of the City's and County's main assets poised for job growth, as an economic driver and engine.
- Realize and highlight the symbiotic relationship between the Airport's economic engines and neighboring residential areas such as Spring Lake Village.
- Achieve a level of service and user convenience such that the Airport is a positive factor in regional economic development decisions.
- Achieve capacities of the airfield so that the Airport may be an attractive location for corporate operations, aircraft maintenance and/or manufacturing operations, or other aviation-related businesses.
- Provide appropriate and achievable commercial opportunities on and around the Airport.
- Assure economic feasibility through equitable distribution of user charges, capital investment, maintenance, and operating costs, while keeping overall costs within an acceptable level.
- Identify financial alternatives and funding sources available for the implementation of aviation related and non-aviation related development projects.
- Develop an airport layout plan which easily integrates with existing and proposed transportation infrastructure and encourages economic growth.

1.1.7. Goal No. 7

Develop an airport that is consistent with federal, state, regional, and local plans.

Objectives:

- Develop SEF in accordance with local comprehensive plans, land use plans, and transportation plans.

- Ensure applicable FAA standards for airport development are met.
- Comply with FAA established safety area and design criteria.

1.1.8. Goal No. 8

Identify the Airport's strengths, weaknesses, and/or opportunities associated with up and coming technological advances in transportation.

Objectives:

- Identify future aviation needs concerning unmanned aerial vehicles (UAVs).
- Address the future needs of autonomous vehicles and aircraft.
- Continue to provide, utilize, and improve the Airport's rail assets

These goals and objectives reflect policy goals to be reached throughout the planning process. These goals include the ultimate development of facilities to serve the existing and future aviation needs of the region, and provisions for the type of development that will yield the most public benefit from the required investment. Finally, these goals must be manageable within existing limitations of funds and design principles.

1.2. Airport Organization

SEF is a publicly owned airport and is operated by the Sebring Airport Authority (SAA). The Sebring Airport Authority was established by the Florida Legislature and operates pursuant to Chapter 189, Florida Statutes. SAA also operates pursuant to the Laws of Florida, Chapter 2005-300. The Sebring Airport Authority was established to acquire, lease as lessee or lessor, construct, reconstruct, improve, extend, enlarge, equip, repair, maintain, and operate the Sebring Regional Airport and Industrial Park. The Sebring Airport Authority also operates and maintains foreign trade zone status.

1.3. Review of Existing Studies

Multiple SEF studies have been completed or are in progress. The following subsections provide a summary of prior and current studies that will be valuable when determining the Airport's future needs. It is important to become familiar with these studies when analysing future airport needs to ensure compatibility, efficiency, and effectiveness with local, State, and federal plans or to address issues regarding potential future land use incompatibilities.

1.3.1. National Plan of Integrated Airport Systems (NPIAS) – FAA

The National Plan of Integrated Airport Systems (NPIAS) is submitted to the US Congress in accordance with Title 49 United States Code (U.S.C.), Section 47103. The current report covers the Fiscal Years 2017 to 2021, and it identified 3,340 public-use airports (3,332 existing and 8 proposed) that are significant to national air transportation with an estimated need of $32.5 billion in Airport Improvement Program (AIP)-eligible projects within the determined fiscal years. That AIP funding was determined based on the identified airports' needs during next five fiscal years. The primary purpose of NPIAS is to determine the identified airport's specific eligibility to receive a portion of the grant fund under the AIP.

Currently, SEF is classified as an eligible Public Use, Regional General Aviation Airport under the NPIAS. This is due to the Airport serving to support regional economies with the higher levels of activity through the facility. In terms of the GA Requirement, the Airport must have a minimum of 10 based aircraft and be within a 20-mile vicinity of a NPIAS qualified airport. SEF has a total of 87 based aircraft and is within a 20-mile vicinity of another NPIAS airport (Avon Park Airport (AVO)). Both conditions place them under a qualified NPIAS category.

1.3.2. Florida Aviation System Plan – FDOT

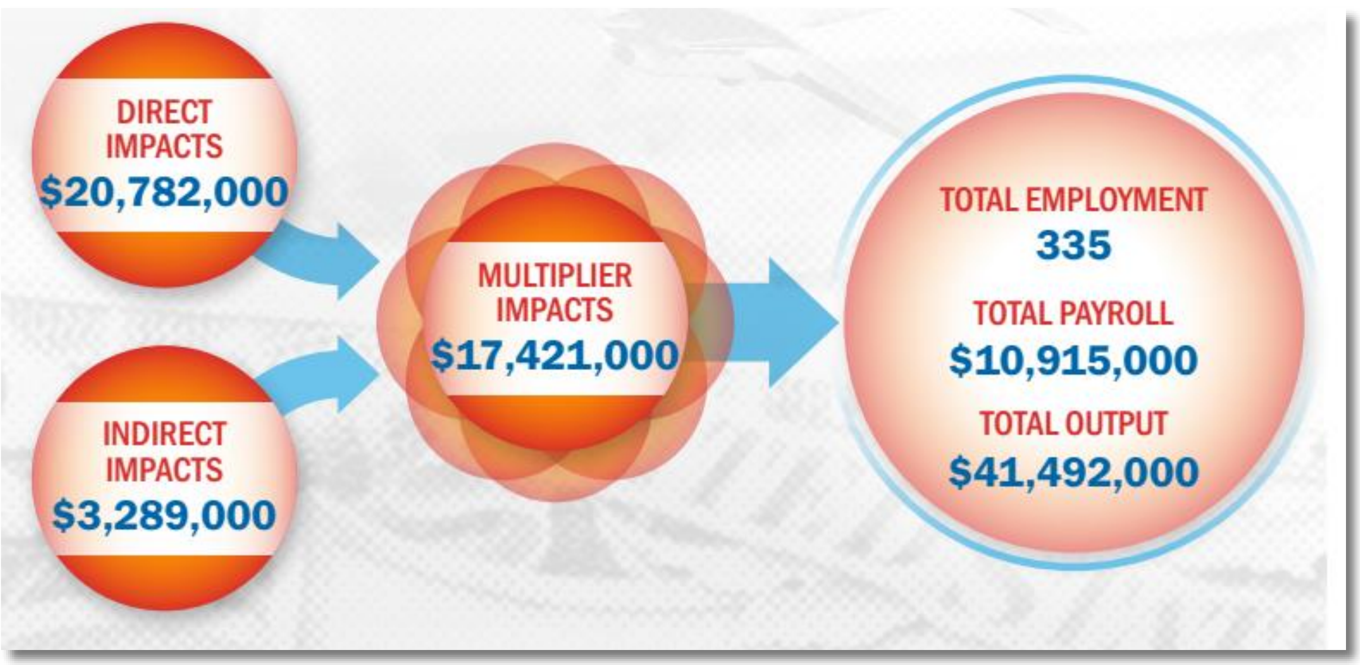
In 2005, The Florida Department of Transportation (FDOT) along with the Federal Aviation Administration (FAA) and Florida's Public Airports developed the Florida Aviation System Plan (FASP). In accordance with the Continuing Florida Aviation System Planning Process (CFASPP), the FASP identifies seven strategic goals and the appropriate approaches, analysis, and overall recommendations to achieve them. Those goals include having a well-planned system of airports for the projected capacity growth in the coming years. That includes identifying major development projects for all of Florida's airports and accurate long range plans to ensure the capable planning for the future. The FASP is also attempting to provide a diversified system of airports that is capable of meeting user demands by providing convenient air travel.

In the most recently updated (2012) FASP, the plan predicted there would be substantial growth at SEF in the coming years. This growth is focused on both the optimal location the airport is situated (within 90 miles of six international airports) as well as the increasing economic diversification which is taking place on the Airport's industrial park area.

1.3.3. Florida State-wide Aviation Economic Impact Study – FDOT

In August of 2014, the FDOT completed the Florida State-wide Aviation Economic Impact Study. That study analyzed the total economic impact coming from airports within the state, which included both direct and indirect impacts. Certain factors considered included airport tenants, businesses located at the Airport, and airport construction projects to name a few. It was calculated that as of August 2014, SEF contributes over $41 million annually to the local economy. This is generated from direct impacts of $20.78 million and indirect impacts of $3.29 million, and multiplier impacts of $17.42 million. Along with this, there is a calculated total employment of 335 which contributes a total of $10,915,000 in annual salary. **Figure 1-1** depicts the Airport's economic impact as reported in the FDOT Sebring Economic Impact Report.

Figure 1-1 - Sebring Economic Impact Report - FDOT



Source: Florida Department of Transportation Sebring Economic Impact Report

1.3.4. Runway 1-19 Extension Study

The original runway extension justification report was created in 2007, which analyzed the Runway 1-19 extension to a total of 7,000 feet. After being approved by the FAA, an Environmental Assessment (EA) was initiated in 2009 to gather potential impact considerations, which is still pending a final determination from the FAA. A 2013 update to the justification report reinforced the need for a runway extension with newly acquired information on operator demand.

Utilizing the FAA Advisory Circular (AC) 150/5325-4B, *Runway Length Requirements for Airport Design*, it was identified that the FAA guidance provides justification for the Airport's scenario to extend Runway 1-19 to 6,700 feet total length. It was noted that the runway length was negatively impacting the economic development for SEF and would continue to restrict the overall development due to the incapability of accommodating larger aircraft. Furthermore, a survey was conducted of current organizations occupying SEF's property to conduct business.

Organizations that utilize the Airport's airfield facilities noted that the existing runway length limits their capability to either transition to larger aircraft or restricts fuel and payload operating weights of existing aircraft. By extending the runway to the recommended 7,000 feet length, multiple limitations could be lifted, enabling current and potential users to reduce or eliminate load limitations. It would also accommodate the forecasted aircraft in the recent AMPU and allow SEF to market to larger aircraft users in the area.

1.3.5. Apron Capacity Study

A 2017 report reinforced the Airport's operational need for its entire existing apron area based on growing annual demand. It was stated that there can be no loss of operational capacity, either through the continued deterioration of the apron pavement or removal of present apron pavement.

Utilizing the ACRP Report 113: Guidebook on General Aviation Facility Planning, a full aircraft parking requirement analysis was conducted for the Airport. That analysis took into consideration current apron area, operational uses, and configuration, and then cross referenced the determined demand for such. Factors taken into consideration included but were not limited to; annual expos/events, large aircraft parking, based aircraft, and more. By means of the ACRP Report 113, it was determined that the full extents of the existing apron area was, and is, needed at SEF, and the operational layout of the apron needs to be reconfigured to optimize aircraft movement and parking.

1.3.6. Florida's Heartland Economic Region of Opportunity (Formerly FHREDI) – Catalyst Site Selection Study

FHERO is a 501.6 non-profit organization that provides economic development support throughout the South-Central region of Florida with funding provided by local cities and counties, as well as some private contributions. FHERO conducted a site search for viable areas in the six-county regions covered by the organization, which is identified as the South Central Rural Areas of Critical Economic Concern (RACECs). The potential sites that were identified were either shovel ready/certified sites with infrastructure in-place, readily developable, or developable with certain conditions. The following criteria were used to evaluate each of those potential sites:

- Reasonable commute from major population centers
- Accessibility to major highway(s)
- Accessibility to existing rail service or capability of building rail sidings/spur
- Qualified work-force
- Access to sewer and water
- Ability to maximize opportunities and provide broadband solutions
- Expandable in stages
- Viable site for a "to-be-determined" company or clustering of companies in a specified targeted industry
- Ability to attract "higher value-added" companies

Utilizing the above criteria and conducting further analysis on the property, SEF was selected by FHERO as the location for a catalyst project located within the South Central RACEC. The selected catalyst site on airport property is a 100-acre development area, which is located on the east side of SEF property, and at the north end of Carroll Shelby Drive (South Access Road). As the needed infrastructure improvements are completed, the Catalyst Site is planned for future medical related commercial, light industrial, research, or other associated businesses at the Airport.

1.3.7. Catalyst Infrastructure Project

Cited on the previous ALP, three major project proposals for SEF have been linked together to create the Catalyst Infrastructure Project. Due to permitting purposes, the following three projects are grouped together as a sole initiative:

- Catalyst Site/Carroll Shelby Drive Project
- Commerce Park Project
- Taxiway Bravo Project

All three projects have been designed, permitted, and bid documents have been "shelved" until funding can be secured for construction.

The Airport was selected by FHERO, to be established as a "catalyst" site to further promote industrial organizations to be located on airport property. The identified development site will have all the necessary infrastructure improvements to better accommodate industrial organizations. Furthermore, FHERO can then market the site as ready to use with the associated credible economic assets.

1.3.8. Runway Protection Zone (RPZ) Alternatives Analysis

In 2014, an alternatives analysis was created for the Runway 36 RPZ. This analysis contains alternatives for Carroll Shelby Drive, which runs directly through the RPZ, creating a potential hazard area on airport property. Due to the proposed Catalyst Infrastructure project, which will create a large commercial development in the south and eastern areas of the airport property, Carroll Shelby Drive will need to be improved and realigned to serve this future development. The RPZ analysis is to show the potential impact in regard to the proposed road realignment and improvements. Purpose and need for this road realignment is outlined within the report, and shows the importance for improved access to the future catalyst site.

1.3.9. Environmental Assessments & Studies

1.3.9.1. 2009 Environmental Assessment Proposed Runway 1-19 Extension

As stated previously, an Environmental Assessment was conducted for the proposed extension of Runway 1-19 to 7,000 feet. The analysis was conducted by the URS Corporation. It was determined that due to the nature of the project, and the specific location where development will be taking place, an Environmental Assessment would be best suited towards identifying any potential impacts to the environment.

The report inventoried all existing conditions on SEF property including, but not limited to; water resources, floodplains, wildlife habitats/endangered species, and wetland habitats. It was concluded that environmental impacts caused by the runway extension would be concentrated in the areas of storm water management/water quality, floodplains, and wetlands. Mitigation procedures were outlined in the EA for each area of concern. A final determination from the FAA is still pending at this time.

1.3.9.2. 2014 Boeing 737 Noise Impact Analysis

In 2014, an airport noise analysis was conducted and completed for the addition of monthly operations of a Boeing 737 aircraft at SEF. The Day-Night Average Sound Level (DNL) was measured to gain a more robust clarification on potential noise impacts for surrounding areas. The analysis found that the addition of four landings and four take-offs per month would have an extremely small impact on the Airport's existing noise contours. An estimated growth of less than 0.6 percent in the noise contours was recorded for the Boeing 737 aircraft.

1.3.9.3. 2015 Burrowing Owl Survey

The Burrowing Owl is a protected species under the Federal Migratory Bird Treaty Act. Due to this status, the owls, their burrows, and their eggs are protected from harassment and/or disturbance by Florida State law.

The survey was conducted over a two-day period, where a team investigated the owl's burrows and identified both the location and quantity of owls present on airport property. Of the 45 burrows that were investigated, there was owl activity at 26 of those burrows. It was recommended that since the survey was only conducted over the span of two days, a more extensive survey should be conducted to fully comprehend quantity of residence species as well as locations of burrows to avoid future conflicts.

1.3.9.4. 2016 Identified Solar Development Locations

Initiating solar development on SEF property has been deemed feasible in terms of developable area available. Solar energy can be the most feasible renewable energy system on airport property, due to its low profile and the availability of open property on the Airport. Areas identified include two locations in the northeast of the airport property, as well as one location in the south/southwest. It was recommended that further analysis be conducted to determine feasibility of these locations in regard to other installation constraints.

1.4. Key Planning Issues

The SAA identified the following key issues to be considered during the development of the ALP and its associated drawings.

- Runway Extension
- Aeronautical & Non-Aeronautical Land Use Development

Inventory of Existing Conditions

2. Inventory of Existing Conditions

The development of an Airport Master Plan update (AMPU) and associated Airport Layout Plan (ALP) update for the Sebring Regional Airport (SEF) requires the collection and evaluation of baseline information relating to the Airport's property, facilities, services, location, and tenants, as well as access, utilities, and environmental considerations. The collected information will be used in determining any necessary airport improvements or expansions that are indicated by aviation activity forecast and the demand/capacity analyses. The information covered in this chapter was obtained through a variety of sources, including Airport site visits, interviews with Airport staff and tenants, and examination of airport records and other public documents. This chapter includes the following sections.

- Airport Background
- Airport Facility Inventory
- Airspace Structure
- Regional Setting and Land Use
- Environmental Considerations

2.1. Airport Background

SEF is located on approximately 1,768 acres in Highlands County, Florida. The airport is located approximately 6-miles southeast of the City of Sebring, which is easily accessible by Kenilworth Blvd. The Airport is less than one mile north of U.S Highway 98, which connects into US Highway 27 to the west. US Highway 27 connects the City of Sebring to the rest of the Heartland Region of Florida.

As part of the ALP update, the existing airport reference point (ARP) has been calculated to be latitude 27°27'23.00''N and longitude 81°20'32.62''W. The Airport's elevation is approximately 61.6 feet above mean sea level (MSL). **Figure 2-1**, Location Map, illustrates the Airport's location within the State of Florida. **Figure 2-2**, Vicinity Map, illuminates the Airport in relation to its surrounding communities.

2.1.1. Airport History

The Airport was originally established as Hendricks Army Airfield, which was used heavily during World War II as a Heavy Bomber Training School for B-17 and B-24 pilots. In 1941, the airfield underwent construction and the first aircraft landed on the field in 1942 to commence training. Training operations remained strong from August 1942 until the war was officially deemed over. The Army airfield was then converted to surplus property and was handed over to the City of Sebring in 1946 under the name of Sebring Air Terminal.

On February 21, 1946, the City was awarded a permit to operate Hendricks Field as a civilian airport. Shortly thereafter, the Sebring Flying Service introduced the first commercial operation from Hendricks Field. The City of Sebring agreed to take over management of the Airport in January 1947. The Airport's name was changed to Sebring Air Terminal to avoid confusion with the Airport's previous function and to attract industry to the area. Eventually, the Federal government released all the Hendricks Field properties to the City of Sebring and in June 1947 the City purchased the railroad system at Hendricks Field for a sum of $4,000.

Between 1950 and 1952 the first automobile racing events were held at Sebring Airport at the suggestion of aeronautical engineer, Alec Ulmann. These early racing events were the first sports car endurance races held in the U.S. In March of 1952, the first 12 hours of Sebring race was held at the Airport. In November 1958, the City Council passed an ordinance establishing an Airport Advisory Committee to make recommendations to the City relative to the operation, management, and control of the Sebring Air Terminal. In 1967, the City turned over the deed of the Airport to the Sebring Airport Authority (SAA) after it was officially established by the Florida State Legislature.

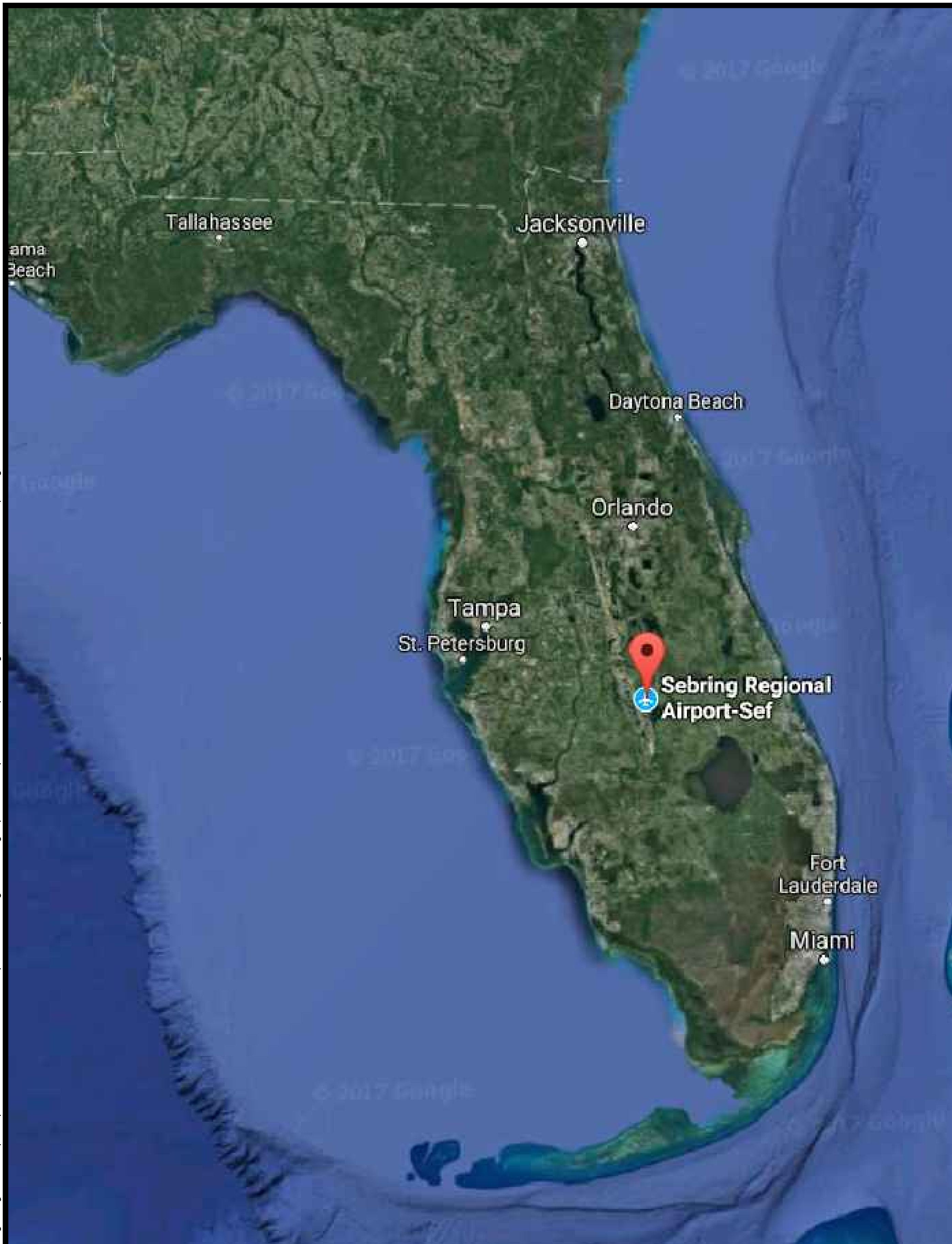
In the early 1970s, an industrial park was developed, and the name of the Airport was changed to “Sebring Airport and Industrial Park”. In 1981, SAA sold 35 acres of land to the Sebring Utilities Commission to form the current airport property boundaries. The Airport is now identified in the Florida State Aviation System as the Sebring Regional Airport (SEF).

2.1.2. Sebring International Raceway

As stated previously, the Sebring International Raceway was commissioned in 1952 with the first “12 Hours of Sebring”, starting a legacy that continues today. It is currently owned by NASCAR vis IMSA Holdings, LLC, through its own subsidiary Sebring International Raceway, LLC. IMSA Holdings, LLC, purchased the raceway in 2012 as part of its acquisition of Panoz MSG.

The most notable event that occurs annually at the Sebring International Raceway is the 12 Hours of Sebring. Only a handful of airports around the country are host to auto racing events, and arguably none have done so for as long as SEF. It should be noted that the Sebring International Raceway can be utilized without disrupting operations at the Airport.

This motorsport endurance race for sports cars is the current second round of the United Sportscar Championship and takes place in March each year. There are many other events that occur at the raceway during the year, including drag racing, and other smaller race events held by racing organizations. Certain automobile manufacturers have been known to utilize the track for new model testing due to the course’s demanding driving environment.



ATKINS	Sebring Regional Airport Airport Layout Plan Update		Location Map	Figure. 2-1

Plotted By: hask8597
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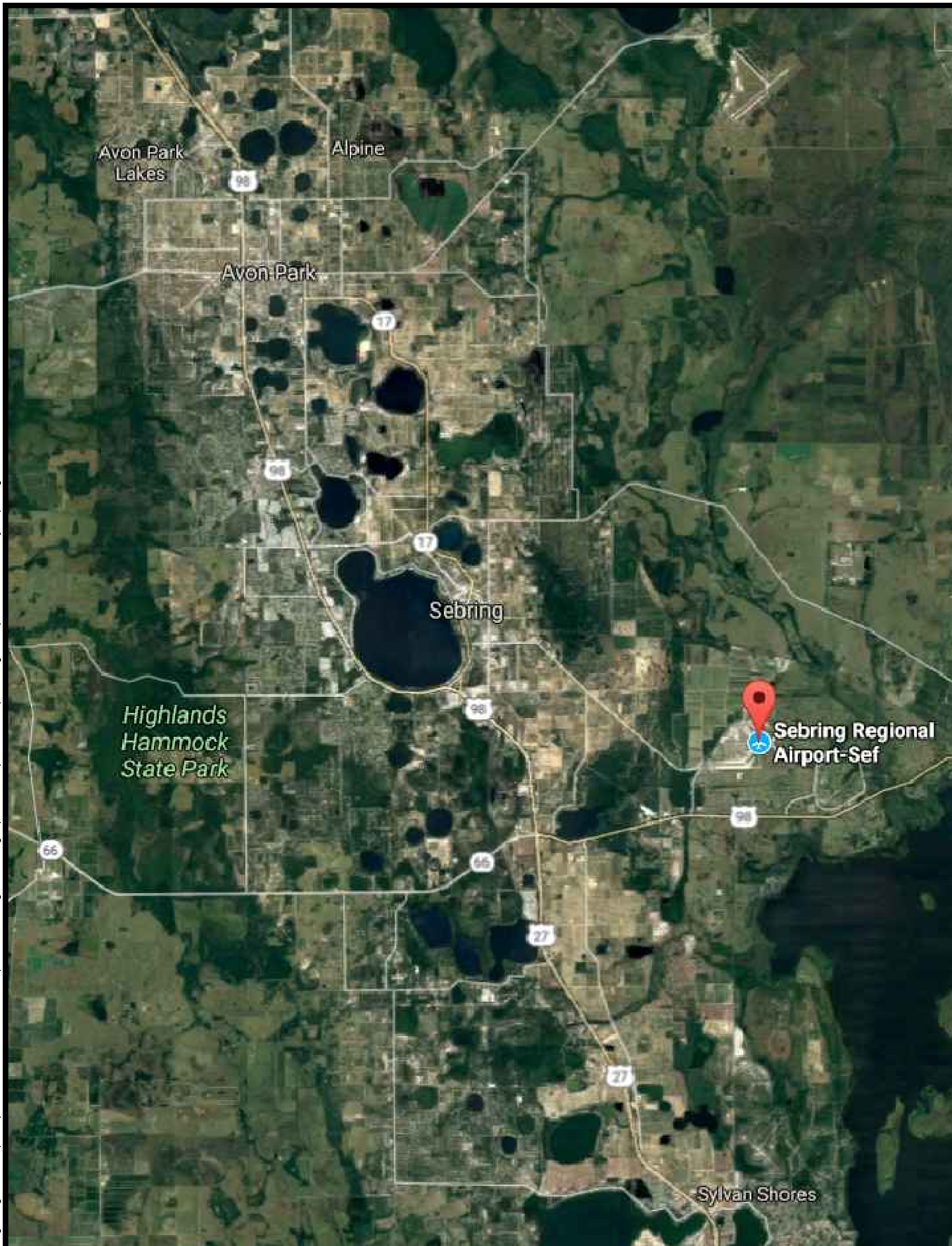

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Sebring Regional Airport
Airport Layout Plan Update

Vicinity Map

Figure. 2-2

2.1.3. Special Events

Almost every month of the year, Sebring Regional Airport and/or the Sebring International Raceway host a number of aviation or automotive events which typically run for three to four days each, with organizers, sponsors, and participants arriving days beforehand. While the aviation events typically generate increased operations of small GA aircraft, the automotive events attract large corporate aircraft to the airport. The annual events typically include:

January

- Hoosier Sports Car Club of America (SCCA) Hoosier Super Tour at Sebring
- National Auto Sport Association Event

February

- International Motor Sports Association (IMSA) Winter Testing
- Indy Car Team Testing
- Porsche Club of America Event

March

- 12 Hours of Sebring Race Week
- Sportscar Vintage Racing Association (SVRA) Vintage Classic
- Trans Am Championship

April

- National Auto Sport Association Event

May

- International Aerobatic Club (IAC) Competition

June

- National Auto Sport Association Event

July

- Formula & Automobile Racing Association (FARA) Sebring 500

October

- National Auto Sport Association Event
- Indy Car Team Testing

November

- International Aerobatic Club (IAC) East Coast Championships
- Indy Car Team Testing

December

- Indy Car Team Testing

2.2. Airport Facility Inventory

The identification of existing aviation facilities, their locations, and their abilities to meet the daily needs of airport users are vital elements to updating the AMP and ALP. The existing airside and landside facilities at SEF are defined in the following sections.

2.2.1. Airside Facilities

The Airport's existing airside facilities are described in the following sections. The facilities outlined are those which makeup the airside portion of the facility which includes runways, taxiways, airfield pavement conditions, lighting, markings, signage, apron areas, and then specialized airfield facilities.

2.2.1.1. Runways

The existing airfield runway configuration consists of two bi-directional runways. Runway 1-19 is considered the Airport's primary runway and is approximately 5,234 feet long, and 100 feet wide. The runway pavement section was fully reconstructed in 2012, and the asphalt surface is currently listed in good condition. Runway 14-32 is approximately 4,990 feet long and 100 feet wide. The pavement was rehabilitated in 2009 by cracking and sealing the existing concrete pavement and overlaying with asphalt. The asphalt surface is currently listed in good condition. Runway 14-32 intersects Runway 1-19 approximately 1,375 feet from the Runway 19 approach end.

In 2017 the Florida Department of Transportation (FDOT) conducted a Pavement Condition Number Development (PCND) evaluation on airports throughout Florida. This study provides an update to the pavement strength for each runway at the airport, as well as the calculated PCN. A copy of the evaluation report can be found in **Appendix A**.

A displaced threshold is utilized at the approach end of Runway 14. The displacement is to mitigate for obstacle penetrations to the approach surface caused by the rail line and access road that runs directly across the runway end (Ullmann Drive), and therefore decreases the usable runway available for landing on Runway 14. Runway information is provided in **Table 2-1**.

Table 2-1 - Runway Characteristics

Dimensions	Runway 1-19		Runway 14-32	
Length (feet)	5,234		4,990	
Width (feet)	100		100	
Surface Material (Condition)	Asphalt (good)		Asphalt (good)	
Markings (Condition)	Non-Precision (good)		Visual (fair)	
Load Bearing Capacity by Gear Type*				
SWL (pounds)	83,000		30,000**	
DWL (pounds)	126,000		45,000*	
Approach Slope	3.00˚		3.00˚ (no VGSIs)	
Effective Gradient	0.0%		0.1%	
Runway End Coordinates	Runway 01	Runway 19	Runway 14	Runway 32
Latitude	N 27° 26' 53.6612"	N 27° 27' 45.4919"	N 27° 27' 44.0152"	N 27° 27' 09.1821"
Longitude	W 081° 20' 34.9041"	W 081° 20' 35.0973"	W 081° 20' 49.7683"	W 081° 20' 10.4865"

Sources: FAA 5010, Assembled by Atkins, 2017.

SWL = Single Wheel Load, DWL = Dual Wheel Load, and 2DWL = Double Tandem Wheel Load

*Pavement strengths have been updated based on the 2017 FDOT PCND evaluation.

**Runway 14-32 is limited to the utility category (12,500 pounds single wheel).

2.2.1.1.1. Declared Distances

The FAA requires GA airports having certain operational limitations to publish declared distances for each runway. This information informs pilots what the available runway lengths are for different types of operations to maintain standard safety areas and protection zones. Declared distances include the following:

- **Takeoff Run Available (TORA)** – The runway length declared available and suitable for the ground run of an aircraft taking off.
- **Takeoff Distance Available (TODA)** – The TORA plus the length of any remaining runway or clearway beyond the far end of the TORA.
- **Accelerate Stop Distance Available (ASDA)** – The runway plus stop way length declared available and suitable for the acceleration and then deceleration of an aircraft aborting takeoff.
- **Landing Distance Available (LDA)** – The runway length declared available and suitable for an aircraft to land.

The declared distances for SEF are not published and/or not calculated. The below **Table 2-2** shows a general assumption of distances for each category for each individual runway:

Table 2-2 - Declared Distances

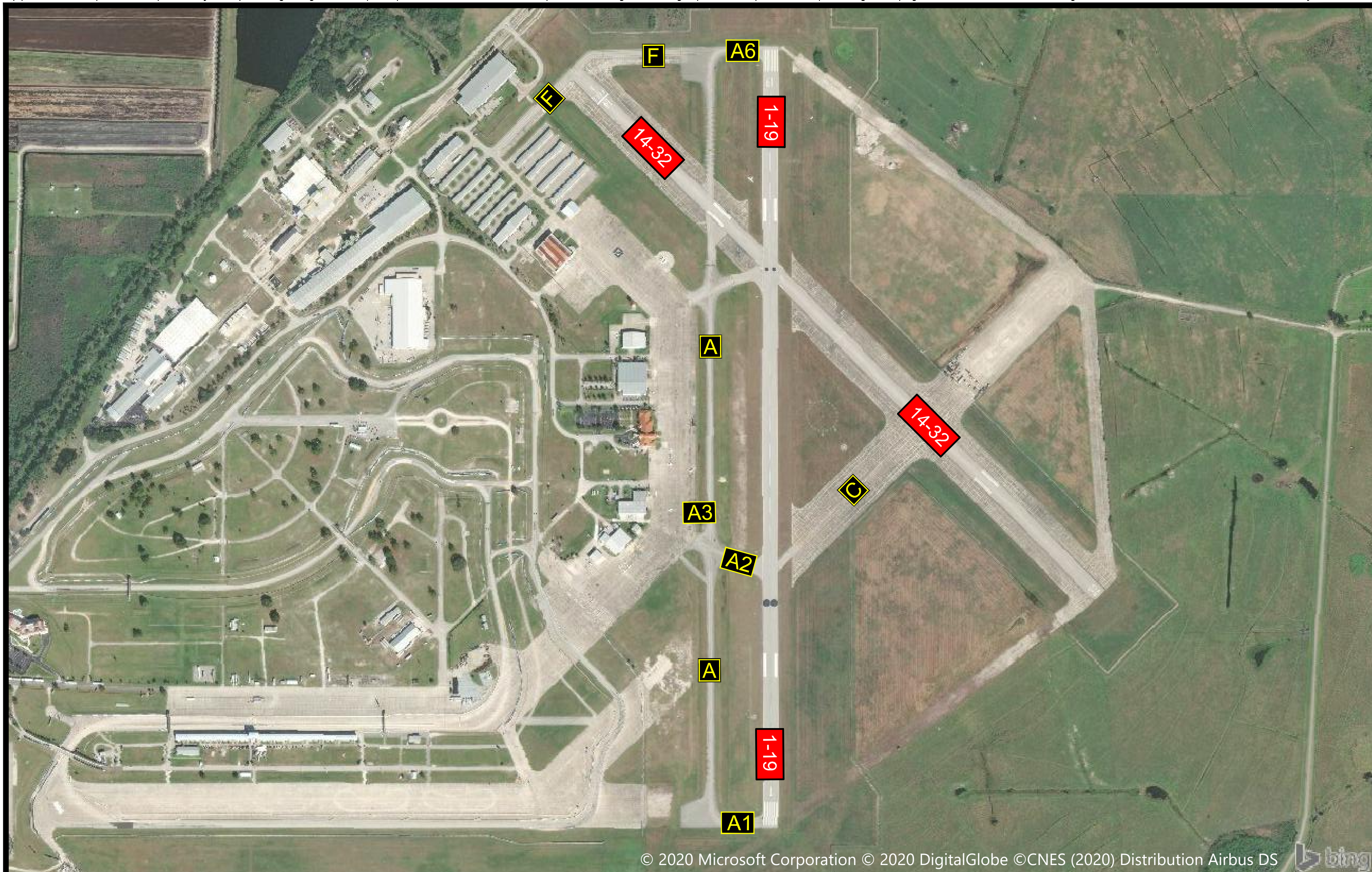
Runway	TORA (Feet)	TODA (Feet)	ASDA (Feet)	LDA (Feet)
1	5,234	5,234	5,234	5,234
19	5,234	5,234	5,234	5,234
14	4,990	4,990	4,990	4,701
32	4,990	4,990	4,990	4,990

Source: Atkins Analysis 2017

2.2.1.2. Taxiways

The Airport's primary taxiway, Taxiway A, provides access from the aircraft parking aprons and hangar facilities to the approach ends of Runways 14, 19, and 1. Taxiway A runs parallel and to the west of Runway 1-19, and provides runway exits approximately 1,750 feet from the Runway 1 end and approximately 3,500 feet from the Runway 19 end.. Taxiway A intersects Runway 14-32 approximately 1,250 feet from the Runway 14 approach end and is 50 feet wide and provides two run-up areas adjacent to the approach ends of Runway 1 and 19. Taxiway C connects Runway 1-19 and Runway 14-32, and is angled perpendicular to Runway 14-32. Taxiway C is located across from the Taxiway A2 connector at Runway 1-19. Taxiway F is located in the vicinity of the Runway 14 threshold and supports movements from Taxiway A6 across the Runway 14 threshold and into the t-hangar and general aviation area on the northern portion of the apron. **Figure 2-3** identifies the location of each taxiway in respect to both runways and the GA terminal.

A lack of taxiway infrastructure currently inhibits Runway 14-32 operations. Departures from Runway 32 require back taxiing by over 3,000 feet as there is limited taxiway access along the south-eastern half of the runway. Arrivals on Runway 14 face this same challenge in reverse order. Taxiway Alpha becomes accessible for arrivals on Runway 32 at the runway intersection, since Taxiway Alpha offers direct apron access from this location. When arriving on Runway 32, a pilot's first available exit is Taxiway Alpha, approximately 3,000 feet from the landing threshold.



ATKINS	Sebring Regional Airport Airport Layout Plan Update	Runway and Taxiway Locations		Figure 2-3

2.2.1.3. Airfield Pavement Condition

The current FDOT Airfield Pavement Condition Index (PCI) Rating available for SEF is from year 2015 and can be found in **Table 2-3**. Additionally, **Figure 2-4** graphically depicts the Airport's PCI.

Table 2-3 - Pavement Condition Report Overview

Pavement Section Name	Section	Surface	Rating	Notes
Run Up Apron	415	AC	94	Asphalt Concrete
Run Up Apron	5110	AC	74	Asphalt Concrete
West Apron	4105	PCC	30	Portland Cement Concrete
West Apron	4115	AC	68	Asphalt Concrete
West Apron	4120	AC	81	Asphalt Concrete
West Apron	4125	AC	78	Asphalt Concrete
Runway 14-32	6205	AC	88	Asphalt Concrete
Runway 19-01	6105	AC	100	Asphalt Concrete
Taxiway Alpha	405	AC	87	Asphalt Concrete
Taxiway Alpha	420	AC	93	Asphalt Concrete
Taxiway Alpha	422	AAC	94	Asphalt overlay of asphalt
Taxiway A1	605	AAC	80	Asphalt overlay of asphalt
Taxiway A1	610	AC	100	Asphalt Concrete
Taxiway A2	105	APC	100	Asphalt overlay of concrete
Taxiway A3	205	APC	88	Asphalt overlay of concrete
Taxiway A3	210	AC	100	Asphalt Concrete
Taxiway C	305	AC	81	Asphalt Concrete
Taxiway C	315	AC	98	Asphalt Concrete
Taxiway C	320	AC	91	Asphalt Concrete
Taxiway C	325	AC	100	Asphalt Concrete
Taxiway T-Hangars	505	AC	63	Asphalt Concrete

Source: Florida Department of Transportation Airfield Pavement Condition Study, 2015

2.2.1.4. Lighting

The Airport has a variety of lighting aids available to facilitate identification, en route navigation approach, landing, and taxiing. Those aids are essential during operations at night or during adverse weather conditions. The systems, categorized by function, are further described in the following sections.

2.2.1.4.1. Obstruction Lighting

Existing obstructions that cannot be removed are lighted with warning lights. Obstructions near the Airport are marked or lighted during both daylight and night time hours to warn pilots of their presence. These obstructions may be identified for pilots on approach charts and on the official Obstruction Data Sheets (ODS) and Airport Obstruction Charts AOC), published by the National Oceanic and Atmospheric Administration (NOAA). A more detailed analysis of airspace obstructions will be conducted as part of the ALP presented in later phases of this report.

2.2.1.4.2. Visual Approach Aids

Visual approach aids consist of a series of visual cues which help pilots with aircraft alignment and position relative to a runway. The Airport's primary visual approach aids include a precision approach path indicator (PAPI) for Runway 1-19. PAPI light systems are typically located near a runway's approach end, positioned on the left side of the approach when viewed from an approaching aircraft. PAPIs provide pilots with a visual descent guidance during a visual approach to the appropriate touchdown point on a runway. Each of the Airport's PAPI systems have a four-light configuration which indicates a 3.00-degree angled glide path. Runway 14-32 is not currently equipped with visual approach aids.

2.2.1.4.3. Runway End Identification Lighting

Runway End Identification Lights (REIL) systems assist pilots' ability to rapidly identify runway thresholds in light polluted areas, or large open spaces. These systems consist of two synchronized flashing unidirectional white lights situated near a runway's landing threshold. Runway 1-19 is equipped with a REIL system; however, Runway 14-32 is not.

2.2.1.4.4. Runway and Taxiway Edge Lighting

Runway edge lighting is used to identify the edges of a runway during night operations and/or periods of low visibility. Such a system of lights is often identified by the intensity of the lights installed. Runway 1-19 is equipped with pilot controlled Medium Intensity Runway Lighting (MIRL) systems. Runway 14-32 is not equipped with edge lighting, which inhibits safe night-time operations from occurring on this runway, thereby discouraging pilots to operate on Runway 14-32 at night. Taxiway Alpha is equipped with a Medium Intensity Taxiway Light (MITL) system which illuminates the taxiway's edges.

2.2.1.4.5. Apron Lighting

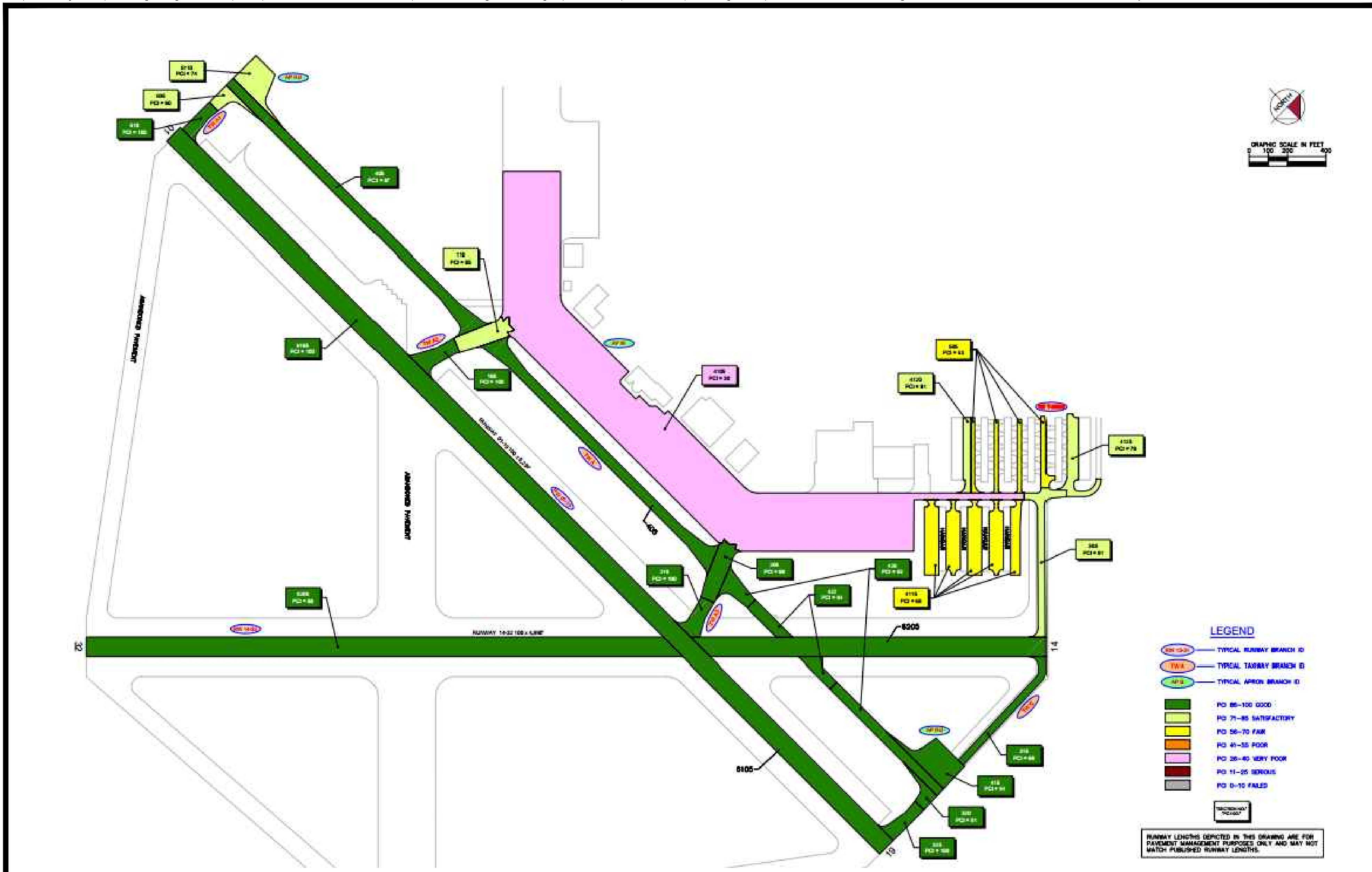
A small portion of the apron is lit by lights mounted on the terminal building and hangars, however the apron is not equipped with a formal high-mast lighting system. Additionally, portions of the apron are equipped with apron edge lights. No other apron lighting is known to exist on the airfield.

2.2.1.5. Markings

Runway 1-19, which is considered the Airport's primary runway, has non-precision markings on both runways ends that are currently reported as being in good condition. Runway 14-32 has visual markings on both runways ends that are currently reported as being in fair condition. Runway markings that are in good condition are vital to safe airport operations, as it allows for the clear identification of a pilots' position while on final approach to landing. Future rehabilitation of the runway markings will be discussed in following chapters.

2.2.1.6. Signage

The Airport's airfield signage consists of all required signage for a public use GA airport. Those signs assist pilots in recognizing their location while on the airfield and guide them to their desired location. The Airport currently has all required directional signage, location signage, and mandatory signs including holding position signage.



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Sebring Regional Airport
Airport Layout Plan Update

FDOT Pavement
Condition Index

Figure
2-4

2.2.1.7. Airport Apron Areas

The Airport has one primary apron area which is operated by the SAA, which contracted Volo Aviation to be responsible for aircraft fueling, aircraft ground handling, and aircraft parking. The apron is located to the west of Runway 1-19 and has sufficient space to accommodate both tenants and itinerant aircraft. The apron size is approximately 100,000 square yards of pavement and does not include the pavement for the T-hangars located north of the apron. The apron area pavement is currently in poor condition; however, a current rehabilitation project is underway at the Airport to address the deteriorating condition and is scheduled to be complete in 2020. The apron pavement has visible cracks and considerable visible deterioration.

The apron is mainly used for both based aircraft and transient aircraft. Given the Airport's special events schedule, the Airport experiences operational peaking periods. During those specific periods of time, the Airport can experience a limit on apron capacity for parked aircraft. Those peak periods occur during all EAA events, the Sport Aviation Expo, and all other fly-in events. Another large event that contributes to peaking characteristics is the annual 12-Hours of Sebring Race, previously discussed. During that time, not only are propeller aircraft parked on the apron, but corporate jets as well. No portions of the Airport's apron go unused on an annual basis.

2.2.1.8. Air Traffic Control Tower

The Airport is currently considered a 'non-controlled' airport. During the Airport's original use as an Air Corps Flight Training facility, an air traffic control tower (ATCT) was constructed to handle military operations during the World War II era. The original tower has been fully restored and has been relocated to accommodate airport development. The tower now serves as a temporary FAA ATCT during large events such as the annual Sport Aviation Expo and 12-Hours of Sebring race.

2.2.2. Landside Facilities

SEF's existing landside facilities are somewhat unique compared to other airports. The existing landside facilities include a GA terminal building (which houses their fixed base operator (FBO)), aircraft storage hangars, fuel farm, and automobile parking located at various locations on the landside areas. Along with these features, the landside facilities also consist of the various tenants and their respective buildings on airport property. The Airport's industrial park is a large contributor to Sebring's growth and will be analyzed in further sections.

2.2.2.1. Fixed Base Operator and General Aviation Terminal

The FBO is operated by a third-party organization, Volo Aviation. In conjunction with the SAA, Volo Aviation manages lease agreements for the hangar facilities, manages the pilot lounge, and conducts fueling operations, which are available 24 hours a day through the self-service and full-service facilities. The GA terminal building is in the middle of the Airport's property, directly west of the Runway 1-19 mid-point. The GA terminal building hosts services such as pilot supplies, rental cars, a pilot lounge and a full-service restaurant. Vehicular access to this facility is primarily US 98, which runs directly south of the Airport.

2.2.2.2. Hangar Areas

The Airport is host to multiple aircraft storage hangars, which include conventional hangars and T-hangars. The Airport's FBO manages all leased hangars with exception to privately built and owned hangars.

2.2.2.2.1. Conventional Hangars

A conventional hangar is typically rectangular or square and can hold multiple aircraft while allowing for additional equipment to be present within the facility. There are currently eight conventional hangars at the Airport, which are being leased by individuals or companies performing business on airport property or are privately owned. One of the conventional hangars was severely damaged by Hurricane Irma, thereby reducing the total usable conventional hangars to seven. That hangar is likely to be reconstructed during the master planning process, so will continue to be considered an existing facility. All the conventional hangars are accessible via the main apron area, located directly to the west of Runway 1-19.

2.2.2.2.2. T-Hangars and Consecutive Rectangular Hangars

T-Hangars are designed to maximize aircraft storage utilization. They typically allow for the complete protection of aircraft stored inside and are often scaled for small recreational aircraft. The structures are typically rectangular and store aircraft in a line by alternating direction of aircraft by nose and tail, also known as “stacked” or “nested”. The Airport is home to eight T-hangars, each able to accommodate ten aircraft. Additionally, there are two five-unit consecutive rectangular hangars. Consecutive rectangular hangars are similar to T-hangars, however each unit is separated by partitions and they typically face in one direction. The advantage of those hangars is that they can accommodate landside vehicle parking on one side and aircraft ingress and egress on the other. At current time, all T-hangars and conventional hangars are at capacity.

All the hangars mentioned are accessible via the northern portion of the main apron area and provide a combined 90 aircraft storage units.

2.2.2.3. Fuel Storage

The Airport’s fuel storage is maintained by Volo Aviation, which provides full fuel service during hours of operation and on-call service at other times. The fuel storage facilities are north of the FBO terminal on the apron pavement, directly across the apron from the control tower. The fuel farm consists of four above ground storage tanks. Two large tanks are 10,000 gallons each and store 100 LL (low lead) ‘AvGas’ and Jet-A respectively. Two smaller tanks are 1,000 gallons each and store diesel fuel and Swift un-leaded AvGas also known as UL94. The Airport is one of only two in the State of Florida to provide UL94. Additionally, only 19 other public use airfields in the U.S. provide UL94.

The Environmental Protection Agency (EPA) formally began regulatory processes required by the Clean Air Act, which may ultimately result in standards that mandate the GA industry’s transition from leaded AvGas (100LL) to unleaded (UL) aviation gasoline. AvGas is the only transportation fuel in the U.S. which still contains lead. The Piston Aviation Fuel Initiative (PAFI) is a joint industry-government partnership that emerged in 2010 to test and approve an unleaded avgas suitable for the existing GA piston powered fleet. PAFI’s mission was to develop a fuel which approximately 230,000 piston-engine aircraft worldwide (about 167,000 in the U.S.) could safely use without modification. The PAFI program is expected to finalize its evaluation and testing program for U.S. piston-engine fleetwide approval by the end of 2018. Higher octane unleaded fuels, such as UL102 are in development. The unleaded fuels’ benefits include no lead fouling, no corrosion of the engine due to lead in the oil, and less wear and tear resulting in longer engine life, while still retaining the aircraft’s current performance. Those reasons coupled with the reduced emissions result in expectations that the FAA will institute a transition program to cease the use of 100LL. As such, subsequent chapters of this report will identify the need to modernize the Airport’s fuel storage and delivery facilities.

2.2.2.4. Automobile Parking

The Airport has several vehicle parking areas. A parking area directly west of the GA Terminal building serves as the primary parking for the terminal and FBO. The parking capacity for this specific parking area is approximately 77 vehicles. Several ancillary parking areas support various businesses that operate at the Airport and are co-located with the businesses they serve. As seen in **Table 2-4**, the majority of the Airport’s automobile parking is for tenant use.

Table 2-4 - Automobile Parking Areas

Parking Lot Location on Airport	Estimated Parking Spaces	Use
Lockwood Aviation Repair	25	Company Use
Commercial Hangar (Alan Jay Way)	60	Public Use/Tenant Use
Group 44 Commercial Hangar	15	Tenant Use
Commercial Hangar (Parallel to T-hangars)	40	Tenant Use
Total Estimated Parking Spaces	77	Mixed

Source: Atkins Analysis 2017

2.2.2.5. Security Fence

Developed and non-developed areas within the airfield and landside areas need to be protected to ensure safe and secure operations. As such, perimeter fencing has been installed around the appropriate areas to ensure such a safe environment. This includes airfield access from different points on the property using access gates where only authorized personnel can gain access. The airfield operations area (AOA) is completely enclosed by fencing which meets FAA criteria, however fencing does not completely envelope the entire airport property.

2.3. Navigational Aids

Navigational aids, commonly referred to as NAVAIDs, assist pilots with enroute navigation and approaches and departures into and out of airports. These aids consist of both ground-based electronic systems and space-based satellite systems.

NAVAIDs for an airport vary in complexity, which is primarily based on the type of operations that will be occurring at an airport. The lower the approach, departure, and decent minimums are at an airport, the more sophisticated the NAVAIDs are required to be. The type of NAVAID takes into consideration the type of guidance pilots receive on approach. For instance, a precision approach is supported by both vertical and horizontal guidance, whereas a non-precision approach contains only horizontal guidance. The systems available at an airport play an important role in determining weather minimums and overall day to day operations.

2.3.1. Terminal Area NAVAIDs and Landing Aids

Included in this group are NAVAIDs located at or near the airfield to provide guidance to pilots which are arriving, departing, or overflying the area under "all-weather" (both visual flight rules (VFR) and instrument flight rules (IFR) conditions. Landing aids provide either precision or non-precision approaches to an airport or runway.

The Airport has four non-precision instrument approach procedures (IAPs). Runway 14, 32, and 1 IAPs provide a straight in approach to the respective runway ends. The Runway 19 IAP has been adjusted to a curved in approach due to the proximity of Restricted Area R-2901 associated with MacDill Air Force Base operations. The straight in IAPs utilize global positioning satellite (GPS) data and the adjusted approach procedure utilize required navigation performance (RNP). For the RNP approach, prior authorization is required due to the noted proximity to the restricted area located directly north. The Airport's GPS approaches all offer wide area augmentation system (WAAS) which augments GPS signals for improved accuracy. The WAAS augmentation of GPS signals permit approach minima lower than approaches supported by other ground-based equipment. Figures 2-6 through 2-9 depict the Airport's published IAPs.

- **Figure 2-5** presents the RNP IAP to Runway 19 uses a 3.00-degree glide slope angle with a runway threshold crossing height (TCH) of 55 feet above ground level (AGL). Due to the airspace restrictions of the area, the IAP guides pilots on an approach from northwest of the Runway 19 end and provides a curved approach into the Runway. This approach allows for the avoidance of Restricted Area R-2901.
- **Figure 2-6** displays the non-precision area navigation (RNAV), GPS IAP to Runway 14 uses a 3.00-degree glide slope with a runway TCH of 40 feet AGL. This procedure is a straight in approach.
- **Figure 2-7** depicts the non-precision RNAV, GPS IAP to Runway 1 uses a 3.00-degree glide slope with a runway TCH of 58 feet AGL. This procedure is a straight in approach to the runway end.
- **Figure 2-8** presents the non-precision RNAV, GPS IAP to Runway 32 uses a 3.00-degree glide slope with a runway TCH of 40 feet AGL. This procedure is a straight in approach to the runway end.

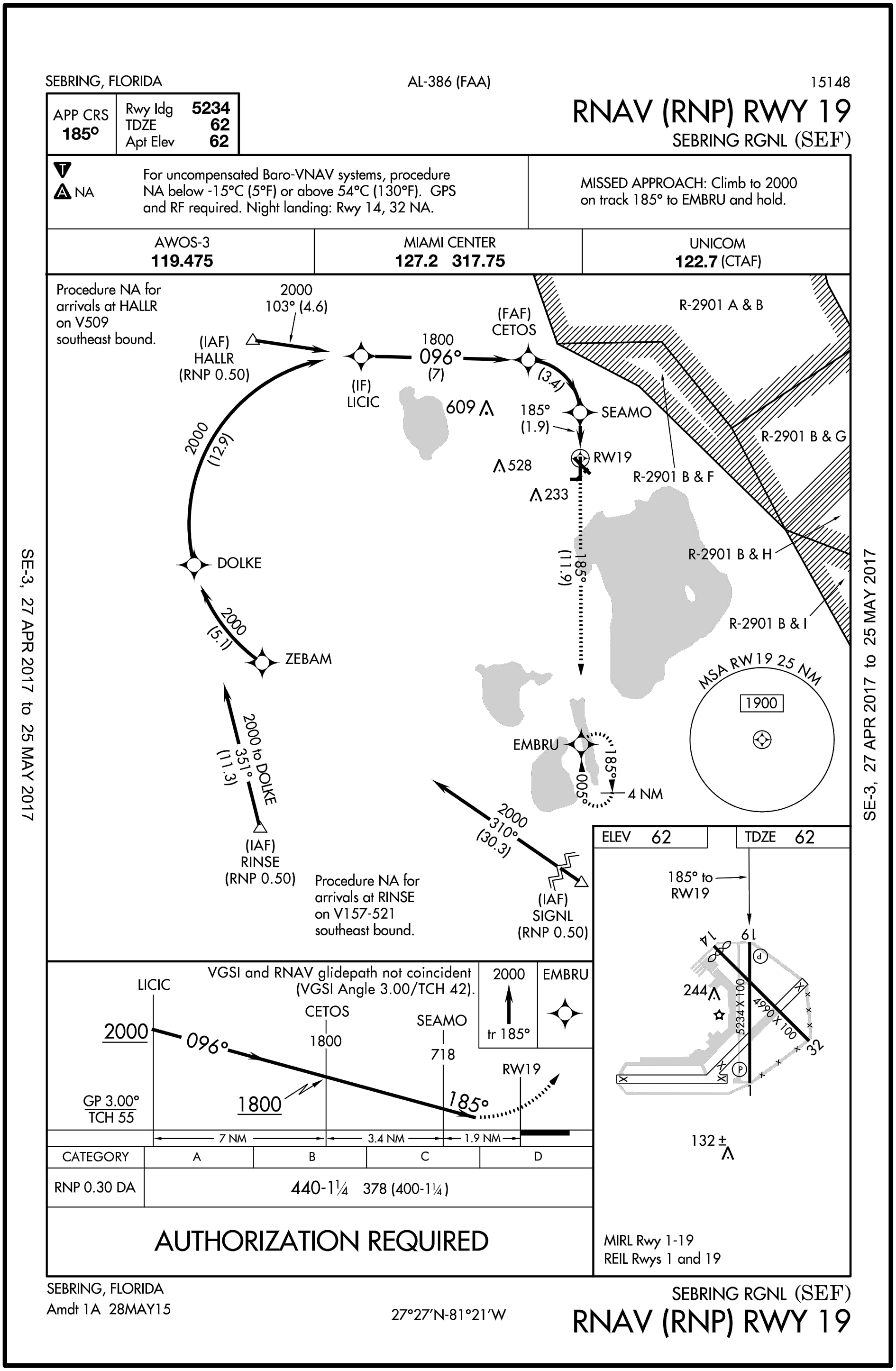
2.3.2. Weather Reporting

In terms of weather reporting at SEF, operators should be able to utilize the Airport's specific AWOS radio frequency (119.475) while in range to get the Airport's most recent weather information. The AWOS can also be accessed via telephone at (863) 655-6424, thereby allowing pilots to access the Airport's recent weather data from their point of origin. This allows for the safe monitoring of weather conditions on the airfield, with new updates every hour. Tennant interviews unveiled that the AWOS is currently not broadcast via the internet. Advanced technology enables real-time AWOS data to be available to subscribers of such data. The disadvantage of the broadcast AWOS report is that current weather conditions may not be accurately reflected by the report which could be as much as an hour old. New services allow pilots and other users to view an airport's AWOS data in real time, though only if the AWOS owner has linked their system to the National Airspace Data Interchange Network (NADIN). Such a linkage has not yet been established at the Airport, however this may be an intangible improvement to be considered.

A segmented circle is located directly east of the Runway 1-19 midpoint, which identifies both the runway directions as well as the respective traffic pattern for each. In addition to this, there is a wind direction indicator in the middle of the segmented circle, which allows for operators to visually monitor wind conditions.

2.4. Airspace Structure

Congress granted the FAA the authority to control all airspace over the United States, via the Federal Aviation Act of 1958. The FAA then established the National Airspace System (NAS) to protect persons and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS is defined as the common network of U.S. Airspace, including air navigation facilities, airports, and landing areas, aeronautical charts and information, associated rules, regulations and procedures, technical information, personnel, and material. System components shared jointly with military are also included.



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Sebring Regional Airport
Airport Layout Plan Update

Runway 19 RNAV (RNP)
Approach Plate

Figure.
2-5

SEBRING, FLORIDA

AL-386 (FAA)

17061

RNAV (GPS) RWY 14

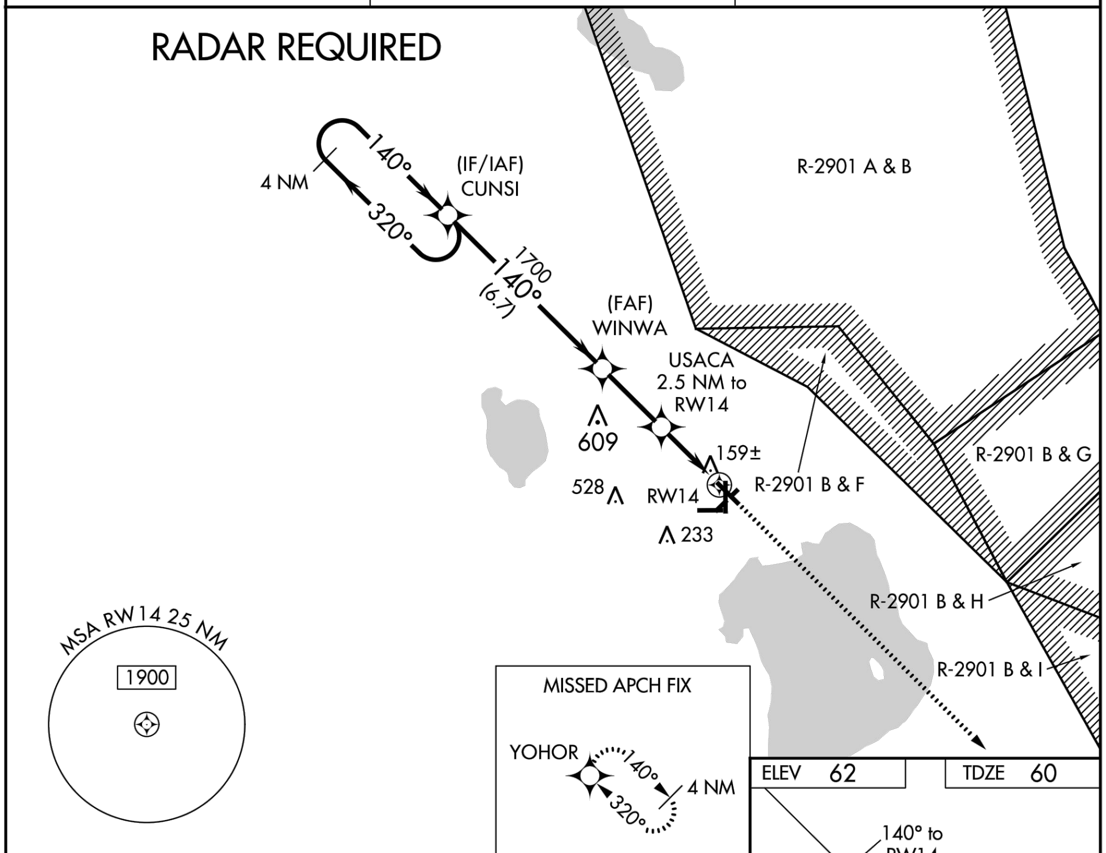
SEBRING RGNL (SEF)

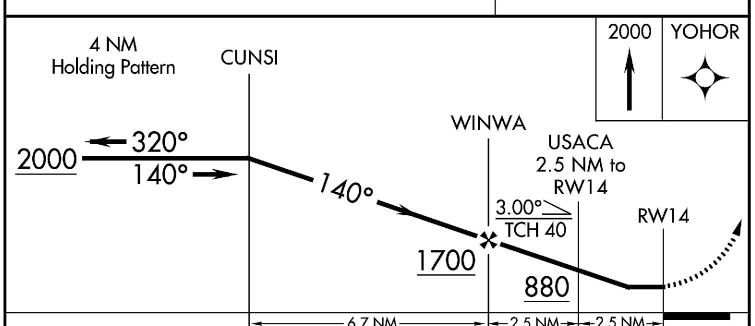
WAAS CH 66024 W14A	APP CRS 140°	Rwy ldg 4701 TDZE 60 Apt Elev 62

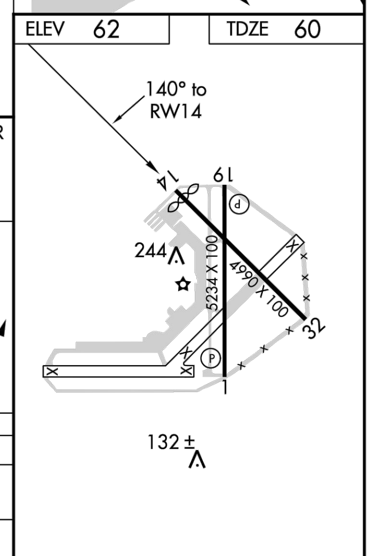
DME/DME RNP-0.3 NA. Helicopter visibility reduction below 1 SM NA. When local altimeter setting not received, use Vero Beach Muni altimeter setting and increase all MDA 140 feet; increase LP Cat C and D visibility ⅜ mile, LNAV Cat C and D and Circling Cat C visibility ½ mile and Cat D Circling ¼ mile. Night landing: Rwy 14, 32 NA.

MISSED APPROACH: Climb to 2000 direct YOHOR and hold.

AWOS-3	MIAMI CENTER	UNICOM
119.475	127.2 317.75	122.7 (CTAF)







CATEGORY	A	B	C	D
LP MDA	420-1 360 (400-1)			
LNAV MDA	560-1 500 (500-1)		560-1⅜ 500 (500-1⅜)	
CIRCLING	600-1 538 (600-1)		600-1½ 538 (600-1½)	620-2 558 (600-2)

MIRL Rwy 1-19
REIL Rwys 1 and 19

SEBRING, FLORIDA

Orig-B 28MAY15

27°27′N-81°21′W

SEBRING RGNL (SEF)

RNAV (GPS) RWY 14

SE-3, 27 APR 2017 to 25 MAY 2017

SE-3, 27 APR 2017 to 25 MAY 2017

ATKINS

Sebring Regional Airport
Airport Layout Plan Update

Runway 14 RNAV (GPS) Approach Plate

Figure. 2-6

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SEBRING, FLORIDA AL-386 (FAA) 17061

WAAS CH 40311 W01A	APP CRS 005°	Rwy ldg 5234 TDZE 62 Apt Elev 62

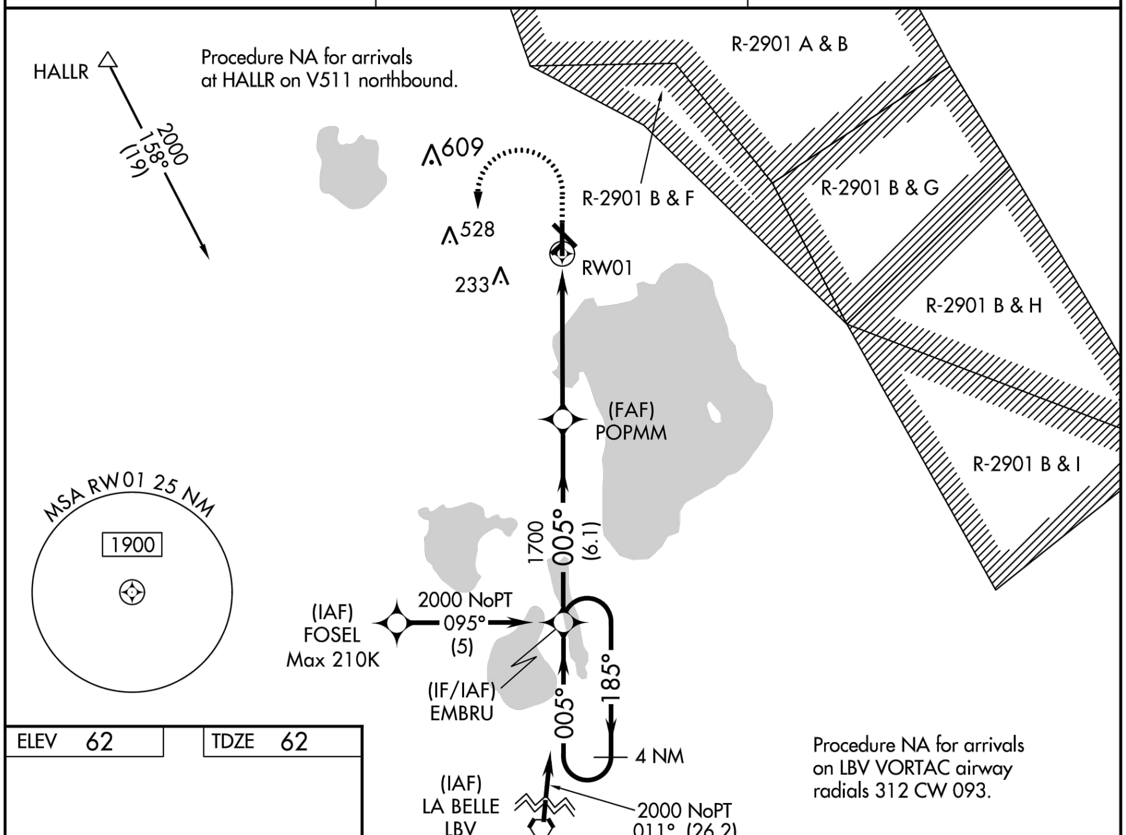
RNAV (GPS) RWY 1
SEBRING RGNL (SEF)

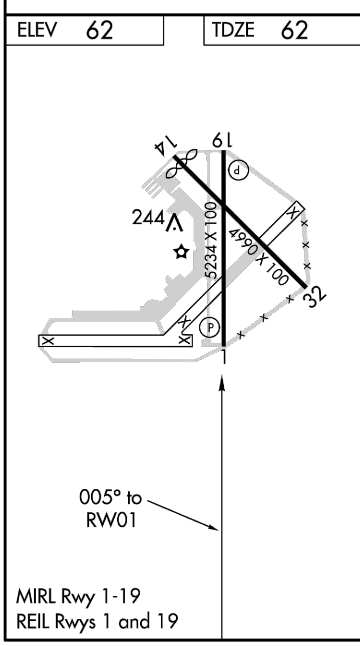
For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -15°C (5°F) or above 54°C (130°F). DME/DME RNP-0.3 NA. When local altimeter setting not received, use Vero Beach Muni altimeter setting and increase all DA 122 feet and all MDA 140 feet; increase LPV all Cats visibility ½ mile, LNAV/VNAV all Cats visibility and LNAV Cats C and D visibility ⅜ mile, increase Circling Cat C visibility ½ mile and Cat D visibility ¼ mile. Night landing: Rwy 14, 32 NA. VDP and Baro-VNAV NA when using Vero Beach altimeter. Helicopter visibility reduction below ¾ SM NA.

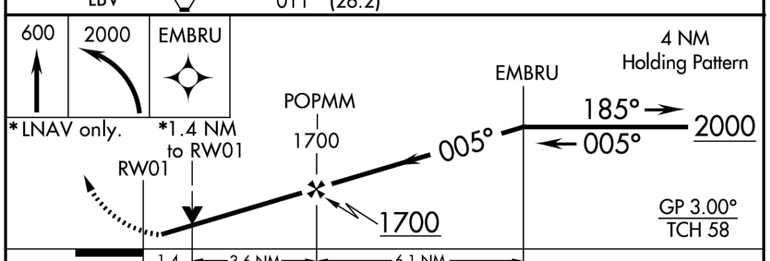
A NA

MISSED APPROACH: Climb to 600 then climbing left turn to 2000 direct EMBRU and hold.

AWOS-3	MIAMI CENTER	UNICOM
119.475	127.2 317.75	122.7 (CTAF)







CATEGORY	A	B	C	D
LPV DA	381-1 319 (400-1)			
LNAV/VNAV DA	408-1⅛ 346 (400-1⅛)			
LNAV MDA	540-1 478 (500-1)		540-1⅜ 478 (500-1⅜)	
CIRCLING	600-1 538 (600-1)		600-1½ 538 (600-1½)	620-2 558 (600-2)

SEBRING, FLORIDA
Amdt 1A 28MAY15
27°27′N-81°21′W
SEBRING RGNL (SEF)
RNAV (GPS) RWY 1

SE-3, 27 APR 2017 to 25 MAY 2017

SE-3, 27 APR 2017 to 25 MAY 2017

ATKINS	Sebring Regional Airport Airport Layout Plan Update		Runway 1 RNAV (GPS) Approach Plate	Figure. 2-7

SEBRING, FLORIDA | AL-386 (FAA) | 17061

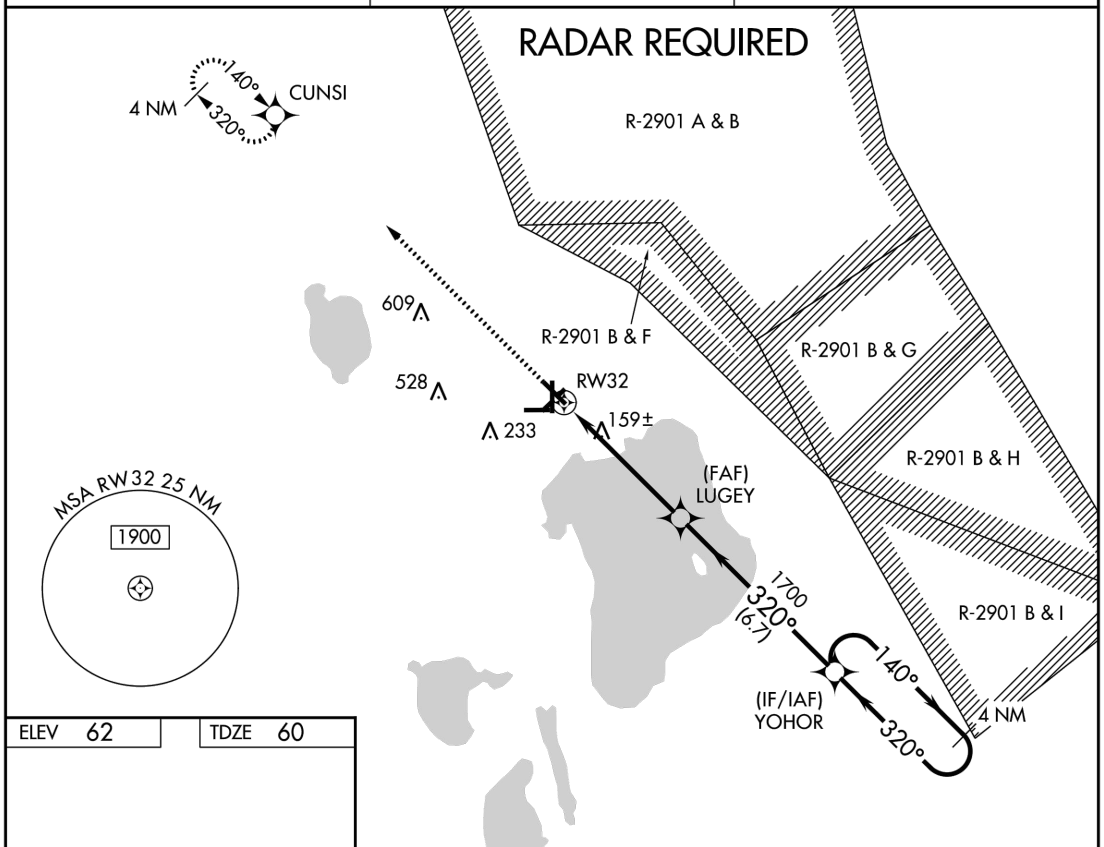
WAAS CH 48925 W32A	APP CRS 320°	Rwy ldg 4990 TDZE 60 Apt Elev 62

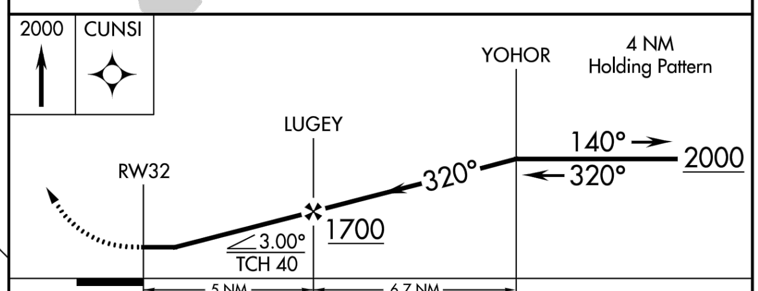
RNAV (GPS) RWY 32
SEBRING RGNL (SEF)

DME/DME RNP-0.3 NA. Helicopter visibility reduction below ¾ SM NA. When local altimeter setting not received, use Vero Beach altimeter setting and increase all MDA 140 feet; increase LP and LNAV Cats C and D visibility ⅜ mile and Circling Cat C visibility ½ mile and Circling Cat D visibility ¼ mile. Night landing: Rwy 14, 32 NA.

MISSED APPROACH: Climb to 2000 direct CUNSI and hold.

AWOS-3	MIAMI CENTER	UNICOM
119.475	127.2 317.75	122.7 (CTAF)





CATEGORY	A	B	C	D
LP MDA	420-1 360 (400-1)			
LNAV MDA	420-1 360 (400-1)			
CIRCLING	600-1 538 (600-1)		600-1½ 538 (600-1½)	620-2 558 (600-2)

SEBRING, FLORIDA
Orig-A 28MAY15

27°27′N-81°21′W

SEBRING RGNL (SEF)
RNAV (GPS) RWY 32

SE-3, 27 APR 2017 to 25 MAY 2017

SE-3, 27 APR 2017 to 25 MAY 2017

ATKINS

Sebring Regional Airport
Airport Layout Plan Update

Runway 32 RNAV (GPS) Approach Plate

Figure. 2-8

2.4.1. Airspace Environs

Airspace is classified as controlled or uncontrolled. Controlled airspace is supported by ground-to-air communications, NAVAIDs, and air traffic services. In September 1993, the FAA reclassified major airspace. The new classifications are graphically depicted in **Figure 2-9**.

The types of controlled airspace around the Airport include:

- **Class A airspace**; all airspace between 18,000 feet AMSL and flight level (FL) 600 (approximately 60,000 feet AMSL) and airspace above waters 12 NM off the cost of the 48 contiguous states). FL altitudes used in Class A are pressure altitudes referenced to a standardized altimeter setting of 29.92” Hg, therefore the true altitude depends on local atmospheric pressure variations. Unless otherwise authorized by ATC, all flight operations in Class A must be controlled and must be operated per IFR, which requires a clearance before entry.
- **Class C airspace**; (formerly referred to as the Airport Radar Service Area), which lies from either the surface or 1,200 feet AMSL to 4,000 feet AMSL. This variation can be determined based on the location within the five-nautical mile coverage from the airport property. Southwest Florida International Airport (RSW) holds this class of airspace and is 60 NM from the Airport. A procedural ‘outer area’ has a radius of 20 NM. Pilots entering Class C airspace must establish two-way radio communication with ATC prior to entering the 20 NM ring.
- **Class E airspace**; all controlled airspace other than Class A, B, C, or D. In most areas of the U.S. it extends upward from 1,200 feet AGL up to but not including 18,000 feet AMSL. Class E airspace includes transition areas and control zones for airports without air traffic control towers (ATCTs) which can begin either at the surface or 700 feet AGL. Most airspace in the U.S. is Class E. The airspace above FL600 is also Class E, where no ATC clearance or radio communication is required for VFR flight.
- **Class G airspace**; all airspace below 14,500 feet AMSL not otherwise classified as controlled. There are no entry or clearance requirements for Class G airspace. Typically, Class G is the airspace very near the ground (1,200 feet AGL or less), beneath Class E airspace and between classes B through D. Radio communication is not required in Class G airspace and is completely uncontrolled.

The Airport’s specific airspace classification is Class E. In addition to the Class E airspace classification, the Airport resides within the Lake Placid East Military Operating Area (MOA) and is near Restricted Areas (RAs) R-2901 A and B, which is subdivided into four Ras; F&N, G&N, H&N and I&N. The Miami Approach Control is responsible for IFR control of all aircraft enroute to the Airport. **Figure 2-10** depicts the VFR Sectional Chart for the Sebring Region.

2.4.1.1. Class E Airspace

Most of the controlled airspace around SEF is designated as Class E airspace, which includes several different segments. When an airport is designated as Class E, it usually allows IFR traffic to remain in controlled airspace while transitioning between the enroute and airport environments. Generally, Class E airspace surrounds airports that are non-towered yet are equipped with an IAP. The configuration of each Class E airspace area is individually tailored. Each pilot operating at a Class E airport should provide situation and directional information via radio communications with other pilots operating within the airspace.

2.4.1.2. Special use Airspace

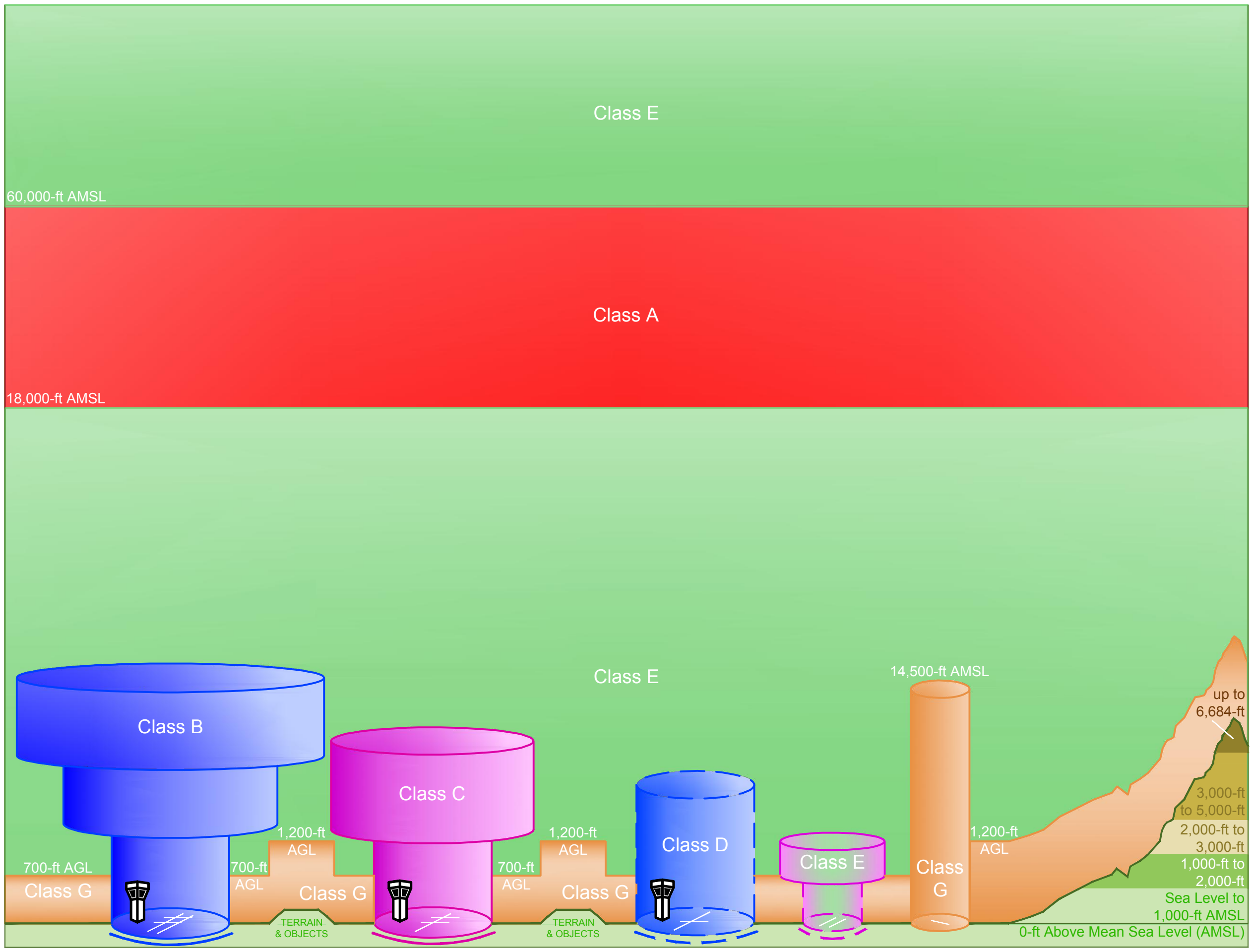
Special Use Airspace (SUA) is defined as an area where limitations may be imposed on aircraft not participating in operations being conducted within the airspace. Typically, due to military operations, flights within SUAs can usually be restricted where clearance is needed by the FAA or is imposed to show hazardous airspace. MOA airspace is to advise flights within the active area that military operations are being conducted and that added hazard is present within the region. Restricted Area airspace is set in place to control all flight operations within the area, where special clearance from FAA is needed before conducting operations within the airspace. Restricted Areas are not always active, or “hot”, and are clearly communicated when they are activated.

Sebring is situated within a MOA and approximately four miles west-southwest from Restricted Area R-2901. These SUAs are in place for the MacDill Air Force Base Auxiliary Field (AGR), where military operations are frequently conducted. The Avon Park Air Force Range (APAFR) is approximately 106,000 acres and located north-northeast of the Airport. Military air-to-ground training operations take place in that area, causing the overlying restricted airspace known as R-2901.

Typically, the bombing range is utilized for training exercises Monday through Friday. Joint military exercises routinely take place at the Avon Park Bombing Range because as it is popular due to its size.

2.4.1.3. Uncontrolled Airspace and Air Traffic Procedures

The FAA has developed various airspace classifications to address the need for controlling airspace based upon the type and level of operations occurring at a specific airfield. SEF is a non-towered airport and designated as Class E airspace. A special FAA ATCT is established during special events to allow for the safe and efficient coordination of the greatly increased operations. This airspace consists of a circle centered on the Airport that encompasses a radius of approximately six-nautical miles, and up to an altitude of 1,200 AGL. No ATC clearance is required for aircraft entering or operating in the Airport’s Class E airspace, yet pilot communication is recommended on the open channel during critical portions of flight.



Communication Requirements and Weather Minimums

	Class A	Class B	Class C	Class D	Class E	Class G
Minimum Pilot Qualification	Instrument Rating	Student *	Student *	Student *	Student *	Student *
Entry Requirements	IFR: ATC Clearance VFR: Operations Prohibited	ATC Clearance	IFR: ATC Clearance VFR: Two-Way Communication w/ ATC	IFR: ATC Clearance VFR: Two-Way Communication w/ ATC	IFR: ATC Clearance VFR: None	None
VFR Visibility Below 10,000 AMSL **	N/A	3 Statute Miles	3 Statute Miles	3 Statute Miles	3 Statute Miles	Day: 1 Statute Mile Night: 3 Statute Miles
VFR Cloud Clearance Below 10,000 AMSL	N/A	Clear of Clouds	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal ***
VFR Visibility 10,000 AMSL and Above **	N/A	3 Statute Miles	3 Statute Miles	3 Statute Miles	5 Statute Miles	5 Statute Miles
VFR Cloud Clearance 10,000 AMSL and Above	N/A	Clear of Clouds	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 2,000 Horizontal	500 Below 1,000 Above 1 Statute Mile Horizontal	1,000 Below 1,000 Above 1 Statute Mile Horizontal
Airport Application	N/A	• Radar • Instrument Approaches • Weather • Control Tower • High Density	• Radar • Instrument Approaches • Weather • Control Tower	• Instrument Approaches • Weather • Control Tower	• Instrument Approaches • Weather	
Special VFR Permitted?	No	Yes	Yes	Yes	Yes	N/A

* Prior to operating within Class B, C, or D airspace (or Class E airspace with an operating control tower), student, sport, and recreational pilots must meet the applicable FAR Part 61 training and endorsement requirements. Solo student, sport, and recreational pilot operations are prohibited at those airports listed in FAR Part 91, Appendix D, Section 4.
** Student pilot operations require at least 3 statute miles visibility during the day and 5 statute miles visibility at night.
*** Class G VFR cloud clearance at 1,200 AGL and below (day): clear of clouds.

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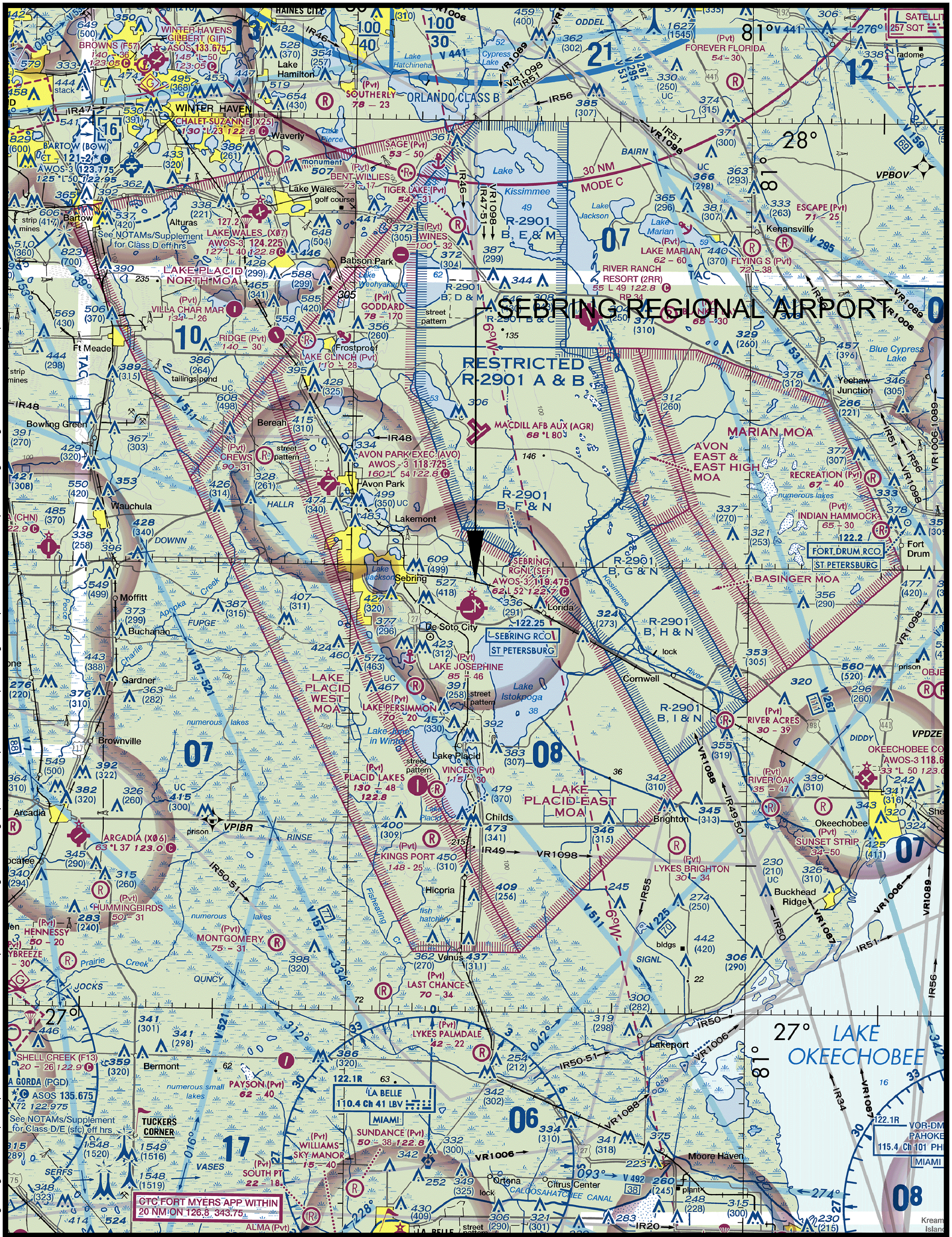
Sebring Regional Airport
Airport Layout Plan Update

General FAA
Airspace Classifications

Figure.
2-9



ATKINS	Sebring Regional Airport Airport Layout Plan Update	VFR Sectional Area	Figure. 2-10

2.4.2. FAR Part 77 Surfaces

Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace, defines standards for determining obstructions to navigable airspace. Part 77's "imaginary surfaces" are considered Obstacle Identification Surfaces (OIS), which are used to identify potential airspace hazards. They are often confused with Obstacle Clearance Surfaces (OCS), which are used to mitigate known obstructions of an OIS. Both OIS and OCS are used in concert to protect operations around airports from high structures that can pose a threat to aircraft landing at or departing an airport or operating within an airport's terminal airspace. Obstructions are primarily identified by superimposing the Part 77 "imaginary surfaces" over an airport and its surrounding areas. An analysis is performed to determine the elevations of various objects (structures, terrain, trees, towers, etc.). The objects' elevations are then compared to the elevations of the associated Part 77 surfaces. Objects that are found to be higher than the Part 77 surfaces are considered obstructions and would therefore require some form of mitigation to ensure that they do not pose a hazardous condition to aviation. An airport airspace sheet will illustrate the various obstructions and objects located within the Part 77 areas as part of the ALP set developed in conjunction with this report.

The dimensions of the "imaginary surfaces" are derived from the type of IAPs and aircraft operating at an airport. Federal regulations require that the primary and horizontal surfaces, identified within the Part 77 imaginary surfaces guidance, of the most demanding approach be applied to the entire runway. The typical Part 77 configuration and dimensions for the airspace surrounding the Airport are illustrated in **Figure 2-11**.

2.4.3. Airports in the Region

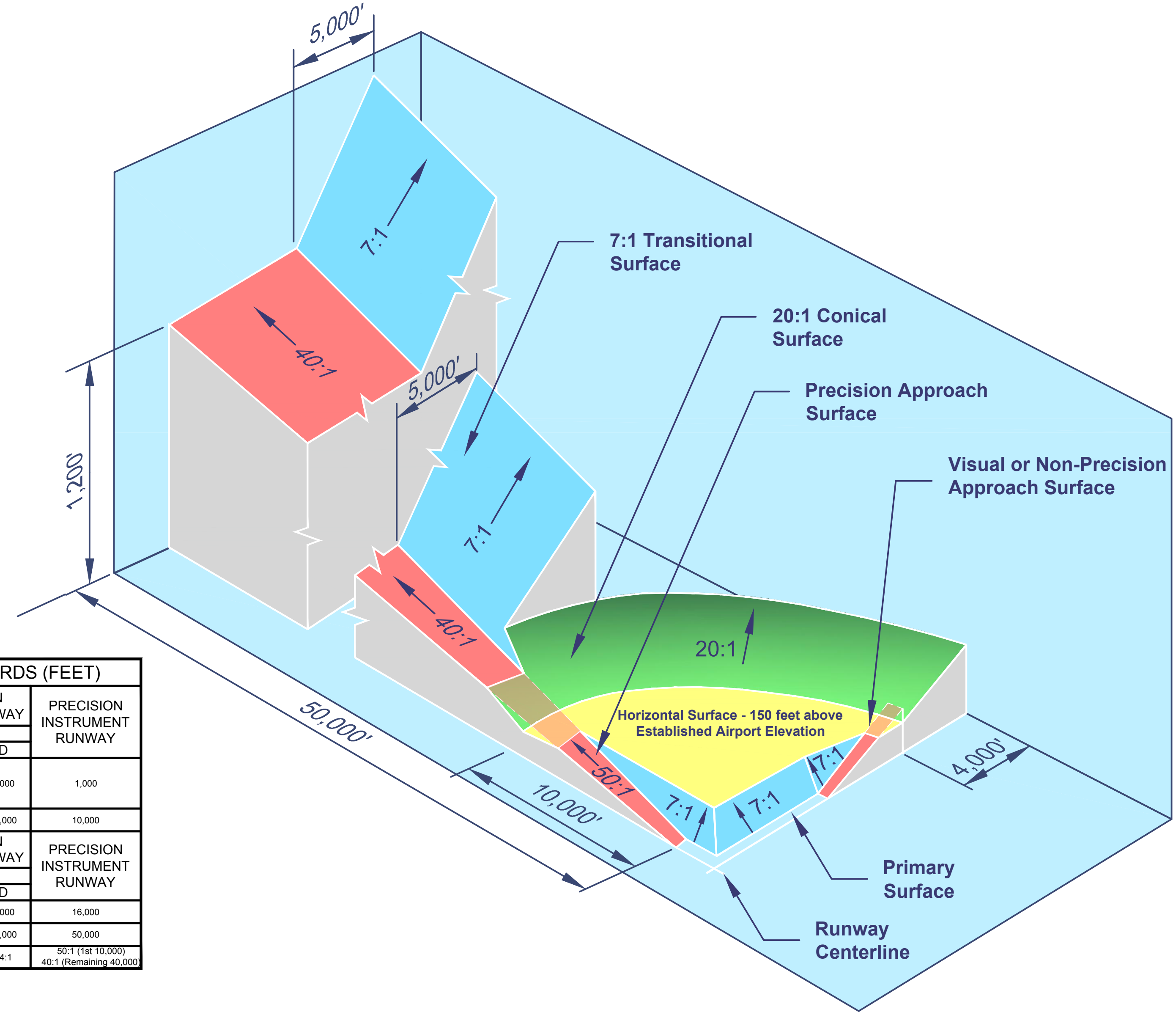
There are currently four public-use airports, two private airstrips, and one military base near SEF. **Table 2-5** lists the surrounding airports and provides distance and direction information in relation to the Airport. There are no commercial service airports within the general area. Orlando International (MCO) and RSW are the closest major commercial service airports to Sebring at 87 and 93 miles respectively.

Table 2-5 - Airports Surrounding Sebring Regional Airport

Airport Name (I.D.)	Location from SEF	Use
Avon Park Executive (AVO)	13 Nautical Mile SE	GA-Public
Okeechobee County (OBE)	29 Nautical Mile SE	GA-Public
Arcadia (X06)	31 Nautical Mile SW	GA-Public
Wauchula (CHN)	29 Nautical Mile W	GA-Public
Lake Persimmon (03FA)	7 Nautical Mile SW	Private
Placid Lakes (09FA)	13 Nautical Mile SW	Private
MacDill Air Force Base (AGR)	11.5 Nautical Mile N	Military

Source: Atkins Analysis 2017

J:\05_Projects\Sebring Regional Airport\#_SEF_AMPU\4.0 Planning & Design\4.1 CAD\4.1.2 Chapter Figures\06_SEF_Part_77.dwg Jun02,2017 – 2:31pm Plotted By: HASK8597



A - UTILITY RUNWAYS
B - RUNWAYS LARGER THAN UTILITY
C - VISIBILITY MINIMUMS GREATER THAN 3/4 MILES
D - VISIBILITY MINIMUMS AS LOW AS 3/4 MILE
E - PRECISION INSTRUMENT APPROACH SLOPE IS 50:1 FOR INNER 10,000 FEET AND 40:1 FOR AN ADDITIONAL 40,000 FEET

DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	B		
					C	D	
A	WIDTH OF PRIMARY SURFACE AND APPROACH SURFACE WIDTH AT INNER END	250	500	500	500	1,000	1,000
B	RADIUS OF HORIZONTAL SURFACE	5,000	5,000	5,000	10,000	10,000	10,000
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	B		
					C	D	
C	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	16,000
D	APPROACH SURFACE LENGTH	5,000	5,000	5,000	10,000	10,000	50,000
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	50:1 (1st 10,000) 40:1 (Remaining 40,000)

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Part 77 Classification

Figure
2-11

2.4.4. Land Use Zoning

Land use and zoning around an airport is critically important to its future operational utility and sustainability. Without the security and support provided by compatible land uses around an airport property, airports and their sponsors can face a variety of safety difficulties, health and human safety concerns, and social/political dissent, which in the long run detracts from an airports ability to reach its full public value potential. **Figure 2-12** identifies the existing land use and zoning conditions around the Airport.

The Airport is currently classified as majority agriculture land use under the Highland County Zoning Department. A portion of the airport property in the southeast area is zoned as industrial use. The agriculture classification for zoning is very common in the Sebring region. Adjacent to the airport property lies both agriculture zoned parcels as well as single family residential zoned parcels. The residential zoned parcels are south, east, and southeast of the airport property. The industrial areas currently designated on airport property are appropriately aligned with the redevelopment efforts for the Airport's southern area.

2.4.5. Vacant or Underutilized Land

Even though a majority of the area on airport property is zoned as "Agriculture" land use, there is still a portion of the property designated for industrial use that can be identified as vacant or underutilized land. This specific section of land is reserved for some form of future development and thus, is not highly restricted. There are additional parcels located on the east and northeast of the airport property that can be identified for future development due to the current vacant status. **Figure 2-13** identifies these sections of land.

2.5. Environmental Considerations

Gaining perspective on existing environmental considerations at the Airport during the inventory portion of the planning process enables the preparation of future development options which have the highest possibility for implementation by seeking to minimize negative environmental affects up front and reviewing environmental considerations as part of the analysis of development alternatives. The following sections identify different environmental issues present at the Airport which have the potential to affect future development. These issues include wind and meteorological data, aircraft noise, surface water management, soils and geology, and floodplain and wetlands areas.

2.5.1. Wind and Meteorological Data

The climatic conditions commonly experienced at an airport can play a large role in the layout and usage of the facility. Weather patterns characterized by periods of low visibility and cloud ceilings often lower the capacity of an airfield, and wind direction and velocity dictate runway usage.

2.5.1.1. Wind Coverage

Local wind conditions at an airport play a large role in the runway usage since aircraft operate most efficiently when taking-off and landing into the wind. Runways not oriented to take full advantage of prevailing winds are often not utilized as frequently. Aircraft can operate on a runway when the crosswind component, or wind component perpendicular to the direction of travel, is not excessive. Crosswind components differ slightly depending on the size of aircraft. The appropriate crosswind components for the Airport's runways were determined by the type of aircraft typically operating on those runways. **Figure 2-14** depicts the Airport's wind rose, which utilizes wind data from Okeechobee County Airport (OBE). This data was utilized due to the Airport's insufficient data for an accurate creation of the wind roses.

2.5.2. Aircraft Noise

Noise is generally the most identifiable impact an airport has on the environment. The FAA recommends the average day-night sound level (DNL) in decibel values as the national standard for measuring airport noise. The

FAA has determined that a sound level of 65 DNL or less is compatible with most residential land uses. Therefore, noise levels greater than this measurement should be contained within an airport's property limits to the greatest extent possible. In areas around an airport where noise levels exceed 65 DNL, other methods of mitigation such as land acquisition, zoning requirements, and the purchase of easements may be used as possible remedies for incompatible land uses. The Airport's most recent noise analysis was conducted in 2013 by URS.

The analysis concluded that the 65 DNL noise contour was retained within airport property which is in accordance with mitigating noise pollution produced by operations from the Airport. Unique to the Airport is the Sebring International Raceway, which is used throughout the year, and contributes most of the noise in the Airport's vicinity.

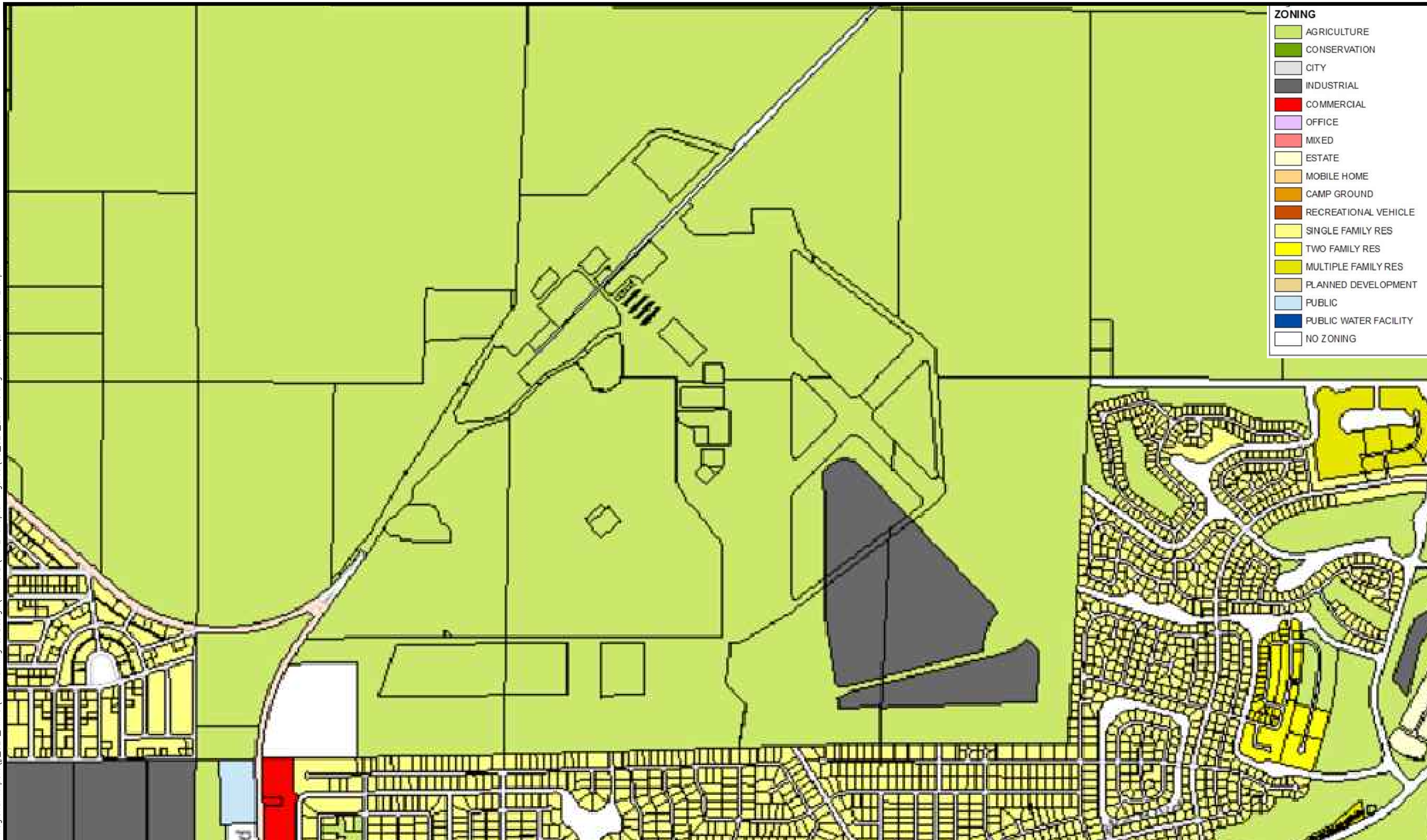
2.5.3. Soils and Geology

The United States Department of Agriculture (USDA) Highlands County Soils Survey (2016), indicated that there are fourteen different soil types within the Airport's region. A significant percentage of the areas on and around the Airport are made up of types of fine sand, which is extremely typical in Florida soil profiles. A map depicting the Airport's soil types is depicted in **Figure 2-15**. Different variations of muck are found in the region as well. Brighton muck is mainly present in terms of this soil type. The difficulties of developing on sand is numerous; from the unstable property of fine sand and the additional work needed to construct a stable foundation. A full soils evaluation should be completed prior to development to better understand the areas of concern on airport property.

2.5.4. Floodplains

Floodplains are defined in the U.S. EPA Executive Order (EO) 11988, Floodplain Management, 1977. They include lowland areas adjoining inland and coastal waters, especially those areas subject to a one percent or greater change of flooding in any given year. EO 11988 directs Federal agencies to act to reduce the risk of flood loss, minimize the impact of floods on human safety, health, and welfare, and restore and preserve the natural and beneficial value served by floodplains.

Under the EO, the Federal Emergency Management Agency (FEMA) has produced flood insurance rate maps (FIRMs) for communities participating in the National Flood Insurance Program. Detailed maps illustrate the 100-year and 500-year base flood elevations. **Figure 2-16** indicates that most airport property is categorized as "X", which identifies low to moderate risk areas. Portions of airport property to the Northwest are categorized as "A/AE", which is within a high-risk area for flooding.



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Sebring Regional Airport
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SEF Area Zoning

Figure 2-12

Plotted By: hask8597 Jun07,2017 – 12:19pm
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Sebring Regional Airport
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Vacant/Underutilized Land

Figure 2-13

Plotted By: hask8597 Dec26,2017 – 3:09pm
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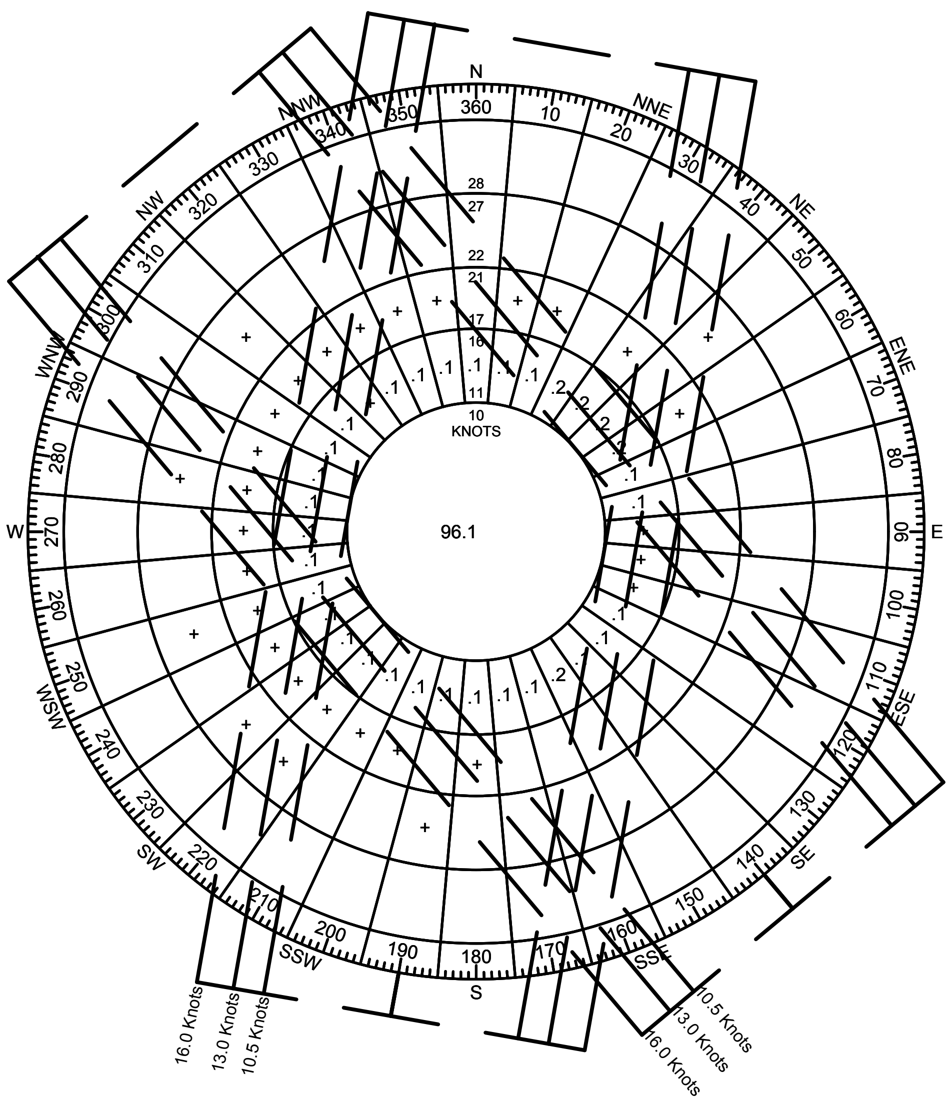
ALL WEATHER

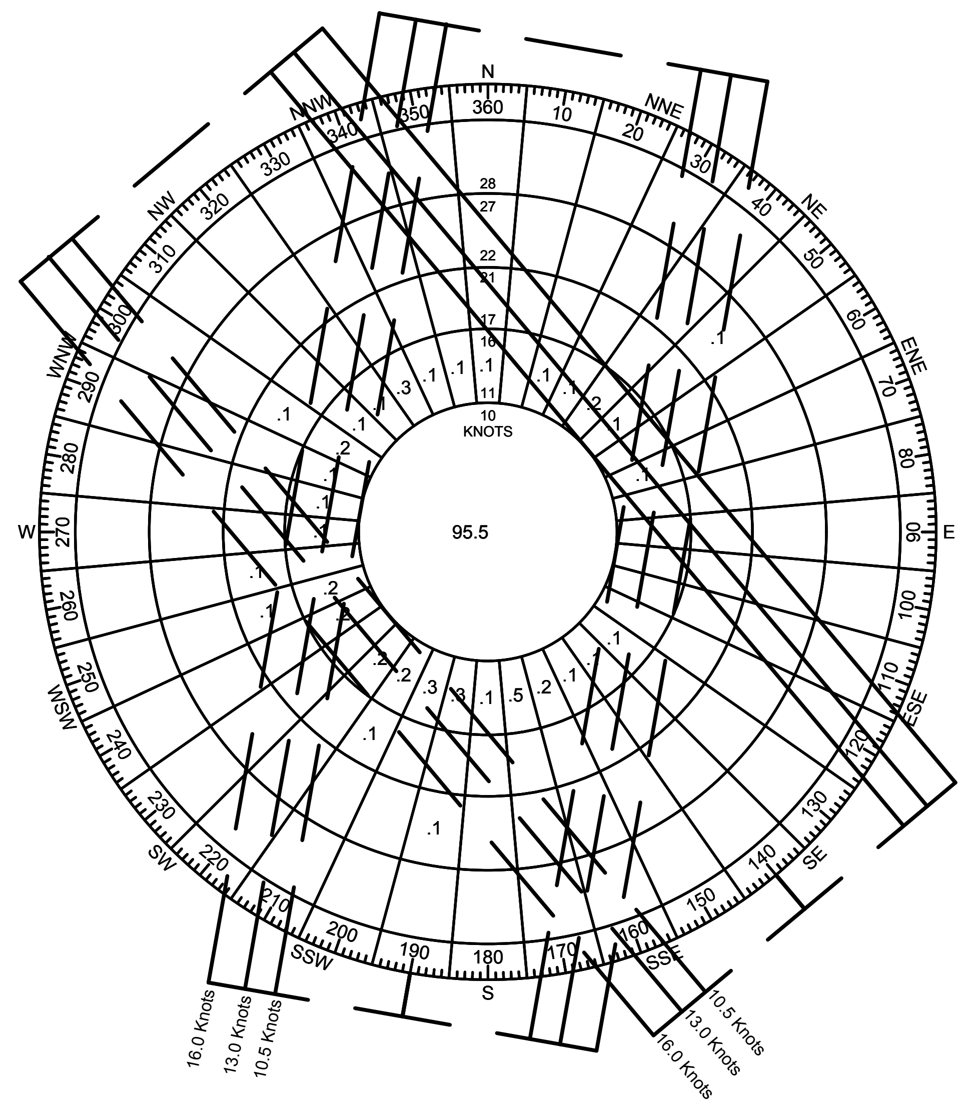


RUNWAY 1-19 & 14-32 WIND COVERAGE

CROSS WIND COMPONENT	ALL WEATHER COVERAGE
10.5 Knots	99.40%
13.0 Knots	99.83%
16.0 Knots	99.98%

Station: Okeechobee County Airport (722261)
Source: National Climatic Data Center/National Oceanic and Atmospheric Administration

IFR

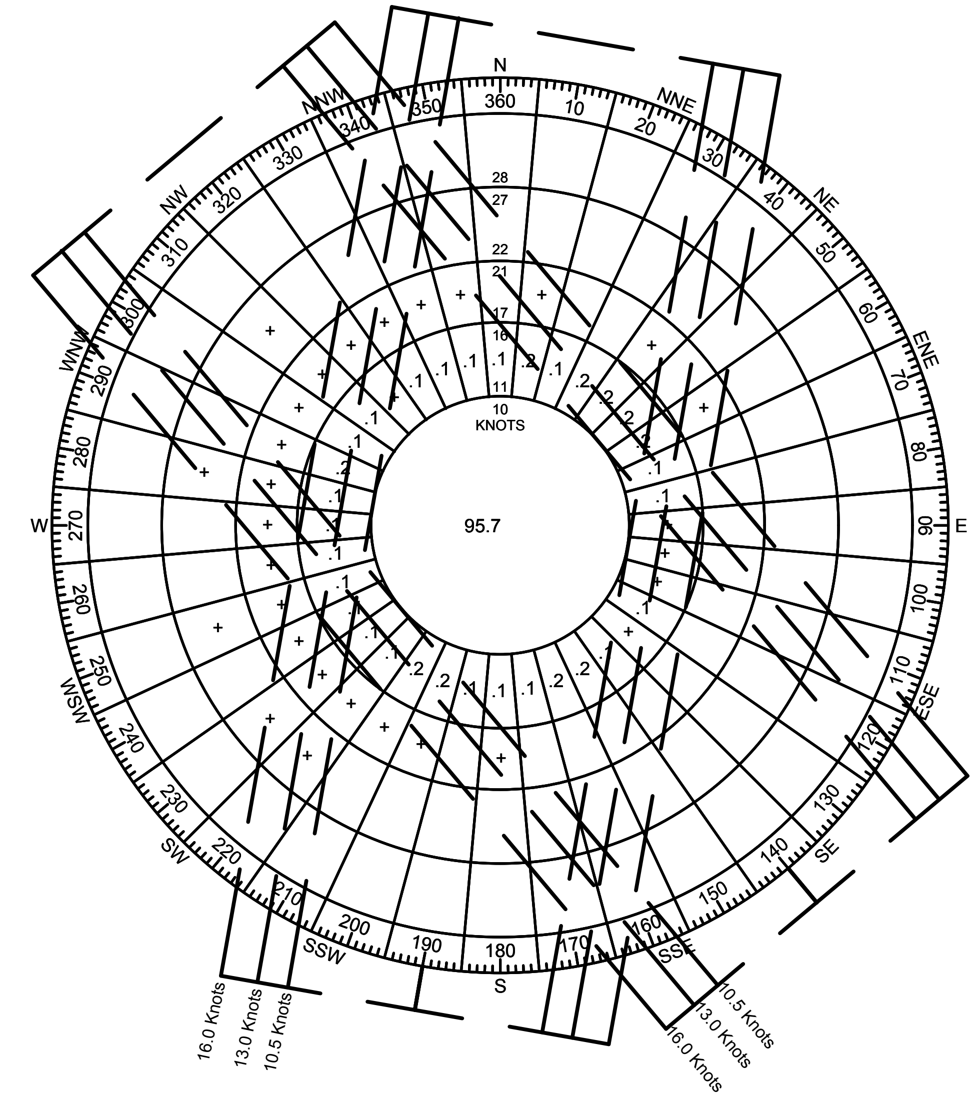


RUNWAY 1-19 & 14-32 WIND COVERAGE

CROSS WIND COMPONENT	IFR COVERAGE
10.5 Knots	99.40%
13.0 Knots	99.69%
16.0 Knots	99.87%

Station: Okeechobee County Airport (722261)
Source: National Climatic Data Center/National Oceanic and Atmospheric Administration

VFR



RUNWAY 1-19 & 14-32 WIND COVERAGE

CROSS WIND COMPONENT	VFR COVERAGE
10.5 Knots	99.36%
13.0 Knots	99.83%
16.0 Knots	99.98%

Station: Okeechobee County Airport (722261)
Source: National Climatic Data Center/National Oceanic and Atmospheric Administration

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Sebring Regional Airport
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Weather Wind Roses

Figure 2-14

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Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Wet Spot

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Map Code	Map Code Name
7	Placid fine sand, frequently ponded, 0 to 1 percent
8	Immokalee sand, 0 to 2 percent slopes
10	Myakka fine sand, 0 to 2 percent slopes
12	Basinger fine sand, 0 to 2 percent slopes
14	Satellite sand, 0 to 2 percent slopes
17	Malabar fine sand, 0 to 2 percent slopes
19	Hicoria mucky sand, depressional
20	Samsula muck, frequently ponded, 0 to 1 percent slopes
22	Brighton muck
24	Pineda sand, 0 to 2 percent slopes
39	Smyrna sand, 0 to 2 percent slopes
43	Urban land
44	Satellite-Basinger-Urban land complex
46	Kaliga muck, frequently flooded
99	Water

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SEF Area Soils Map

Figure 2-15

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SEF Area Floodplains

Figure 2-16

2.5.5. Wetlands

Under EO 11990, *Protection of Wetlands*, 1977, Federal agencies are prohibited from undertaking or aiding for activities, including new construction, located in wetlands unless no practicable alternatives and measures to minimize harm to wetlands have been implemented.

The U.S. Army Corps of Engineers (CoE) and EPA share responsibility for wetland protection and permitting under the Clean Waters Act of 1972. Both define a wetland as, "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Such areas typically include swamps, marshes, and bogs, but may include seasonal wetlands, low area periodically inundated with water, and waterways connecting these wetlands.

Other agencies with non-regulatory responsibilities to create or protect wetlands include the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the Soil Conservation Service. Based on the U.S. Fish and Wildlife Service inventory information, depicted in **Figure 2-17**, there are numerous types of wetlands that exist on airport property. The wetlands include: Freshwater Emergent Wetlands, Freshwater Forested/Shrub Wetlands, Freshwater Ponds, and Riverines.

2.5.6. Species and Creatures

Animal species may be classified as "endangered" when it is in danger of extinction within the foreseeable future throughout all or a significant portion of its range. A "threatened" classification is provided to those species likely to become endangered within the foreseeable future throughout all or a significant part of their ranges. The State of Florida also maintains a state list of endangered and threatened species and "species of special concern". That classification is a species that is vulnerable to certain types of exploitation or environmental changes and have experienced long-term population declines.

Retrieving past survey data, the species that can possibly be located on airport property include the following.

- Gopher Tortoise (Gopherus polyphemus)
- American Alligator (Alligator mississippiensis)
- Florida Burrowing Owl (Anthene cunicularia floridana)
- Florida Sandhill Crane (Grus Canadensis pratensis)

2.5.7. Cultural Resources

Specific areas within airport property are deemed historical structures and important to consider when planning future development. The preservation of those sites is key in maintaining the cultural value that is present on airport property. Currently there are two original structures deemed as historical in nature, that are associated with the Airport's original role as a U.S. Air Corps Flight Training Command facility during World War II (1940's). The most prominent is the control tower, which has been moved from its original position and restored. Located northwest of the original tower is an aircraft hangar (Building 60) from the World War II era. It is currently occupied by an airport tenant.

Plotted By: hask8597 J:\05_Projects\Sebring Regional Airport\#_SEF_AMPU\4.0 Planning & Design\4.1 CAD\4.1.2 Chapter Figures\SEF_WETLANDS.dwg Jun07,2017 - 12:40pm

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Sebring Regional Airport
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SEF Area Wetlands & Other Resources

Figure 2-17

Aviation Activity Forecasts

3. Aviation Activity Forecasts

This chapter presents projections of aviation activity that form the basis to identify the future development needs of the Sebring Regional Airport (SEF). Previous activity forecasts, industry trends, socio-economic conditions, and historic data were analyzed and applied to methodologies accepted by both the Federal Aviation Administration (FAA) and Florida Department of Transportation (FDOT) to develop these forecasts. For a complete picture of operational activities and emerging opportunities at SEF, interviews were also conducted with airport management, airport tenants, and other significant users of the airfield's facilities.

The standard planning period for an airport master plan is 20 years. Since this study was largely conducted between 2017 and 2018, the forecasts are presented for 2023, 2028, and 2038 as the key planning periods are considered at the five, ten, and 20-year horizons. The forecasts primarily use data obtained through 2017, although in some cases, the most recent 12 months of data were also considered.

3.1. Recent Projections of Aircraft Activity

The most recent local, state, and national forecasts for SEF include the 2003 Airport Master Plan Update, FDOT's Florida Aviation System Plan 2025 (FASP), and the FAA's 2017 Terminal Area Forecast (TAF), which was published in January 2018. Since each of these project different forecasts of based aircraft and annual operations, each are summarized below. As required by the FAA, a direct comparison of the recommended forecasts must be made with the FAA TAF. This comparison is included at the end of this chapter.

3.1.1. 2003 Airport Master Plan Update

As with this study, the 2003 Airport Master Plan Update included forecasts which were projected for a 20-year planning period, using 2000 as the base year. The expected number of based aircraft and annual operations for the key planning horizons of that study are included in **Table 3-1**. These figures have also been extrapolated out to 2038 to provide a basis of comparison with the forecasts generated in this study.

Table 3-1 - 2003 Airport Master Plan Update

Year	Based Aircraft	Annual Operations
Base		
2000	84	67,210
Forecast		
2006	88	85,464
2011	94	95,343
2021	105	114,096
2038 (extrapolated)	126	175,117
Average Annual Growth Rate (2000 – 2021)	1.1%	2.6%

Source: 2003 Airport Master Plan Update.

3.1.2. Florida Aviation System Plan

The Florida Aviation System Plan (FASP) provides a comprehensive planning and development guide for the State's public airports. The FASP ensures that Florida has an effective state-wide aviation transportation system, provides a link to the global air transportation network, and effectively interfaces with regional surface transportation systems. In support of these goals, FDOT's Aviation and Spaceports Office provides annual updates to historic aviation data and prepares forecasts of the based aircraft and operations for each public airport in the state. The FASP information is included as part of the Florida Aviation Database with the most recent update providing historic data through 2015 and projections out to 2035. FASP data for the key forecast horizons of this study, including an extrapolation to 2038, are depicted in **Table 3-2**

Table 3-2 - Florida Aviation System Plan

Year	Based Aircraft	Annual Operations
Base		
2015	87	103,087
Forecast		
2023	99	116,127
2028	107	125,101
2038 (extrapolated)	126	145,185
Average Annual Growth Rate (2015 – 2035)	1.6%	1.5%

Source: Florida Aviation Database, 2017.

3.1.3. FAA Terminal Area Forecast

The Terminal Area Forecast (TAF) is prepared annually by the FAA to meet the budget and planning needs of the agency, as well as to provide information for use by state agencies, local authorities, the aviation industry, and public. Projections in the FAA TAF are calculated for each airport in the National Plan of Integrated Airport Systems (NPIAS). In the most recent version of the NPIAS (2017-2021), SEF continues to be designated as a Non-Primary Regional General Aviation airport. The TAF projections are based on the FAA fiscal year, which begins on October 1. The 2017 TAF, which was issued in January 2018, utilizes a 2016 base year with projections out to 2045. The FAA's typical forecasting approach for general aviation airports is to not project any growth in based aircraft or annual operations, which is what they have done for SEF's 2017 TAF. A summary of the TAF is provided in **Table 3-3.**

Table 3-3 - FAA 2016 Terminal Area Forecast

Year	Based Aircraft	Annual Operations
Base		
2016	76	103,087
Forecast		
2023	76	103,087
2028	76	103,087
2038	76	103,087
Average Annual Growth Rate (2016 – 2038)	0.0%	0.0%

Source: 2017 FAA Terminal Area Forecast, issued January 2018.

3.2. Considerations for Projecting Demand

To guide the forecasting effort, an understanding of the relationship between industry trends and the airport operating environment is essential. By comparing historic trends to these elements, it is possible to determine the impacts that changes in the general aviation industry and local economic fluctuations may have had on the Airport's activity. The analysis of recent trends also allows educated assumptions to be made as to how a market might be served or activity affected in the future.

3.2.1. State of the General Aviation Industry

General aviation encompasses all segments of the aviation industry except for the activity that is conducted by scheduled airlines or the military. Examples include pilot training, law enforcement flights, medical transportation, aerial surveys, aerial photography, agricultural spraying, advertising, and various forms of recreation, not to mention business, corporate, and personal travel. As history shows, general aviation is an industry that has struggled through significant impacts, both positive and negative.

Just as the 2003 Airport Master Plan Update for Sebring was finalized, the general aviation industry was in the initial stages of trying to emerge from the impacts of September 11, 2001. Between 2003 and 2007, the industry also experienced major advances in aircraft and navigation technologies; which created new product offerings and services during a period with an overall good economy. These included widespread use of Global Positioning Satellites (GPS) applications in the cockpit, for airport navigational aids, and instrument approaches. This period also resulted in the emergence of very light jet (VLJ) aircraft and the introduction of an entirely new category; the light sport aircraft (LSA). These new product offerings and services bolstered most every segment of the general aviation industry. Unfortunately, there was still limited growth in the total activity generated during this period.

By the end of 2008, most segments of the industry experienced losses as the overall national economy declined during the Great Recession. The VLJ industry was hit hardest as most manufacturers stalled development plans and/or went bankrupt. Data from the General Aviation Manufacturer's Association (GAMA) showed that general aviation aircraft manufactured in the U.S. fell from 3,279 aircraft in 2007 to 1,585 in 2009. It was not until 2011 that GAMA reported the first increase in new general aviation shipments since 2007. While this number has increased almost every year since 2011, 2016 figures are still less than half of those before the Great Recession. Compounding this issue, the 2017 FAA Aerospace Forecast documents the decline in the nation's overall general aviation fleet between 2007 and 2013. It is interesting to note that the greatest decline between 2011 and 2013 was attributed to the 2010 Rule for Re-Registration and Renewal of Aircraft Registration. According to the FAA, this removed cancelled, expired, or revoked records from the national database; however, it is important to note that it did not have an impact on the Airport's number of based aircraft.

Overall, the 2017 FAA Aerospace Forecast projects growth over the next 20 years, despite the industry fluctuations that are likely to continue. According to the FAA, the number of active general aviation aircraft is expected to increase 0.1 percent annually through 2037. The interesting aspect of this overall growth is that the most common single-engine piston aircraft are expected to decline 0.9 percent annually for the period while jet aircraft are forecast to grow 2.3 percent each year. The number of hours flown by all general aviation aircraft is projected to increase at a rate of 0.9 percent each year. Similar to the fleet projections, the hours flown by turbine aircraft are forecast to grow 3.0 percent annually while the single-engine piston aircraft show a decline in activity of 0.9 percent each year. These turbine aircraft projections are supported by figures in the FAA's monthly Business Jet Reports which show that since the low in 2009, operations conducted by general aviation jet aircraft have consistently increased through 2016. They are, however, still below the level recorded for 2007, prior to the negative press during the 2008 and 2009 corporate bailouts which resulted in a 20 percent decrease in total business jet activity by the end of 2009.

3.2.2. Local Socioeconomic Factors

Several socioeconomic indicators were evaluated as they typically have a direct relationship to air travel and airport activity. Overall growth rates and average annual growth rates for Highlands County, Florida, and the United States are presented based on data obtained from Woods & Poole Economics, Inc. The Woods & Poole projections are updated annually, utilizing models which take into account specific local conditions based on historic data back to 1969. While the current historic data sets from Woods & Poole cover the period from 1969 to 2014, only data back to 2005 (10-year historic period) were evaluated to compare with the level of based aircraft and annual operations at SEF over the same period.

Even though the Avon Park Executive Airport is also located in Highlands County, the socioeconomic data for the county is considered to best represent the area served by SEF. Not only is SEF more centrally located among the population centers along U.S. Highway 27; Highlands County is the only county that defines the Sebring Metropolitan Statistical Area (MSA). Additionally, because the economies of adjoining counties are intertwined to a certain extent, the projections made by Woods & Poole for a single county consider the projections of surrounding counties to provide a more realistic regional outlook. The following sections will explore the relationship between changing local socioeconomic factors and airport operations.

3.2.2.1. Population

Highlands County's overall and annual population growth rates have been less than Florida's or the Nation's. Nonetheless, the population in Highlands County has experienced steady growth since 2005 and more important, is expected to outpace its historical growth through 2038, as is seen in **Table 3-4**.

Table 3-4 - Total Population

Year	Highlands County	State of Florida	United States
2005	95,614	17,842,038	295,516,599
2006	97,788	18,166,990	298,379,912
2007	99,023	18,367,842	301,231,207
2008	99,568	18,527,305	304,093,966
2009	98,956	18,652,644	306,771,529
2010	98,703	18,852,220	309,347,057
2011	98,360	19,107,900	311,721,632
2012	98,087	19,355,257	314,112,078
2013	97,919	19,600,311	316,497,531
2014	98,236	19,893,297	318,856,967
Overall Growth	2.7%	11.5%	7.9%
Average Annual Growth Rate (2005 – 2014)	0.3%	1.2%	0.8%
Forecast			
2023	114,880	22,543,758	346,139,643
2028	125,123	24,148,600	362,303,997
2038	146,720	27,440,388	393,714,246
Average Annual Growth Rate (2014 – 2038)	1.7%	1.3%	0.9%

Source: Woods & Poole Economics, Inc., 2016.

3.2.2.2. Employment

Employment data provides an indication of the economic stability for a geographic area. As with population, Highlands County has had slower growth relative to the state and nation. However, projections expect employment levels for Highlands County to increase at higher rates than the state and nation. Additionally, the expected growth for the county is greater than the historical growth since 2005. **Table 3-5** presents the analyzed historic and projected employment statistics.

Table 3-5 - Total Employment (Number of Jobs)

Year	Highlands County	State of Florida	United States
2005	37,703	10,140,037	172,557,332
2006	39,364	10,471,146	176,123,546
2007	40,866	10,626,391	179,885,659
2008	39,240	10,357,493	179,639,866
2009	38,125	9,937,790	174,233,668
2010	37,835	9,877,353	173,034,656
2011	38,116	10,116,944	176,278,657
2012	38,352	10,324,695	179,081,633
2013	37,869	10,617,540	182,390,004
2014	38,876	10,911,329	185,798,752
Overall Growth	3.1%	7.6%	7.7%
Average Annual Growth Rate (2005 – 2014)	0.3%	0.8%	0.8%
Forecast			
2023	47,121	12,880,770	211,998,738
2028	51,937	13,997,840	226,064,979
2038	61,791	16,228,203	252,781,394
Average Annual Growth Rate (2014 – 2038)	1.9%	1.7%	1.3%

Source: Woods & Poole Economics, Inc., 2016.

3.2.2.3. Income

Personal income per capita income represents the ratio of total personal income, before income taxes, to the total resident population with adjustments if the income was made in a different area than where the person resides. Highlands County has outpaced the state in its per capita income growth. More interesting is that Highlands County's per capita income is projected to outpace its historic growth over the course of the planning period. **Table 3-6** presents the analyzed historic and projected per capita income statistics.

Table 3-6 - Total Personal Income per Capita (In Current Dollars)

Year	Highlands County	State of Florida	United States
2005	$24,932	$36,294	$35,904
2006	$26,344	$38,812	$38,144
2007	$27,367	$39,946	$39,821
2008	$27,766	$40,018	$41,082
2009	$27,509	$37,480	$39,376
2010	$28,698	$38,718	$40,277
2011	$29,568	$40,539	$42,453
2012	$29,616	$41,250	$44,266
2013	$29,808	$41,309	$44,438
2014	$30,650	$42,736	$46,050
Overall Growth	22.9%	17.7%	28.3%
Average Annual Growth Rate (2005 – 2014)	2.3%	1.8%	2.8%
Forecast			
2023	$42,455	$56,940	$61,226
2028	$54,395	$71,440	$76,701
2038	$89,534	$115,347	$123,831
Average Annual Growth Rate (2014 – 2038)	4.6%	4.2%	4.2%

Source: Woods & Poole Economics, Inc., 2016.

3.2.2.4. Households

Households represent the number of occupied housing units, which include houses, apartments, a group of rooms, or single rooms occupied as separate living quarters. The number of households does not include facilities such as retirement homes, college dormitories, military barracks, or prisons. The overall growth in the number of households for Highlands County has been close to that of the state's and higher than the nations. Highlands County household units are expected to increase during the next 20 years by a slightly higher rate than its averaged historically. **Table 3-7** presents historic and projected household units.

Table 3-7 - Total Number of Households

Year	Highlands County	State of Florida	United States
2005	41,390	7,198,870	113,617,090
2006	42,140	7,300,150	114,486,120
2007	42,690	7,389,490	115,939,530
2008	42,640	7,408,030	116,538,680
2009	42,080	7,393,210	116,761,870
2010	42,590	7,435,800	116,938,340
2011	43,400	7,671,020	120,155,470
2012	44,330	7,778,800	121,314,660
2013	45,350	7,900,900	122,692,280
2014	46,020	7,981,960	123,463,740
Overall Growth	11.2%	10.9%	8.7%
Average Annual Growth Rate (2005 – 2014)	1.2%	1.2%	0.9%
Forecast			
2023	54,710	9,118,870	135,780,170
2028	59,050	9,632,110	140,506,350
2038	67,610	10,574,750	148,269,780
Average Annual Growth Rate (2014 – 2038)	1.4%	0.9%	0.5%

Source: Woods & Poole Economics, Inc., 2016.

3.2.2.5. Gross Regional Product

Gross Regional Product (GRP) is based on the U.S. Bureau of Economic Analysis gross domestic product data for each state. The nation's figures represent a total for all states while the individual county data has been estimated by Woods & Poole. For the county data, this is done by allocating the state's GRP to the counties based on the proportion of total state earnings by employees originating from a county. Unlike other socioeconomic indicators, Highlands County's GRP has not performed well historically. However, it is interesting to note that over the course of the planning period, the county's GRP is expected to grow at a significant rate. **Table 3-8** presents the historical and projected GRP for the county, state, and nation.

Table 3-8 - Gross Regional Product (In Millions of 2009 Dollars)

Year	Highlands County	State of Florida	United States
2005	$2,063	$758,958	$14,114,806
2006	$2,169	$789,643	$14,548,185
2007	$2,184	$796,772	$14,820,647
2008	$2,014	$753,865	$14,617,100
2009	$2,006	$723,187	$14,320,111
2010	$2,028	$719,387	$14,618,135
2011	$1,956	$707,757	$14,792,276
2012	$1,926	$722,170	$15,116,011
2013	$1,924	$743,331	$15,384,326
2014	$1,939	$771,217	$15,894,995
Overall Growth	-6.0%	1.6%	12.6%
Average Annual Growth Rate (2005 – 2014)	-0.7%	0.2%	1.3%
Forecast			
2023	$2,529	$975,587	$19,507,469
2028	$2,598	$999,921	$19,924,726
2038	$2,669	$1,024,608	$20,345,969
Average Annual Growth Rate (2014 – 2038)	2.5%	2.3%	1.9%

Source: Woods & Poole Economics, Inc., 2016.

3.3. Forecast of Based Aircraft

Based aircraft are those that have a lease either for storage facilities or space on a parking apron at the airport, for a majority of the year. Therefore, the number of aircraft projected to be based at SEF is an important consideration when planning facilities since it directly influences the required storage and parking facilities. Projections of based aircraft also provide an indication of the anticipated growth in flight activity expected to occur at the Airport.

Information on the Airport's based aircraft are uploaded to the FAA's National Based Aircraft Inventory Program. The FAA determines if all of the aircraft reported have a current registration, then a check is made to see if any of the aircraft have been reported by another airport. This creates a validated number of based aircraft for a given airport. That validated count goes back to 2008, which provides ten years of reliable data for SEF. As shown in **Table 3-9,** the FAA's National Based Aircraft Inventory Program documents that 91 aircraft were officially based at

SEF in 2017. Those included a mix of single-engine, multi-engine, jet, and rotorcraft models; however, it is important to note that the National Based Aircraft Inventory Program does not count glider, military, or ultralight aircraft since those may not always have a tail number for registration.

In the past, there have been a few ultralights based at the Airport which were excluded from the validated list. The most recent FAA Airport Master Record (Form 5010) for 2017 documents two ultralight aircraft, in addition to the 91 based aircraft. The 5010 data is based on the annual airport inspection, which is conducted by FDOT Aviation and Spaceports Office staff. While this will be noted in the facility requirements, only the official 2017 count from the National Based Aircraft Inventory Program will be utilized to project future levels of based aircraft.

3.3.1. Historic Growth

Given the cyclical nature of the general aviation industry, it is important to analyze the overall changes that have occurred at the Airport. Despite challenges faced by the industry during the last decade, there was an increase in based aircraft between 2008 and 2017 as documented in **Table 3-9**. The average annual growth for this period was 11.6 percent. Since it is not realistic to expect such double-digit growth to continue over the 20-year planning horizon, the historic based aircraft counts from the previous master plan were evaluated for historic growth. When applied to the current level of based aircraft, this historic average annual growth of 3.9 percent results in a projection of 203 based aircraft by 2038.

Table 3-9 - Historic Based Aircraft

Year	Single-Engine	Multi-Engine	Jet	Rotorcraft	Total
2008	29	3	0	2	34
2009	28	4	1	1	34
2010	32	4	1	1	38
2011	32	4	1	1	38
2012	40	6	1	2	49
2013	41	7	1	2	51
2014	54	9	1	5	69
2015	56	8	1	5	70
2016	57	12	1	4	74
2017	66	14	5	6	91

Source: FAA's National Based Aircraft Inventory Program, 2017.

3.3.2. Previous Growth Projects

As shown in **Table 3-1**, based aircraft projections from the previous master plan had a higher figure for 2011 than the current count of 91 based aircraft. The 2003 study also projected 101 based aircraft by 2017, which is 11 percent higher than the actual figure. Even though the study's overall annual growth rate is considered reasonable, much has changed in the general aviation industry since then. Therefore, the previous master plan projection was not considered further.

The statewide plan for Florida is updated each year; therefore, it benefits from having more up to date based aircraft counts as well as being able to adjust annually to changes in the industry. As a result, the projection in the current FASP with a 2015 base year is only off by one based aircraft to those documented in 2017. Therefore, the projected growth from the current FASP has been utilized to generate an additional forecast using the current based aircraft data. By 2038, there would be 127 based aircraft at SEF using FDOT's projected average annual growth rate of 1.6 percent.

As noted previously, the 2017 TAF does not project any growth in the Airport's number of based aircraft.

3.3.3. National Active Fleet Forecasts

Each year the FAA provides a long-term projection for the active general aviation fleet, with "active" being defined as any aircraft flying at least one hour during the year. Decreases in the nation's total active fleet occurred between 2007 and 2013. This was followed by a two-year increase through 2015 and then another decline in 2016. The FAA does not reverse the downward trend for active aircraft until 2021, and even then, their projections do not exceed the 2016 level until 2028. Overall the FAA projects the active general aviation fleet to only increase at a rate of 0.1 percent each year through 2037. For the last ten years of the FAA projection (2028 to 2037), this average growth doubles to 0.2 percent. Regardless, even applying the higher growth to SEF's based aircraft count only results in 95 based aircraft by 2038.

3.3.4. Regression Analysis

Regression analysis was also used to estimate the based aircraft for the planning period. Individual and combined groups of socioeconomic data were compared to historic based aircraft levels in an attempt to identify significant correlations with the independent variables of the surrounding area. These models were built on the premise that the tendency for people to use general aviation can be related to variables such as an area's population or income. Specifically, population and the number of households were included based on the assumption that the number of based aircraft is inherently related to the number of people in the area served by the Airport. Employment and Gross Regional Product (GRP) data were included to provide variables indicative of the growth and/or stability of the area's economy and business. Income data was utilized because the use of general aviation has a median level of expense. In other words, it is believed that more people tend to use general aviation as their income level increases.

A variety of projections were made employing the socioeconomic datasets described. Initially, separate simple regression analyses were conducted using population, employment, income, households, and GRP as single independent variables. While only income and households demonstrated some significant correlation, each variable demonstrated the expected relationship with historic based aircraft data. Much higher correlations were created in the multiple regression models which evaluated different combinations of independent variables.

For any model with multiple independent variables, an adjusted R2 is used as the coefficient of determination. An adjusted R2 value of zero shows no relationship and values approaching 1.0 show a strong relationship and overall fit between the estimated regression equation and the sample data. Typically, values of 0.95 or higher indicate a significant relationship. However, other statistics of the various regression models were also considered in addition to the adjusted R2 value. These included the individual t-stats and P-values of the independent variables as well as the overall standard error of the equation (ability of the model to project accurately. Of the various multiple regression models, there were to two that showed significant correlation. The regression model using population, households, and GRP had an adjusted R2 of 0.941. However, upon further evaluation of the equation, it is believed this model has some multicollinearity (a phenomenon when at least two predictor variables have similar equivalencies to the dependent variable) between the population and household variables. Because of this and other statistical characteristics the model using employment, income, and households, with an adjusted R2 of 0.917, was selected to estimate the future level of based aircraft. The result is 187 based aircraft by 2038 which represents an average annual growth rate of 3.5 percent.

3.3.5. Selected Based Aircraft Forecast

Over the years, SEF has been supported considerably by the Sebring Airport Authority, City of Sebring, Highlands County, FDOT, and FAA. This is an important observation to make as it has had a direct impact on the ability to improve the infrastructure and services offered. The result has been steady growth of the airport facilities including the development of new hangar buildings and aircraft parking apron improvements. These are important to consider when evaluating the various projections shown in **Table 3-10**.

Table 3-10 - Comparison of Based Aircraft Projections

Year	Historic Growth	Statewide System Plan	National Active Fleet	Regression Analysis	Selected Forecast
Base					
2017	91	91	91	91	91
Forecast					
2023	114	100	92	112	102
2028	139	108	93	133	112
2038	203	127	95	187	135
Average Annual Growth Rate	3.9%	1.6%	0.2%	3.5%	1.9%

Source: ESA, 2017.

This is not to say that the Airport has been insulated from various ups and downs of the general aviation industry or economy for that matter. In fact, the historic based aircraft counts show a couple of decreases since the last master plan was conducted. One of the declining years following September 11th is suspected to be attributed to factors such as increased operating costs (primarily insurance and fuel). The one after 2007 could be due to the validation process of the National Based Aircraft Inventory Program which began in 2008, the economic downturn at that time, or a combination of both.

Regardless, it can be documented that aviation in Florida has not been as significantly impacted as the rest of the nation over the past couple of decades. This, coupled with the State's strong economy and population growth, provides much of the reasoning behind the optimistic outlook of activity in the state's system plan. Similarly, the local socioeconomic data shows growth for the area, with a minor exception for the estimated GRP. To get any sort of correlation, more than ten years of this socioeconomic data ended up being considered to create the different regression models.

Even though Florida, the local area, and the Airport have had significant growth, consideration must be given to current issues within the general aviation industry. The FAA's active fleet projections are just one indicator that the current trends at SEF may not continue. Therefore, it was hypothesized that this data could temper the regression model results. Unfortunately, when active fleet data was introduced as another independent variable, the best models did not result in much correlation at all. Nonetheless, a more conservative projection is recommended as the immediate future of general aviation, particularly for the smaller piston aircraft models, continues to change. Two factors directly related to this expected change are the requirement for Automatic Dependent Surveillance-Broadcast (ADS-B) by January 1, 2020 for all aircraft operating in airspace where transponders are mandatory today and the eventual phasing out of 100LL AvGas fuel which will have an undetermined impact on every aircraft engine built from the 1920s until today that uses this leaded gasoline. Excluding experimental and light sport aircraft, many of which use MoGas, the FAA's figures for 2016 show that nearly 70 percent of the 209,500 active general aviation aircraft are piston and use AvGas.

While the nation's active fleet are reasonable forecasts for their purposes, they cannot take into consideration the local issues and conditions described above. In order to account for these industry factors, an average of the growth projected by the regression model and that of the FAA's expected changes in the active general aviation fleet was made. The result is a more conservative growth in the number of based aircraft (average annual rate of 1.9 percent). Looking back at the historical growth, this selected forecast is not only considered conservative, but also realistic for the based aircraft projections needed in this study.

3.4. Forecast of Based Aircraft Fleet Mix

Projecting the types of based aircraft is necessary since different aircraft require different facilities. Overall, the future based aircraft fleet mix was determined by studying the projections of the national fleet, then comparing those to the current aircraft types operating at SEF. While the overall growth in the nation's active fleet was not utilized to forecast based aircraft, the individual projections of aircraft types are very useful in predicting the future based aircraft fleet mix.

3.4.1. The Nation's Active General Aviation Fleet

Every year the nation's active general aviation fleet is published as part of the FAA Aerospace Forecasts. In 2016 there were 209,905 active general aviation aircraft. As noted previously, this figure has primarily declined since 2007 and is not expected to recover back to the 2016 level until 2028. However, by 2037 the FAA predicts this figure to increase to 213,420 aircraft. While the FAA provides counts for a number of aircraft categories, they have been simplified into the five shown in **Table 3-11**.

Table 3-11 - Forecast of Nation's Active Fleet

Type	2016 Fleet Mix	2037 Fleet Mix	Average Annual Growth Rate
Single-Engine	75.1%	68.8%	-0.3%
Multi-Engine (piston & turboprop)	10.8%	11.5%	0.4%
Jet	6.6%	10.3%	2.3%
Rotorcraft	5.1%	7.0%	1.6%
Other (Gliders, Balloons, etc.)	2.4%	2.4%	0.0%

Source: 2017 FAA Aerospace Forecasts.

Within the single-engine grouping is the single-engine piston, experimental, and light sport aircraft categories. The multi-engine group contains both piston and turboprop models, as the rotorcraft group contains both piston and turbine models. The jet category covers all ranges of turbojet general aviation aircraft, from the very light jets to the heaviest business jets.

The FAA projects a noticeable growth in the jet category and several reasons exist to support this increase. While the use of business aircraft fell after 2007, jet aircraft use by smaller companies continues to increase as various charter, lease, time-share, partnership, and fractional ownership agreements provide different options for these aircraft to obtain higher utilization rates. More businesses also rely on general aviation transport because it provides safe, efficient, flexible, and reliable transportation. Fractional ownership offers consumers a more efficient use of time by providing faster point-to-point travel and the ability to conduct business while flying, not to mention offering convenient enplaning and deplaning of flights (when compared to the airlines).

The continuing popularity of travel by general aviation aircraft is also due to the ability to use smaller, less-congested airports which are more convenient to the final destination. A large part of this is due to the expanded application of GPS technologies in navigation, but more specifically the myriad of new runway specific instrument approach procedures that have been established at even the smallest airports. In the FAA's projections, jet aircraft models (including the very light jets) are expected to replace a number of the piston aircraft in the future. Hence, one of the reasons the single-engine (piston) category is on a decline and the multi-engine group shows virtually no growth. In all jets are expected to represent over 10 percent of the active general aviation fleet by 2037.

Finally, while the single-engine category is projected to decrease, this is all attributed to the expected declines in the traditional single-engine piston aircraft. This overshadows the expected increases for both experimental and light sport aircraft included in the FAA Aerospace Forecasts. The popularity of those aircraft is important to consider given the producers of such small aircraft at SEF, the lower operating cost for many of them, and Florida's desirable flying conditions.

3.4.2. Sebring Regional Airport Based Fleet Mix

The 2017 based aircraft fleet mix at SEF is comprised of 72.5 percent single-engine, 15.4 percent multi-engine, 5.5 percent jet, and 6.6 percent rotorcraft. Throughout the planning period, the mix of aircraft is expected to remain predominately single-engine (including experimental and light sport aircraft). The more significant changes are expected to occur in the number of jet and rotorcraft projected to be based at the Airport. This is reasonable considering that the FAA has predicted that turbojet technology is at the point where it is truly feasible as a replacement to the more traditional piston-powered fleet. Likewise, due to their flexibility, utilization, and popularity, rotorcraft are expected to increase. **Table 3-12** presents the based aircraft fleet mix forecast.

Table 3-12 - Forecast of Based Aircraft Fleet Mix

Type	2017	2023	2028	2038
Single-Engine	66	72	75	81
Multi-Engine (piston & Turboprop)	14	16	17	19
Jet	5	7	11	23
Rotorcraft	6	7	9	12
Other (Gliders, Balloons, etc.)	0	0	0	0
Total	91	102	112	135

Source: ESA, 2017.

The Airport's single-engine category is predominantly comprised of Beech, Cessna, Mooney, and Piper models, as well as a growing number of Tecnam aircraft. The multi-engine aircraft include an Aero Commander 500, Beech Baron 55, Piper Seneca, Tecnam P2006T, and a number of AirCam aircraft. As indicated before, the nation's multi-engine fleet is only anticipated to grow slightly in the future; and, any growth in the single-engine category would mostly be limited to experimental and light sport aircraft models. However, while the Airport's overall percent for both the single and multi-engine aircraft categories are expected to decrease, the total number for these aircraft still increases over the planning period. The additional single-engine aircraft are expected to be similar to those currently at the Airport, while those in the multi-engine category are expected to be predominantly turboprop.

Although jet aircraft are expected to be the fastest growing segment of the future active aircraft fleet, those at SEF are only expected to increase by a few during the short-term planning period. This is because three of the five jets currently based at the Airport are retired Boeing 727s which are just being stored until they are sold. Another is a Boeing 737 that is used on a regular basis as an aircraft engine test bed, and there is also a medium sized Gulfstream G150 jet. Therefore, at least three of the jet aircraft in 2023 are likely to replace the retired aircraft in the total count for that year. The next group of based jets are expected to include additional small to medium sized business jet aircraft such as the popular models in the Bombardier Learjet, Cessna Citation, and Dassault Falcon series. Larger jet aircraft are expected by the middle of the planning period to include models from the Beechcraft Hawker, Bombardier Challenger, Dassault Falcon, and Gulfstream series.

The rotorcraft currently based at SEF include two Bell 407s operated by Aeromed for Tampa General Hospital while the others are a mix of smaller, single-engine piston helicopters. Over the course of the planning period, the additional rotorcraft are expected to continue to include both piston and turbine powered models, such as the popular Bell, Eurocopter, and Robinson series helicopters.

3.5. Forecast of Annual Operations

An aircraft operation is counted as either one landing or one takeoff. Further, a touch and go operation is counted as two operations, since the aircraft technically lands and immediately takes off. Unfortunately, without an airport traffic control tower (ATCT), most of the Airport's annual operations data originates from what is recorded on the FAA Airport Master Record (Form 5010). Both the FASP and FAA TAF have continually recorded 103,087 annual operations each year, for the past decade, indicating that estimated annual operations were not updated as part of FDOT's annual airport inspection.

After discussions with airport management and interviews with major tenants, the historic level of annual operations for the airport has come into question. More specifically, there is no documentation as to why there was a significant increase in the total annual operations for the years immediately following the historic and base year (2000) counts accepted in the last master plan. Therefore, it was agreed that a new estimate of the current level of operations was required. **Table 3-13** compares the historic annual operations documented in the 2003 Airport Master Plan Update along with those from the FASP and the most recent FAA TAF.

Table 3-13 - Comparison of Historic Annual Operations

Year	2003 Airport Master Plan Update	Florida Aviation System Plan 2025	2017 FAA Terminal Area Forecast
1990	20,000	43,350	43,350
1991	28,000	45,328	45,328
1992	36,000	36,000	36,000
1993	36,000	36,000	36,000
1994	34,500	34,500	34,500
1995	34,500	34,500	34,500
1996	48,200	121,900	34,500
1997	36,500	121,900	121,900
1998	61,700	64,113	121,900
1999	64,113	66,213	64,113
2000	67,210	74,659	64,113
2001	-	97,509	74,659
2002	-	100,009	74,659
2003	-	100,009	74,659
2004	-	102,255	74,659
2005	-	103,487	102,255
2006	-	103,087	103,087
2007	-	103,087	103,087
2008	-	103,087	103,087
2009	-	103,087	103,087
2010	-	103,087	103,087
2011	-	103,087	103,087
2012	-	103,087	103,087
2013	-	103,087	103,087
2014	-	103,087	103,087
2015	-	103,087	103,087
2016	-	-	103,087

Source: 2003 Airport Master Plan Update, 2017 Florida Aviation Database, and 2017 FAA Terminal Area Forecast.

3.5.1. Estimate of Current Annual Operations

The aviation industry has derived several methodologies to address the problem of estimating annual aircraft operations at non-towered airports. These range from extrapolating visual counts taken over a set period, applying an estimate of operations per based aircraft, utilizing fuel sales/aircraft logs, applying regression models, deploying acoustical counters, and installing cameras to capture aircraft movements.

3.5.1.1. Methodologies Not Applied

In 2001, the Model for Estimating General Aviation Operations at Non-Towered Airports Using Towered and Non-Towered Airport Data was prepared for the FAA. The final regression model developed assumed that aircraft activity at non-towered general aviation airports is related to demographic features of the surrounding area, along with other characteristics of the airport. Previous tests of this model show it results in varying estimates depending on the size of the general aviation airport. In fact, it is documented to underestimate activity for most of the active non-towered airports evaluated. This would appear to be the case for SEF since the regression model utilizes the percentage of based aircraft and population within a 100-mile radius. For SEF, that would encompass an area including the cities of Orlando and Sanford to the north; the east coast of Florida from Titusville south to West Palm Beach; and, the west coast of Florida from Tampa Bay south to Naples. Given the number of airports and population within this area, it is certain the activity at SEF would be underestimated; therefore, this methodology was not applied.

The Airport Cooperative Research Program (ACRP) is a division of the Transportation Research Board which conducts FAA sponsored research to create solutions to problems faced by airport operators. Both ACRP Synthesis 4 - Counting Aircraft Operations at Non-Towered Airports (2007) and ACRP Report 129 - Evaluating Methods for Counting Aircraft Operations at Non-Towered Airports (2015) conclude that using samples of activity creates the most accurate estimates for annual operations. However, such sampling should occur for two weeks out of each of the four seasons for extrapolation into an annual estimate. For this study, the common sampling methods (visual counts, acoustical counters, or video cameras) were not employed due to time and budget limitations. If the Airport has the need to further refine their estimated annual operations, this method could be implemented.

3.5.1.2. Data Collected on Aircraft Activity

During the inventory phase of this study, detailed information was obtained by conducting interviews with the major tenants and aircraft operators. The most significant data came from the sole fixed base operator (FBO), the aircraft maintenance providers, and the producers of small aircraft at SEF.

As the sole FBO, Volo Aviation is also the only provider of aircraft fuel services. During interviews with management, detailed daily logs of the AvGas (100LL), Jet-A, MoGas, and military jet fuel sales, including the airport's self-serve tank systems, were provided. These records, covering the past three years, were utilized as a starting point to estimate annual operations. This effort first looked at the different special events occurring at the Airport. There are events hosted by the Airport and/or the Sebring International Raceway, almost every month, which generate a portion of the Airport's typical aircraft activity. Those annual events include:

January:

- U.S. Sport Aviation Expo
- Hoosier Sports Car Club of America (SCCA) Hoosier Super Tour at Sebring
- National Auto Sport Association Event

February:

- International Motor Sports Association (IMSA) Winter Testing
- Indy Car Team Testing
- Porsche Club of America Event

March:

- 12 Hours of Sebring Race Week
- Sportscar Vintage Racing Association (SVRA) Vintage Classic
- Trans Am Championship

April:

- National Auto Sport Association Event

May

- International Aerobatic Club (IAC) Competition

June

- National Auto Sport Association Event

July

- Formula & Automobile Racing Association (FARA) Sebring 500

October

- National Auto Sport Association Event
- Indy Car Team Testing

November

- International Aerobatic Club (IAC) East Coast Championships
- Indy Car Team Testing

December

- Indy Car Team Testing

Those recurring events typically run for three to four days each, with organizers, sponsors, and participants arriving days beforehand. Seasonal samples of the aircraft fueling operations for 2015, 2016, and 2017 were tabulated. Included within the different sampling periods were the sales generated by the smaller aircraft before, during, and after the U.S. Sport Aviation Expo as well as those by the larger corporate aircraft that arrive for the 12 Hours of Sebring Race Week. When extrapolated out for a full year, the average annual fuel sale operations for the sample periods over the three years ranged from 8,700 to 12,000. The average annual number of aircraft fueling operations during those different times of the year were multiplied by two considering it is safe to assume that the aircraft must have arrived and departed the airfield at least once for each fuel purchase. That results in an average of 20,700 annual operations.

Carter Aircraft Services, JB Aircraft Engine, and Lockwood Aviation Repair provide major airframe and major powerplant repairs at SEF. During interviews, it was discussed that a number of the aircraft serviced by Carter Aircraft each year were also serviced by JB Aircraft, since some would come in for work on both the aircraft and engine. There is very little, if any, overlap between JB Aircraft and Lockwood Aviation, since Lockwood specializes in the Rotax engines that are common to many small aircraft. In fact, a sister company (Lockwood Aircraft) produces the light AirCam multi-engine aircraft kits at SEF. This aircraft utilizes two Rotax engines. Based on the information provided during interviews, it is estimated that an average of 300 aircraft are serviced each year by these three firms. Assuming each aircraft must have arrived and departed the airfield at least once for the maintenance provided, this results in an average of 600 annual operations.

Tecnam Aircraft is one of the largest producers of small aircraft in the world, including a number of light sport aircraft (LSA) models. Their SEF facility is their primary North American operation with aircraft assembly and production; flight testing; aircraft dealership showroom and delivery center; training center; airframe maintenance; and parts warehouse. Detailed information about Tecnam's annual activity was obtained during interviews with the company's management. Each year, the company sells about 88 aircraft. As part of this production, 1,000 hours are spent on test flights with approximately four landings per hour. Tecnam also conducts 1,600 hours of demonstration flights per year, each of which also performs approximately four landings per hour. Maintenance is conducted on about 50 aircraft coming to the airport each year while employees contribute another 250 annual flights for commuting. In all, Tecnam generates an average of 21,400 annual aircraft operations.

When the data provided by the major tenants and aircraft operators is combined, it results in 42,700 annual operations. However, this does not capture all of the activity, especially since not all aircraft purchase fuel with each flight, nor can the fuel records accurately account for all of the takeoffs and landings conducted at the airport by aircraft purchasing fuel; especially touch and go operations. Therefore, an additional method was considered to estimate the other annual airport operations.

As mentioned previously, a common approach to estimating activity at a non-towered airport is to assign a set number of operations to each aircraft based at an airport. That methodology is not considered the most accurate if a set figure is assigned to a group of similarly categorized non-towered airports, since no two airports operate the same. However, in helping to estimate the current level of annual operations at SEF, this methodology can be useful if local data is utilized. The underlying assumption is that more than half of the current operations have been defined using the information obtained from the Airport's major tenants and aircraft operators. Therefore, the operations per based aircraft is only being applied to account for the activity that could not be quantified from the information and data collected during interviews.

Based on the historic data in the 2003 Airport Master Plan Update, the average operations per based aircraft between 1990 and 2000 was 753. The same periods in the FASP and FAA TAF yielded 1,149 and 1,052 operations per based aircraft at SEF, respectively. Those averages increased to 1,485 and 1,703 operations per based aircraft, which again reflect the unrealistic historic levels of activity for SEF in both the FASP and FAA TAF.

To apply the Airport's average 753 operations per based aircraft to complete the estimate of annual operations, some additional assumptions have been made. First, as described above, it is assumed that more than half of the operations have been defined based on the data provided by the major tenants and aircraft operators. Therefore, it was assumed that no more than half of the 753 operations per based aircraft should be applied (370 selected). Next, of the 91 based aircraft documented at SEF in 2017, ten should not be included in the operations per based aircraft portion of the estimate, as six are used by Tecnam for their demonstration flights (which were already accounted) and four include the three Boeing 727 and one Boeing 737 aircraft, which did not conduct any operations in 2017 other than the arrival of one of the Boeing 727s. Therefore, the final portion to estimate the current annual airport operations was derived by assigning 370 annual operations to the remaining 81 based aircraft, resulting in 29,970 annual operations. **Table 3-14** summarizes the estimated current annual operations associated with the various airport operators.

Table 3-14 - Estimate of Current Annual Operations

	Annual Aircraft Operations (2017)
Volo Aviation Daily Fuel Logs (2 operations per transaction)	20,700
Carter Aircraft, JB Aircraft, and Lockwood Aviation (2 operations per aircraft serviced)	600
Tecnam Aircraft (aircraft testing, demo flights, maintenance, and other)	21,400
Adjusted Operations per Based Aircraft (370 operations by the 81 based aircraft considered)	29,970
Total Annual Operations	72,670

Source: Analysis of airport tenant survey information and 2003 Airport Master Plan Update data.

At approximately 70 percent of the 103,087 operations currently recorded by both FDOT and FAA, the estimated 72,670 annual operations are considered representative of the activity conducted at SEF in 2017 and therefore reasonable to utilize as the base year level of activity for the remainder of this study.

3.5.2. Historic Growth

As with based aircraft, historic data should be considered when analyzing the potential growth in aviation activity for an airport. Unfortunately, since the past decade of historic data was flatlined and the level of annual operations reset for 2017, this projection would result in a negative trend. However, the average annual growth rate between the base years accepted for the last master plan (2000) and the 2017 estimate was evaluated. That effectively eliminated the ten years in question when 103,087 annual operations were reported. However, when the resulting average annual increase of 0.5 percent is applied, it projects only 80,694 annual operations by 2038. Since this is not considered realistic, it was not included in the final comparison of activity projections.

3.5.3. Previous Growth Projections

Annual operations in the 2003 Airport Master Plan Update were projected to have an average growth rate of 2.6 percent over the 20-year planning period. This projection was generated by analyzing the different types of operations separately. As a result, 106,431 annual operations were expected by 2017, which is much higher than the estimate of 72,670 annual operations made in this study. Due to considerable change at the Airport and in the industry since that time, this previous growth rate was not utilized to develop a new forecast.

As with based aircraft, projections of annual operations in the FASP benefit from being updated on an annual basis. Not only does this help temper industry fluctuations, it also allows adjustments to be made to accommodate any local or regional changes. Even though the current FASP projects future activity using 103,087 annual operations for its base year (2015), the growth rate is still considered applicable; because, even though the base year figure may have been questioned, the state's methodology for updating these projections each year was not. Therefore, the average annual growth of 1.5 percent from the FASP was applied to the 2017 estimate of annual airport operations. Doing so predicts SEF's annual aircraft operations to reach 99,344 by 2038.

As noted previously, the 2017 TAF does not project any growth in the Airport's annual operations.

3.5.4. Utilization of the General Aviation Fleet

Each year, as part of their Aerospace Forecasts, the FAA provides historic data and projections on the number of hours flown by general aviation aircraft. In the 2017 Aerospace Forecasts, the FAA anticipates the utilization of the fleet to increase at an average annual rate of 1.0 percent between 2016 and 2037. The primary assumption by the FAA for this growth is that new aircraft utilization will increase. The turbine fleet (including rotorcraft), which already have a high utilization rate, are expected to increase the most. Over the course of the planning period, jet aircraft alone are expected to increase their utilization an average of 3.0 percent each year.

The FAA's positive outlook on the overall general aviation hours flown have been applied to the aircraft operations for SEF to create a new forecast scenario. This results in 89,558 annual operations by the end of the planning period.

3.5.5. Market Share

A common methodology for forecasting aviation activity is the use of market share analysis. This approach allows a comparison to be made of the annual operations SEF has supported against a defined data set. In the Aerospace Forecasts, the FAA documents and projects the total operations conducted at all of the towered airports in U.S. A separate count and forecast for the general aviation operations are also included in these data sets.

The annual operations accepted for the base year (2000) of the last master plan and the 2017 estimate from this study were evaluated against this FAA data. When compared to the nation's tower data for general aviation activity, the Airport has nearly doubled the percentage it represents in the overall operations recorded. Assuming a similar trend will continue over the next 20 years, SEF has the possibility to represent an even larger portion of the nation's general aviation activity; especially since the FAA expects the nation's aviation activity to reverse its nearly two-decade decline, beginning in 2017. Using the FAA's projected annual growth rate (3.4 percent) for the nation's general aviation operations at towered airports, an estimate was then made for this potential share. Applying that growth rate to the Airport's annual aircraft operations results in approximately 146,651 by 2038.

3.5.6. Operations Per Based Aircraft

Another forecast was generated by assigning a representative level of annual operations for each based aircraft. As previously noted, this methodology is not considered the most accurate if a set figure is assigned to a group of similarly categorized non-towered airports. However, utilizing the estimated 2017 activity with the current 91 based aircraft creates an applicable projection for future activity levels. The 2017 data reflects approximately 800 operations per based aircraft which when combined with the selected forecast of based aircraft (135) projects 108,000 annual operations by 2038. This reflects the same average growth rate of 1.9 percent as that of the selected based aircraft forecast.

3.5.7. Omitted Forecast Methodologies

Both regression analysis and the use of historic fuel sales were omitted from this analysis. Essentially, no regression model can be generated given the fact that so much of the recent historical operations were flatlined and the current level of activity reset for 2017. In other words, it is not possible for any of the local socioeconomic or industry data available to create a model that could explain the historic counts.

Historic fuel sales were considered to project future airport activity, but quickly abandoned. As noted previously, the average annual fuel sales operations ranged from 8,700 to 12,000 for the three years of fuel logs provided by the FBO. While this data helped estimate the current level of airport activity, it does not cover a long enough period to identify any trends. Airport records on the total annual fuel flowage provided a longer period (six years), but it is difficult to translate this into actual activity levels, primarily due to the fact that aircraft using AvGas, Jet-A, MoGas, and military fuels all purchase vastly different volumes of fuel during each sale. Regardless, it is important to note that the average annual growth in the total number of gallons for each fuel type has been significant over the past six years. Those average annual rates are 5.3 percent for AvGas, 14.3 percent for Jet-A, 20.7 percent for MoGas, and 13.1 percent for military jet fuels.

3.5.8. Selected Forecast of Aircraft Operations

Each of the projections shown in **Table 3-15** were generated using accepted methodologies. Therefore, selection of a preferred forecast largely depends on the data used and how the associated assumptions fit actual airport activity and trends. In addition to the expected changes in the industry, the selection of a preferred forecast also needs to take into account the airport improvements that have occurred and will continue to occur. Finally, no future projection should be selected if it might include embedded constraints to the Airport's potential growth.

Nationally, activity conducted by general aviation aircraft has had an overall decline for more than a decade. In fact, the nation's total operations have not achieved the levels that existed prior to the September 11th terrorist attacks. That overall decline continued through the years that followed, including the 2008/09 Great Recession. But as noted in the market share analysis, the FAA expects that trend to reverse in 2017 and the nation's overall general aviation operations to increase over the next 20 years. More important when evaluating SEF, Florida has not experienced as sharp of a decline in aviation activity as the rest of the nation.

Between 2000 and 2016, general aviation operations at the nation's towered airports decreased an average of 2.7 percent each year. Activity for Florida's towered airports over the same period only had an average annual decrease of 0.9 percent. Even more significant is that since 2010 (after the Great Recession) the nation's total general aviation activity at towered airports slowed to an average annual decline of 0.7 percent while Florida's have increased 1.5 percent. This clearly demonstrates that Florida's general aviation industry has been recovering with growth in activity documented each year since 2010. When coupled with the population and economic growth expected in Highlands County, this results in an optimistic outlook for the Airport's future general aviation activity.

Table 3-15 - Projections of Annual Aircraft Operations

Year	Statewide System Plan	Utilization of General Aviation Fleet	National Market Share	Operations per Based Aircraft	Selected Forecast
Base					
2017	72,670	72,670	72,670	72,670	72,670
Forecast					
2023	79,461	77,141	88,813	81,600	84,275
2028	85,602	81,076	104,974	89,600	95,349
2038	99,344	89,558	146,651	108,000	122,055
Average Annual Growth Rate	1.5%	1.0%	3.4%	1.9%	2.5%

Source: ESA, 2017.

Given the State's recovery, the forecast generated by evaluating the overall utilization of the nation's general aviation fleet is considered constrained for the Florida market. Operations per based aircraft applies local current airport conditions to predict future activity, that methodology does not benefit from historical airport data. Therefore, both have been excluded from further consideration.

The market share analysis essentially creates a performance index between the Airport's activity and those airports in the nation with an ATCT. The index is then utilized with the FAA's projected level of general aviation operations for all towered airports through 2037. This generates a forecast for SEF of an average annual operations increase of 3.4 percent, which seems a bit overly optimistic. It should be noted that a market share analysis between SEF and the State's activity was not created since neither the FAA's Aerospace Forecasts nor their Operations Network (OPSNET) provide any future projections for just Florida airports (towered or non-towered).

While the market share analysis is considered an accepted overall forecast, the projection generated utilizing the expected growth from the FASP was also considered. However, unlike the market share, the projection based on the most recent Florida statewide system plan is considered conservative for SEF. While the 1.5 percent annual growth rate is certainly a plausible scenario, the potential for different types of activity to expand at SEF exists. Even though the FASP is updated annually, it cannot account for all of the changes in the local area, either those occurring at the Airport as facilities are improved, or those associated with different annual events held at the Airport. One only needs to look at the significant growth in all types of fuel sales data over the past six years to see that the Airport's activity is increasing.

For the purposes of this study, an average of the annual operations generated by the market share and statewide system plan projections was made. This resulted in an annual growth rate of 2.5 percent over the 20-year planning horizon for a total of 122,055 annual operations by 2038. On average, this represents about 2,300 additional aircraft operations each year. While actual annual operations statistic will certainly fluctuate, this expected growth is considered both reasonable and realistic to plan for the Airport's future needs.

3.6. Types of Aircraft Operations

The following sections address the types of aviation activity that will make up the forecasted operations. This includes a break out of the local, itinerant, and instrument operations, as well as a discussion on military operations. Further analyses include determining the operational aircraft fleet mix and estimating the activity peaks for the planning period.

3.6.1. Local Versus Itinerant Split

Aircraft operations are divided into the categories of local or itinerant. Local operations are those arrivals or departures performed by aircraft that remain in the airport traffic pattern or are within sight of the airport. Local operations are most often associated with training activity, flight instruction, and sightseeing. Itinerant operations are arrivals or departures other than local operations, performed by either based or transient aircraft.

Without an ATCT, the only sources of local versus itinerate traffic splits are those documented in the 2003 Airport Master Plan Update and the FAA TAF (where the split is derived from the 5010 data forms). When they are compared, these soucres both had averages where the itinerant traffic represented 59 percent of the historic activity. Itinerant operations were never higher than 59 percent after 2001, and prior to that, the highest levels included 67 and 78 percent for a few years in the 1990s.

The expectation is that that itinerant operations will increase over the planning period. That increase is supported by the surrounding area growth, airport improvements, and the expected increased utilization of business/corporate aviation. All of this is further bolstered by the fact that the Airport remains an attractive destination for many pilots, both business and pleasure due to the availability of services, low fuel prices, the Sebring International Raceway, and even the Runway Café. In addition, it should be noted that the growth of based aircraft at an airport does not significantly increase the level of local operations. For local operations to increase, there typically has to be an increase in flight training. While it is possible for additional flight programs to be established, none have been proposed in the recent past.

Similarly, there are no flight schools at surrounding airports that send their student pilots to SEF for training on a regular basis. This is likely due to the various restricted areas and military operation areas surrounding the Airport. Therefore, throughout the planning period it is anticipated that there will be a continued shift towards more itinerant operations; however, that is estimated to peak at 65 percent as shown in **Table 3-16**.

Table 3-16 - Forecast of Local versus Itinerant Operations

Year	Local Operations		Itinerant Operations		Total
Base					
2017	29,795	41%	42,875	59%	72,670
Forecast					
2023	32,867	39%	51,408	61%	84,275
2028	35,279	37%	60,070	63%	95,349
2038	42,719	35%	79,336	65%	122,055

Source: ESA, 2017.

3.6.2. Instrument Operations

An estimate of the instrument operations conducted is important to evaluate future facility requirements. A record of the Airport's instrument flight rule (IFR) arrival and departure activity between 2012 and 2016 was obtained from Flightwise. This data, which is based on the IFR flight plans filed, was consistent across the five years of data analyzed, averaging approximately 1,200 operations. That figure represents approximately 1.7 percent of the estimated 72,670 annual operations for 2017. Due to the expected increases in additional jet aircraft and itinerant operations, the current estimated level of traffic filing IFR flight plans is expected to nearly triple current levels by the end of the planning period. At that point, the instrument operations are expected to represent approximately 2.7 percent of the total operations. The estimates of instrument operations are included in **Table 3-20**.

3.6.3. Military Activity

Military operations are those conducted by aircraft from one of the U.S. military service branches. While there are no military aviation units based at SEF, the Airport does accommodate the occasional military aircraft as is evidenced by the fuel records. However, these operations are limited, especially given the proximity of the MacDill Air Force Base Auxiliary Field (AGR) and Avon Park Air Force Range located approximately 12 miles north of SEF. The FAA TAF has reported 400 annual operations each year since the previous master plan. That same number has also been projected out (flatlined) to 2045.

The ability to accurately forecast operations at a military air base is complicated by a number of facts. This is more difficult for the activity at a public airport like SEF, even if fuel sales have shown increases. Essentially, operational levels can fluctuate annually as they are dependent on unpredictable variables such as annual defense budgets, national security threats, global military needs, and even natural disasters. For this reason, there has been no projection made for the future level of military activity at SEF. Rather, the military activity conducted by a varied mix of aircraft are considered to be included as part of the overall annual operations expected.

3.6.4. Operational Fleet Mix

Operational fleet mix is an important factor in determining the needs for airfield improvements. While the Airport supports all types of aircraft, a majority of the current operations are conducted by single-engine; since this is the predominate aircraft based at the Airport, and they tend to conduct more takeoffs and landings. Even at airports with an ATCT, it is difficult to estimate the type of aircraft conducing operations since this information is not recorded by tower staff. The three years of daily logs for the various fuel sales do include each aircraft's tail number. That would clearly be an excellent source of operational fleet mix data; however, given there are literally dozens of transactions each day, it is not feasible to look up all of the aircraft registrations in order to determine the aircraft type. Instead, the current operational fleet mix percentages were estimated based on information provided by airport management, the tenant/user interviews, and from the Flightwise datasets (which certainly captures most of the larger aircraft).

Information from the 2017 FAA Aerospace Forecasts was then utilized to predict how the operational fleet mix would change over the next 20 years. For this analysis, the other category (including gliders and balloons) has been omitted since their numbers are not significant at SEF. For the most part, the projections reflected in **Table 3-17** follow the national trend.

Table 3-17 - Projected Operational Fleet Mix

Type	2017	2023	2028	2038
Single-Engine	55,956	64,049	68,652	79,336
Multi-Engine (piston & Turboprop)	11,627	13,484	15,255	19,529
Jet	727	1,685	3,814	12,205
Rotorcraft	4,360	5,057	7,628	10,985
Total	72,670	84,275	95,349	122,055

Source: ESA, 2017.

The FAA anticipates growth and increased utilization for every aircraft category; with the exception of the piston single-engine and piston multi-engine types. As described previously, the most significant growth and utilization is expected to occur in the jet and rotorcraft categories. There is also significant growth expected in the light sport aircraft; however, this is overshadowed by the overall decline in the more traditional aircraft of the single-engine category. Both the Airport's single-engine and multi-engine activity is expected to continue including a large number of the smaller aircraft in their respective fleets given the Airport's producers of these aircraft and the related activity and events they support. The multi-engine segment is also expected to experience increases in the larger turboprop aircraft such as the Beechcraft King Air series.

The current jet activity includes a number of the light to medium sized business jets which have a maximum allowable takeoff weight between 10,000 and 60,000 pounds. In addition to the based Gulfstream G150, this jet aircraft type includes the Beechcraft Hawker, Bombardier Learjet, Cessna Citation, Dassault Falcon, and Raytheon Hawker. The frequency with which this group of jet aircraft utilize SEF is expected to increase over the entire planning period. Additionally, jet activity conducted by the much larger and heavier business jet fleet over 60,000 pounds is also expected to experience increases in the short term. That class of aircraft includes the Bombardier Global Express, larger Dassault Falcons, and larger Gulfstream series of aircraft. It is also entirely possible that the largest corporate aircraft such as the Boeing Business Jet and Airbus Corporate Jet could operate at the Airport over the course of the planning period. Aircraft of this size will simply depend on the types of business that develop at SEF as well as within the surrounding community.

Rotorcraft operations are expected to continue by those based at the Airport as well as by the many popular Bell, Eurocopter, and Robinson models. In addition to the current private and emergency medical operators, future rotorcraft activity will likely include flight training and law enforcement type operations.

3.6.5. Peak Activity Estimates

Annual projections provide a well-rounded overview of the activity at an airport but may not reflect certain operational characteristics of the facility. In many cases, facility requirements are not driven by annual demand, but rather by the capacity shortfalls, or in some cases delays, experienced during peak times. Therefore, estimates are developed for the peak month, the average day in the peak month, and the peak hour of the peak day. The Airport's fuel flowage records were evaluated for peaking characteristics since they include the AvGas, Jet-A, MoGas, and military fuel quantities sold by month. These records indicate that the peak months have varied significantly not only among the different types of fuel sold, but also within the same group. When a prorated average is made using the data from the past six years, operations during a peak month can easily account for 15 percent of the annual operations.

The values for average day peak month and peak hour were calculated using the methodology in FAA Advisory Circular 150/5360-13, Planning and Design Guidelines for Airport Terminal Facilities. Under this methodology, the average day peak month is derived by taking the number of operations calculated for the peak month and dividing that figure by the number of days in the peak month. In this case, 30.5 days were utilized since the peaks included various months of the year. Hourly peaks were estimated to be around ten percent. It is assumed that these peaking characteristics will continue throughout the planning period. **Table 3-18** provides a summary of the peak activity forecast.

Table 3-18 - Forecast of Peak Activity

Year	Total Annual Operations	Peak Month (15% of Total)	Average Day Peak Month	Peak Hour (ADPM)
Base				
2017	72,670	10,901	357	36
Forecast				
2023	84,275	12,641	414	41
2028	95,349	14,302	469	47
2038	122,055	18,308	600	60

Source: ESA, 2017.

3.7. FAA Terminal Area Forecast Comparison

If an airport is included in the FAA TAF, any new aviation activity forecasts need to be reviewed and approved by the agency before they can be applied to further analyses. During this review the FAA examines to determine if the based aircraft and annual operations forecasts differ from the TAF by less than ten percent in the five year and 15 percent in the ten-year planning periods. **Table 3-19** presents a comparison between the selected master plan forecasts and the FAA's 2017 TAF.

Table 3-19 - Comparison of Forecasts to FAA TAF

Year	Selected Forecasts	2017 FAA TAF	Difference
Based Aircraft			
Base Year (2017)	91	76	19.7%
5 Year (2023)	102	76	34.2%
10 Year (2028)	112	76	47.4%
Annual Aircraft Operations			
Base Year (2017)	72,670	103,087	-29.5%
5 Year (2023)	84,275	103,087	-18.2%
10 Year (2028)	95,349	103,087	-7.5%

Source: ESA, 2018.

Clearly the selected forecasts for based aircraft and annual aircraft operations differ from the FAA TAF by more than ten percent in the five-year and 15 percent in the ten-year planning periods. For based aircraft there is a difference of 15 aircraft in 2017. As documented in this chapter, the 91 based aircraft have been validated in the FAA's National Based Aircraft Inventory Program. The 15 aircraft deficit and the fact that the FAA TAF projection is flatlined provides the reason for the variance in this projection. For annual operations, it was stated that the airport records reporting over 100,000 annual operations since the previous master plan has been questioned. The methodology to re-estimate the current level of activity has been included in this chapter. The resulting difference of about 30,000 less annual operations, as well as the fact that the TAF projection of operations is also flatlined, provides the reason for the variance in this projection.

3.8. Summary of Activity Forecasts

Table 3-20 presents an overview of the selected forecasts. In summary, the data and methods used to forecast aviation demand for the Airport are consistent with those used by the FAA, FDOT, and other general aviation airports around the nation. The forecasts presented in this study are considered to reasonably reflect the activity anticipated at SEF through 2038 given the information analyzed and available during this study.

Table 3-20 - Summary of Aviation Activity Forecasts

	2017	2023	2028	2038
Based Aircraft (Table 3-12)				
Single Engine	66	72	75	81
Multi-Engine (piston & turboprop)	14	16	17	19
Jet	5	7	11	23
Rotorcraft	6	7	9	12
Total	91	102	112	135
Operations (Table 3-16)				
Local	29,795	32,867	35,279	42,719
Itinerant	42,875	51,408	60,070	79,336
Total	72,670	84,275	95,349	122,055
Instrument Operations	1,200	1,601	2,002	3,295
Operational Fleet Mix (Table 3-17)				
Single-Engine	55,956	64,049	68,652	79,336
Multi-Engine (piston & turboprop)	11,627	13,484	15,255	19,529
Jet	727	1,685	3,814	12,205
Rotorcraft	4,360	5,057	7,628	10,985
Peak Activity (Table 3-18)				
Peak Month Operations	10,901	12,641	14,302	18,308
Average Day Operations	357	414	469	600
Peak Hour Operations	36	41	47	60

Source: ESA, 2017.

Design Criteria and Facility Requirements

4. Design Criteria and Facility Requirements

4.1. Introduction

This chapter presents design criteria that will be used for airport-specific facility planning, as well as the basis of the demand/capacity and facility requirements analysis for the Airport. All design standards presented in this section have been established by the Federal Aviation Administration (FAA) for developing airport facilities to meet existing and forecast levels of activity.

This chapter compares the projected aviation demand to the existing capacity of the facilities at Sebring Regional Airport (SEF). This comparison is then used to determine future facility requirements over the 20-year planning period. The facility improvements are directly related to the forecasted aviation activity and will allow the Airport and surrounding community to be adequately prepared to accommodate the potential demand over the 20-year planning period. This chapter examines how anticipated activity levels translate into the Airport's ability to serve forecasted traffic, focusing on the following distinct elements:

- Demand and Capacity Calculations
- Airside Facility Requirements
- Landside Facility Requirements
- Support Facility Requirements.

Any shortcomings in the ability to serve the forecast demand are identified, and recommendations are made regarding physical improvements that may be needed to mitigate recognized deficiencies.

4.2. Demand and Capacity

4.2.1. Airspace Capacity

Airspace capacity at an airport is of concern when the flight paths of traffic at nearby airports or local navigational aids (NAVAIDs) interacts to adversely impact operations at the airport of study. Another concern is the need to alter flight paths to avoid obstructions during aircraft approaches.

While numerous public and private general aviation (GA) airports were identified within 30 nautical miles of SEF, no private or public airports were located within a 5-nautical mile radius. The largest contributor to airspace capacity near SEF is the large military operation area presence. The Airport is located within the Lake Placid East Military Operations Area (MOA) and has Lake Placid West MOA to the west along with Lake Placid North MOA to the north. The most restrictive portion of SEF's airspace is the Restricted Area (R-2901) to the immediate west. Due to the restrictive nature of operations within these areas, delay can occur at SEF because of the limitation on entry and exit routes.

4.2.2. Airside Capacity

Airside Capacity calculations represent the capacity of the airside infrastructure, such as runways, taxiways, and Instrument Approach Procedures (IAPs). These values are compared to existing and future demand to determine the need for future capacity enhancing infrastructure such as additional runways or taxiway exits.

Airside capacity is a measure of the number of aircraft that can operate at an airport in a given timeframe. Capacity is most often expressed in hourly or annual measures. Hourly capacities are calculated for visual flight rules (VFR) and instrument flight rules (IFR) to identify any peak-period issues. Hourly airport capacity calculations included in the following sections do not include variables attributable to en-route air traffic control (ATC) procedures such as procedural spacing. Poor visibility conditions, where cloud ceilings drop below 1,000 feet above ground level (AGL) and visibility drops below three statute miles (sm), will result in IFR conditions. During IFR conditions, airport capacity can be reduced as airport infrastructure and NAVAID may not be able to accommodate as much traffic as during VFR conditions. Annual Service Volume (ASV) is calculated to measure an airport's ability to meet existing and future demand levels.

The major components to be considered when determining an airport's capacity include runway orientation and configuration, runway length, and runway exit locations. Additionally, the capacity of any given airfield system is affected by operational characteristics such as fleet mix, climatology, and IAP's. Each of these components has been examined as part of the airside capacity analysis.

The FAA defines total airport capacity as a measure of the maximum number of aircraft operations which can be accommodated on the airport or airport component in an hour. The parameters, assumptions, and calculations required for this analysis are included in the following sections.

4.2.2.1. Airfield Capacity Parameters and Assumptions

The generally accepted methodology for calculating airfield capacity is found in FAA Advisory Circular (AC) 150/5060-5, Airport Capacity and Delay. The calculations are based on the runway utilizations that produce the highest sustainable capacity consistent with existing air traffic rules, practices, and guidelines. The criteria and values used in the AC are typical of U.S. airports with similar runway configurations and are designed to enable calculation of airport capacity as accurately as possible. The parameters and assumptions identified in this section were used to calculate the Airport's airfield capacity.

4.2.2.2. Runway Orientation, Utilization, and Wind-Coverage

SEF's two bi-directional runways, Runway 1-19 and Runway 14-32, were evaluated to determine the overall capacity of the airfield. It is important to note that an operation is defined as either a takeoff or landing. The direction of each operation is highly influenced by wind, available instrument approaches, noise abatement procedures, airspace restrictions, and/or other operating parameters.

Providing adequate wind coverage is an important factor in enhancing an airport's capacity. Runways should be constructed to maximize the opportunity for aircraft to take off and land heading into the wind. The FAA requires that the airports runway achieve 95 percent wind coverage for the aircraft which are forecast to operate at the airport on a regular basis. When 95 percent wind coverage is not achieved, a crosswind runway may be required.

4.2.2.3. Aircraft Mix Index

The FAA has developed a classification system for grouping aircraft, based on size, weight, and performance. **Table 4-1** illustrates the classification categories as they are presented in Table 1-1 of FAA Advisory Circular (AC) 150/5060-5, *Airport Capacity and Delay*.

Table 4-1 - FAA Aircraft Certifications

<table>
<tr><th>Aircraft Class</th><th>Max. Cert. Takeoff Weight (lb)</th><th>Number of Engines</th><th>Wake Turbulence Classification</th></tr>
<tr><td>A</td><td rowspan="2">12,500 or less</td><td>Single</td><td rowspan="2">Small (S)</td></tr>
<tr><td>B</td><td>Multi</td></tr>
<tr><td>C</td><td>12,500 – 300,000</td><td>Multi</td><td>Large (L)</td></tr>
<tr><td>D</td><td>Over 300,000</td><td>Multi</td><td>Heavy (H)</td></tr>
</table>

Source: FAA AC 150/5060-5, Airport Capacity and Delay.

The classification system presented in **Table 4-1** is used to develop an aircraft mix which is the relative percentage of operations conducted by each of the four classes of aircraft (A, B, C, and D). The aircraft mix is used to calculate a mix index which is then used for airfield capacity studies. The FAA defines the mix index as a mathematical expression, representing the percent of Class C aircraft, plus three times the percent of Class D aircraft (C+3D). The FAA has established mix index ranges for use in capacity calculations as listed below:

- 0 to 20
- 21 to 50
- 51 to 80
- 51 to 120
- 121 to 180

A review of the 2017 Traffic Flow Management System Counts (TFMSC), provided by the FAA, indicates the airport experiences most of its traffic from aircraft falling into either A or B weight classifications outlined in **Table 4-1**. Being the FAA establishes the mix index ranges for airport capacity calculations, it is not necessary to compute the actual mix index value. For purposes of this analysis it is assumed that the mix index range for SEF will be between 0 and 20 throughout the planning period. This assumes that the aircraft having maximum certified takeoff weight between 41,000 pounds. and 300,000 pounds will not make up more than 30 percent of the total airport annual operations, and that there will be no operations by aircraft having maximum certified takeoff weight more than 300,000 pounds.

4.2.2.4. Arrivals Percentage

The percentage of arrivals is the ratio of arrivals to total operations. It is typically safe to assume that the total annual arrivals will equal total departures and that average daily arrivals will equal average daily departures. Therefore, a factor of 50 percent arrivals will be used in the capacity calculations for the Airport. This percentage is based on operational understandings where aircraft that arrive at the airport will eventually depart said airport, giving the ratio 1:1 to arrivals and departures.

4.2.2.5. Touch and Go Percentage

The touch-and-go percentage is the ratio of landings with an immediate takeoff to total operations. This type of operation is typically associated with flight training. The number of touch-and-go operations normally decreases as market share of jet operations increase, the demand for service and number of total instrument operations, and/or weather conditions deteriorate. It is assumed that there are no touch-and-go operations conducted during IFR conditions. Typically, touch-and-go operations are assumed to be between zero and 50 percent of all operations at the Airport.

Due to the nature of SEF’s location and aircraft composition, the existing airfield environment is apt for flight training to be conducted daily. Flight training consists of a variety of operations and procedures, yet the most common among these operations is the touch-and-go procedure. A touch-and-go operation is counted as two operations, since there is a landing followed by an immediate takeoff. It will be assumed that touch-and-go operations account for approximately 40 percent to 50 percent of the total annual operations at the Airport. The high range percentage was applied due to the high volume of daily flight training activities occurring at SEF.

4.2.2.6. Taxiway Factors

Taxiway entrance and exit locations are an important factor in determining the capacity of an airport’s runway system. Runway capacities are highest when there are full-length parallel taxiways, ample runway entrance and exit taxiways, and no active runway crossings. FAA AC 150/5060-5, Airport Capacity and Delay, identifies the criteria for determining taxiway exit factors at an airport. The criteria for exit factors are generally based on the mix index and the distance the taxiway exits are from the runway threshold and other taxiway connections. Taxiway exits were evaluated for operations in both directions on both runways. **Table 4-2** depicts the findings of the taxiway exit evaluation. All runways have accessible taxiway exits between 2,000 feet and 4,000 feet of the landing threshold. For the taxiway exits to be factored towards increasing the capacity at the airfield, the exits need to be separated by at least 750 feet in addition to being in a range from 2,000 feet to 4,000 feet from the landing thresholds.

Taxiway exits were evaluated for all operations in all directions on both Runway 1-19 and Runway 14-32. Runway 1-19 has a full parallel taxiway, while Runway 14-32 does not. The overall taxiway configuration on the airfield may cause constraints. Traffic delays could be caused by Taxiway A crossing Runway 14-32 due to the extra time needed to safely proceed across the active runway. In addition, the taxiway connectors off Taxiway A is seen to be the two primary access points to the apron on the airfield, along with one taxiway access point on the northern portion of the apron. Runway 32 end does not have any taxiway accessibility.

Table 4-2 - SEF Taxiway Exit Ranges

Runway	Number of Exits within Optimal Range (2,000 ft. to 4,000 ft.)
1	1
19	1
14	1
32	1

Source: Atkins Analysis, 2018

4.2.2.7. Instrument Approach Minimums

Airports are qualified and granted instrument approach procedures based upon the ability of said airport to safely accommodate aircraft operations during periods of inclement weather. Weather, in this regard, is characterized by two measures: local visibility in statute miles and the height of a substantial cloud ceiling above airport elevation. These two measurements are termed “approach minima”. Runway 1-19, and Runway 14-32 is supported through RNAV (GPS) procedures. **Table 4-3** depicts the approach minima on each runway

Table 4-3 - Instrument Approach Minimums

Runway	Approach Minimums	Ceiling Height Minimums
Runway 1	1 ¼ Mile Visibility	400’
Runway 19	1 ¼ Mile Visibility	400’
Runway 14	1 Mile Visibility	400’
Runway 32	1 Mile Visibility	400’

Source: FAA Instrument Approach Charts – SEF

4.2.2.8. Weather Influences

Operational limitations during inclement weather were accounted for the airport capacity computations. Weather data obtained from the National Climatic Data Center (NCDC) is broken up into VFR and IFR observations. The data obtained from the National Climatic Data Center (NCDC) identified that IFR conditions (ceilings less than 1,000 feet above ground level [AGL] and/or visibility less than 3 miles) occur approximately 7.19 percent of the time.

Wind data was obtained and analyzed to accurately depict the most appropriate operational traffic flow during various wind conditions. This wind data was utilized to understand runway utilization scenarios and to better understand the most favorable operational scenarios. **Table 4-4** depicts the airfield operating condition assumptions at SEF based on NCDC VFR weather data. **Table 4-5** depicts the airfield operating condition assumptions at SEF based on NCDC IFR weather data.

The wind ranges were calculated based on the most effective basis to compare the collected NCDC data to the existing airfield layout.

Table 4-4 - VFR Airfield Operating Configurations

	0° - 90° Wind	90° - 180° Wind	180° - 270° Wind	270° - 360° Wind
Arrivals	1, 14	19, 14	19, 32	1, 32
Occurrence %	29.32%	22.87%	13.94%	11.59%

Source: NCDC Wind & Weather Observations, 2017, & Atkins Analysis 2018

Table 4-5 - IFR Airfield Operating Configurations

	0° - 90° Wind	90° - 180° Wind	180° - 270° Wind	270° - 360° Wind
Arrivals	1, 14	19, 14	19, 32	1, 32
Occurrence %	34.29%	8.99%	10.74%	19.25%

Source: NCDC Wind & Weather Observations, 2017, & Atkins Analysis 2018

4.2.3. Airfield Capacity Calculations

The airfield capacity calculations in this section were performed using the parameters and assumptions discussed in the previous sections. The calculations also utilize data from the preferred aviation demand forecast, as presented in Chapter 3, *Aviation Demand Forecast,* for portions of the capacity projections. The following sections outline the hourly capacities in VFR and IFR conditions, as well as the ASV for SEF. For simple, long range planning purposes, the FAA's *Airport Capacity and Delay* AC was utilized. Airport operations are estimated to occur on one runway at a time; simultaneous runway operations are not expected to occur on a regular basis.

4.2.3.1. Hourly Capacity Calculations

The hourly capacity of the runway facilities is determined by analyzing the appropriate VFR and IFR figures in AC 150/5060-5, *Airport Capacity and Delay.* The equation used to obtain the hourly capacity was taken from the FAA AC 150/5060-5 and is presented below.

Hourly Capacity = (C) x (T) x (E)*

Hourly Capacity Base (C*)

Hourly Capacity Base (C*) is calculated for both VFR conditions and IFR conditions utilizing FAA provided diagrams in AC 150/5060-5. By first computing Mix Index, and Arrivals Percentage, the Hourly capacity is determined. At SEF the following hourly capacity bases were utilized:

- VFR – Operating Runway 1 & 14, (C*) = **111**
- IFR – Operating Runway 1 & 14 , (C*) = **63**
- VFR – Operating Runway 19 & 14, (C*) = **109**
- IFR – Operating Runway 19 & 14 , (C*) = **63**
- VFR – Operating Runway 19 & 32, (C*) = **109**
- IFR – Operating Runway 19 & 32 , (C*) = **63**
- VFR – Operating Runway 1 & 32, (C*) = **111**
- IFR – Operating Runway 1 & 32, (C*) = **63**

Touch-and-Go Factor (T)

The Touch-and-Go Factor (T) is an expression of touch-and-go activity and its effect on capacity. The value is derived using tables within AC 150/5060-5. The touch-and-go factor (T) is constant during IFR conditions due to weather constraints. This is primarily due to the training aspect of touch-and-go operations. The factors used in calculating (T) include the percent of operations which are touch-and-go and the mix index.

- In VFR scenarios operating Runway 1 & 14, (T) = **1.33**
- In VFR scenarios operating Runway 19 & 14, (T) = **1.33**
- In VFR scenarios operating Runway 19 & 32, (T) = **1.33**
- In VFR scenarios operating Runway 1 & 32, (T) = **1.33**
- For IFR scenarios (T) is always assumed to be **1.00**

Exit Factor (E)

Exit Factor (E) is an expression of the availability of taxiway exits within an appropriate range for the mix of aircraft operating at the airport, derived by selecting the appropriate tables provided within AC 150/5060-5. The primary factors in calculating (E) are the mix index, the number of exits which are within appropriate exit range for arriving aircraft, and the percent arrivals (50 percent). The appropriate exit range for arriving aircraft, based on the calculated mix index, is within 2,000’ to 4,000’ from the arriving runway threshold. For the exit to count, there must be a minimum separation of 750’ between runway exits. To calculate capacity at SEF for various scenarios the following exit factors (E) were utilized:

- Operating in VFR conditions, (E) = **.88**
- Operating in IFR conditions, (E) = **1.00**

4.2.3.2. Hourly VFR Capacity

Hourly VFR capacities at SEF were calculated to be 111 when the wind is from 0° to 90°, and 270° to 360°. Hourly VFR capacities at SEF were calculated to be 109 when the wind is from 90° to 270°.

4.2.3.3. Hourly IFR Capacity

Hourly IFR capacities used similar assumptions to those used in the IFR hourly capacity calculations. However, maintaining greater separation between aircraft is generally required during IFR operations, which results in hourly capacity base variable of the equation to be lower. When under IFR conditions at SEF, the hourly IFR capacity is 63.

4.2.3.4. Annual Service Volume

The number of annual operations can reasonably be expected to occur at the airport based on a given level of delay, per FAA AC150-5060, *Airport Capacity and Delay.* ASV is calculated based on the existing runway configuration, aircraft mix, and the parameters and assumptions identified herein, and incorporates the hourly VFR and IFR capacities calculated previously. Utilizing this information and the guidance provided in FAA AC 150/5060-5, *Airport Capacity and Delay*, the Airport’s existing airfield capacity in its present configuration, with one north-south runway and one northwest-southeast runway, existing taxiway infrastructure, and RNAV/GPS capabilities, the following ASV assumption has been produced. The equation used to obtain the ASV were taken from the FAA AC 150/5060-5 and is presented below.

- Weighted Hourly Capacity (Cw) x Annual/Daily Demand (D) x Daily/Hourly Demand (H) = ASV

The weighted hourly capacity (Cw) is an expression of hourly capacity which considers the percentage of time each runway use configuration is used for both VFR and IFR conditions. The Cw at SEF was calculated to be 124.08. The Annual/Daily Demand (D) represents the ratio of annual demand to average daily demand during the peak month. A typical Annual/Daily Demand value for SEF was calculated to be 203.56. The Daily/Hourly Demand (H) represents the ratio of average daily demand to average peak hour demand during the peak month. The Daily/Hourly Demand for SEF was calculated to be 4.00.

- Cw x D x H = ASV → 124.08 x 203.56 x 4.00 = **101,073**

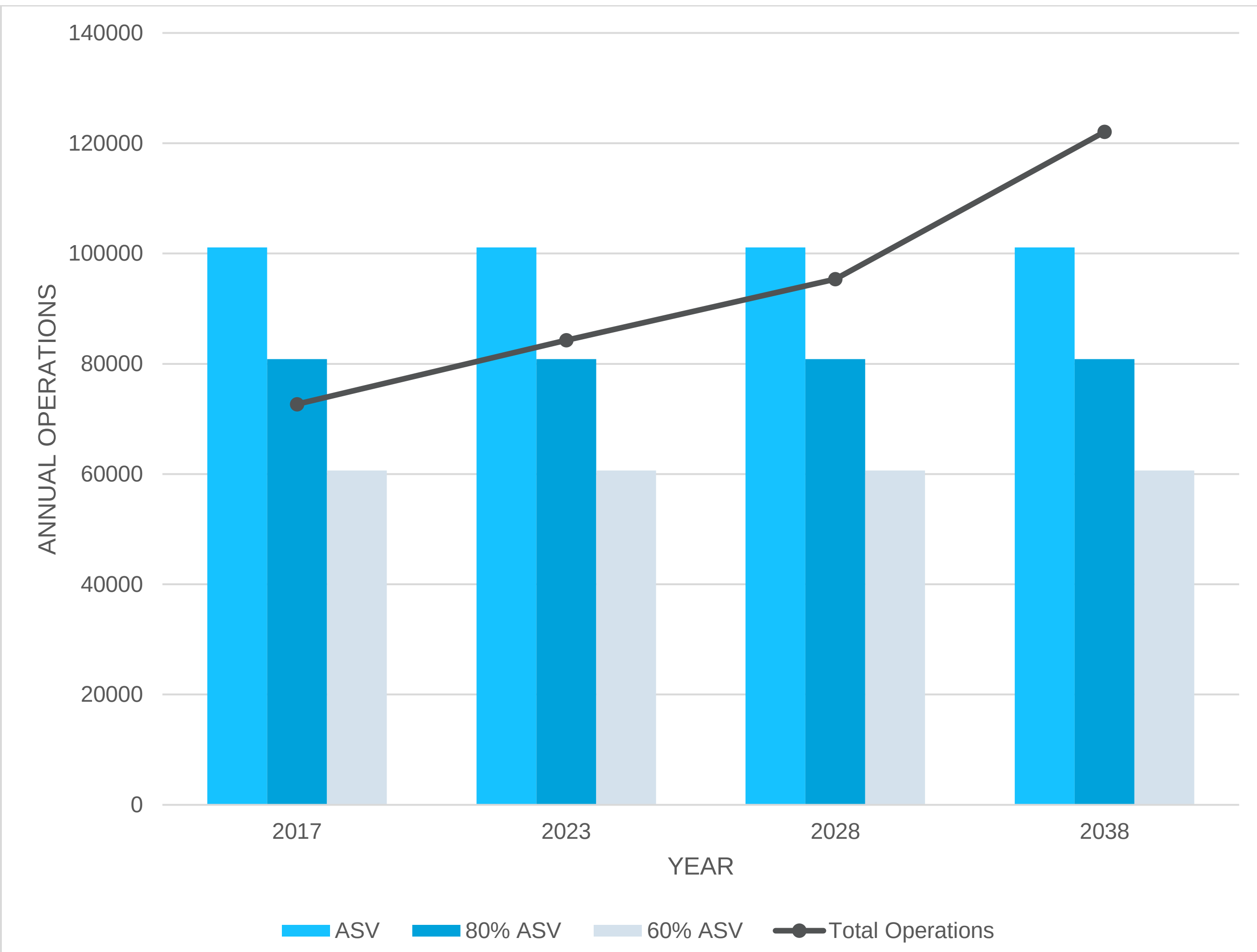
Additionally, according to the FAA, the following guidelines should be used to determine necessary steps as demand reaches designated levels.

- **60 percent of ASV –** The threshold at which planning for capacity improvements should begin.
- **80 percent of ASV** – The threshold at which planning for improvements should be complete and construction should begin.
- **100 percent of ASV** – The airport has reached the total number of annual operations it can accommodate, and capacity-enhancing improvements should be made to avoid extensive delays.

The current aviation demand in number of aircraft operations for the base year 2017 at SEF, as presented in the Aviation Demand Forecast chapter, is 72,670. This equals 71.89 percent of the present ASV. **Table 4-6** Illustrates the preferred aviation demand forecast for SEF and its relation to SEF's current ASV, **Figure 4-1** Graphically depicts this relationship.

Based on the calculated relationship between the Airport's existing ASV and forecast of aviation demand, the Airport should commence planning for capacity improvements such as enhancing runway and taxiway infrastructure today.

Figure 4-1 - Annual Service Volume vs. Annual Demand



Source: FAA AC 150/5060-5, Airport Capacity and Delay, ESA analysis 2017, and Atkins analysis, 2018

Table 4-6 - Annual Service Volume vs. Annual Demand

Year	Annual Operations	Annual Service Volume	Percent of Annual Service Volume
2017	72,670	101,073	71.89%
2023	84,275	101,073	83.38%
2028	95,349	101,073	94.34%
2038	122,055	101,073	120.76%

Source: FAA AC 150/5060-5, Airport Capacity and Delay, ESA analysis 2017, and Atkins analysis, 2018

4.3. Airside Facility Requirements

Airport design standards, as established by Change 1 of the FAA's AC 150/5300-13A, were employed in this Development Plan for developing airport facilities capable of meeting existing and forecast levels of aviation activity.

4.3.1. Runway Design Code (RDC)

Runway Design Code (RDC) is a code signifying the design standards to which the runway is to be built. Aircraft Approach Category (AAC), Airplane Design Group (ADG), and approach visibility minimums are combined to form the RDC. The first component of the RDC, the AAC, is depicted by a letter. The AAC portion of the RDC relates to the aircraft approach speed, as depicted in **Table 4-7**. The second component, the ADG, is depicted by a roman numeral as depicted in **Table 4-8**. The ADG portion of the RDC relates to the aircraft wingspan and tail height. The third and final component of the RDC relates to the visibility minima for a given runways approach and is expressed in feet, as depicted in **Table 4-9**.

Table 4-7 - Aircraft Approach Category

Aircraft Approach Category	Approach Speed
A	Approach speed less than 91 knots
B	Approach speed 91 knots or more but less than 121 knots
C	Approach speed 121 knots or more but less than 141 knots
D	Approach speed 141 knots or more but less than 166 knots
E	Approach speed 166 knots or more

Source: FAA AC 150/5300-13A, Airport Design

Table 4-8 - Airplane Design Group

Group #	Tail Height (ft [m])	Wingspan (ft [m])
I	< 20' (< 6 m)	< 49' (< 15 m)
II	20' - < 30' (6 m - < 9 m)	49' - < 79' (15 m - < 24 m)
III	30' - < 45' (9 m - < 13.5 m)	79' - < 118' (24 m - < 36 m)
IV	45' - < 60' (13.5 m - < 18.5 m)	118' - < 171' (36 m - < 52 m)
V	60' - < 66' (18.5 m - < 20 m)	171' - < 214' (52 m - < 65 m)
VI	66' - < 80' (20 m - < 24.5 m)	214' - < 262' (65 m - < 80 m)

Source: FAA AC 150/5300-13A, Airport Design

Table 4-9 - Visibility Minimums

RVR (ft.)	Flight Visibility Category (statute mile)
VIS	Visual Approach
4000	Lower than 1 mile but not lower than ¾ mile (APV ≥ 3/4 but < 1 mile)
2400	Lower than 3/4 mile but not lower than 1/2 mile (CAT-I PA)
1600	Lower than 1/2 mile but not lower than 1/4 mile (CAT-II PA)
1200	Lower than 1/4 mile (CAT-III PA)

Source: FAA AC 150/5300-13A, Airport Design

4.3.2. Airport Reference Code (ARC)

Per FAA AC 150/5300-13A, the ARC is a system used to relate airport design criteria to the planner or designer and is based on the Airport's highest RDC. Airport improvements can be planned and developed per the established ARC where essential. Improvements can as well be based on a specific runway's established RDC.

4.4. Critical Aircraft

An initial step in identifying an airport's potential runway and taxiway facility requirements is the establishment of fundamental development guidelines for the largest or most critical aircraft anticipated to make use of the airfield facility or a portion thereof. Thus, airport improvements are planned and developed according to the established Airport Reference Code (ARC) for the airport and then for each runway. An airport's ARC is determined by the critical aircraft (aircraft with the widest wingspan, tallest tail, and fastest approach speeds) that consistently makes substantial use of the Airport. Section 1.2 of FAA AC 150/5000-17, Critical Aircraft and Regular Use Determination, defines critical aircraft as "…the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the airport. Regular use is 500 annual operations, including both itinerant and local operations but excluding touch-and-go operations. An operation is either a takeoff or landing." An airfield's critical aircraft affects key aspects of airport design, such as the sizing of runways, taxiways/lanes, and the location of aircraft parking areas, hangar facilities, and safety and clearance surfaces.

TFMSC data queried for the period November 2017 to November 2018 captured 1,720 operations at SEF. Table 4-10 outlines the fleet mix captured in this dataset. The TFMSC data represents a predominant portion of IFR operations that occurred at the airport during that period, however, the TFMSC data does not capture all operations. Most VFR and some non-enroute IFR traffic is excluded1. In addition, operational data is only captured for operations that take place in the US and in nearby countries that participate in the TFMS system.

[1] Cited from TFMSC overview found at https://aspmhelp.faa.gov/index.php/TFMSC

Table 4-10 - TFMSC Data Summary

ADG	AAC	Representative Aircraft	Recorded Ops (TFMSC)
A	I	Cessna Skyhawk 172	1,024
A	II	Pilatus PC-12	26
B	I	Beech 58	144
B	II	Beech 200 Super King	212
C	I	Hawker 800	98
C	II	Gulfstream G150	170
C	III	Boeing 737-400	8
D	I	LearJet 35/36	28
D	II	Gulfstream IV/G400	6
D	III	Gulfstream V/G500	4
Total			1,720

Operations at SEF are somewhat unique to other airports within the State. As noted in the inventory chapter, SEF experiences multiple annual events throughout the year. This is due, in part, to the co-location of the Sebring Motor Speedway. During the week of the 12-Hours of Sebring race, over 10 percent of the annual operations take place. In addition to these unique events, SEF has other operational impacts due to an active MRO facility which services Boeing 737 and 727 aircraft.

The unique circumstances that take place at SEF on an annual basis require further analysis to better understand the operational environment at the airport. To better estimate the critical aircraft, a conservative extrapolation was completed. While it is understood that larger aircraft, ADG C-I to D-III[2], are unlikely to be omitted from the TFMS data as they do not routinely fly without a filed flight plan, it is probable that a percentage of operations are not captured by the TFMSC data and a limited extrapolation is necessary. In this case, the TFMSC data was compared to the approved forecast and historical operational data available through the 2017 apron justification report, MRO operations, fuel sales trends, and the impacts from the 12-Hours of Sebring race and other annual events. In 2017, an apron justification report, under the direction of the FAA, was produced to identify the need for maintaining the vast expanse of apron pavement at the airport. The justification report captured the existing operations at the airport and the existing need for apron space. The 2017 justification report indicated that seven percent of all itinerant operations were completed by jet aircraft. When applying this percentage to the existing itinerant operations identified in the forecast chapter, this results in approximately 3,001 jet operations.

Over the past six years, fuel sales have increased at an annual average rate of 14.3 percent. This indicates that the number of jet operations, and size of airframes are increasing at the airport. With a total annual operations estimated at 72,670 in 2017, when compared to the total TFMSC operations, and a marginal 5.5 percent of the extrapolated operations are considered, the total jet operations, ADG C-I to D-III, equal 1,044, with approximately 565 of those operations being by C-II aircraft as indicated in **Table 4-11**.

[2] ADG C-I to D-III aircraft will typically be jet-engine, however, a percentage of these aircraft may be piston-engine.

Table 4-11 - Critical Aircraft Extrapolation Summary

ADG	AAC	Representative Aircraft	Recorded Ops (TFMSC)	% of Total Recorded Ops	% Applied to FY 2017 Ops	5.5% of extrapolated	TFMSC Plus Extrapolated	% of Total Ops
C	I	Hawker 800	98	6%	4,141	227	325	0.45%
C	II	Gulfstream G150	170	10%	7,183	394	564	0.78%
C	III	Boeing 737-400	8	0%	338	19	27	0.04%
D	I	LearJet 35/36	28	2%	1,183	65	93	0.13%
D	II	Gulfstream IV/ G400	6	0.3%	254	14	20	0.03%
D	III	Gulfstream V/ G500	4	0.2%	169	9	13	0.02%
Total			**1,720**	**18%**	**13,267**	**727**	**1,041**	**1.44%**

Source: TFMSC Data (November 2017 – November 2018) at SEF

Based on the approved forecast, operations are expected to increase over the 20-year planning period at an average annual growth rate of 2.5 percent. At the same time, jet traffic is anticipated to grow at a much higher rate than other aircraft types in the airports fleet mix. This increase is anticipated to bring the number of jet aircraft from just under 1,000 to over 10,000, as outlined in the approved forecast. Over the course of the planning period, various improvements to the airport can be expected to accommodate increased traffic, changing fleet mix, new industrial/business opportunities, and continued community growth. In addition, certain aircraft will continue to be phased out over the planning period, including aircraft such as the LearJet 35/36 and Hawker 800, due to higher noise standards and continuing improvements to aircraft efficiency and technology. Like the mandated phaseout of Stage 2 noise level airplanes, Stage 3 airplanes will likely be phased out during the 20-year planning period. Per FAA AC 36-1H, Noise Levels for U.S. Certificated and Foreign Aircraft, the LearJet 35/36 and Hawker 800 are both Stage 3 airplanes and will likely be phased out.

For these reasons, it can be anticipated that a shift from C-I and D-I aircraft will occur. To estimate this shift, an average annual growth rate (AAGR) of -2.5 percent was applied to the C-I and D-I aircraft, while an AAGR of 1.5 percent was applied to C-II and D-II, and an AAGR of 1.0 percent was applied to C-III and D-IIIError! Reference source not found.. Utilizing the adjusted fleet mix percentage of C-I to D-III aircraft (Jet aircraft) and applying it to the forecast jet operations growth from the approved forecast, results in a combined total of 1,094 AAC D and 550 ADG III aircraft, for a future critical design aircraft of a D-III, such as a Gulfstream V, in the planning year 2038 as outlined in **Table 4-12**. This analysis is based on the use of the similar characteristics method as defined in AC 150/5000-17, *Critical Aircraft and Regular Use Determination.*

Table 4-12 - Similar Characteristics Operations Analysis in 2038

ADG	C	D	Total
I	2,132	610	2,742
II	8,607	305	8,913
III	371	179	**550**
Total	11,111	**1,094**	12,205

Source: Atkins Analysis, 2019

In accordance with the FAA AC, an airport can exhibit multiple critical aircraft over the various areas of the airport. For example, at SEF, Runway 1-19 is the airports primary runway, and achieves slightly below 95 percent wind coverage for 10.5 knot crosswinds and slightly over 95 percent wind coverage for 13 knot crosswinds. A crosswind runway is required at SEF as the airports combined wind coverage is below 95 percent for 10.5 knot crosswinds. The crosswind runway will provide an alternate landing surface for the smaller aircraft, allowing for a lower crosswind component during landing and takeoff, however, the crosswind runway is not essential for larger aircraft, as they are able to handle higher crosswind components than their smaller counterparts. For this reason, the design standards for the crosswind runway will differ based on the most critical aircraft with regular use of the crosswind runway. Without an ATCT at the airport, it is difficult to determine the exact critical aircraft for a specific runway, however, with Runway 1-19 being the airports primary runway it can be assumed that the crosswind runway will be used primarily by smaller aircraft.

The previous airport master plan determined the critical aircraft for Runway 14-32 was a B-II (existing and future). Based on the current fleet mix and operations at the airport, and the ability for Runway 1-19 to handle all aircraft with crosswind components above 13 knots, it has been determined that the Runway 14-32 critical aircraft remains a B-II. However, due to some operational limitations, restriction of operations to B-II small aircraft (utility) only is necessary in order to reduce the size and impact of the imaginary surfaces.

Table 4-13 presents the existing and future critical aircraft for each runway.

Table 4-13 – Existing and Future Critical Aircraft

Runway	Existing		Future	
	RDC	Representative Aircraft	RDC	Representative Aircraft
1-19	C-II	Gulfstream 150	D-III	Gulfstream V/550
14-32	B-II	Cessna Citation 550	B-II-Small	Cessna Citation 550

4.5. Runway Requirements

This section of the report will look at SEF's two runways and whether they meet both existing and future requirements. Specifically, the runways' general characteristics will be analyzed with respect to FAA design and safety requirements and conformance with the recommendations of this report. Runway designation and length requirements will also be reviewed.

4.5.1. Runway Width

Runway width standards are established in FAA AC 150/5300-13A and are based on RDC criteria. **Table 4-14** outlines the FAA runway width standards as compared to the existing runway widths. Currently, Runway 1-19 and Runway 14-32 meets the existing FAA requirements. Runway 14-32 currently exceeds current width standards. This is due to the former military base pavement still being in place and preserving the existing runway width as is.

Table 4-14 - Runway Width

Runway	RDC (Existing and Future)	FAA Requirement Width (Ft.)	Existing Width (Ft.)
1-19	C-II / D-III	100' / 150'	100'
14-32	B-II / B-II-Small	75'	100'

4.5.2. Runway Length Analysis

In accordance with FAA Advisory Circular 150/5325-4B, *Runway Length Requirements for Airport Design*, an analysis was conducted to determine the runway length requirements for passenger air carrier, cargo, and GA aircraft operating at SEF. AC 150/5325-4B uses a five-step procedure to determine recommended runway lengths for a selected list of critical design airplanes. The five steps are summarized below.

1. Identify the list of critical design airplanes that will make regular use of the proposed runway for an established planning period of at least five years. For federally funded projects, the definition of the term "*substantial use*" quantifies the term "*regular use"*.
2. Identify the airplanes that will require the longest runway lengths at MTOW. This will be used to determine the method for establishing the recommended runway length. When the MTOW of listed airplanes is over 60,000 lbs., the recommended runway length is determined per individual airplanes and their respective airplane planning manuals.
3. Use Table 1-1 in the AC 150/5325-4B (Table 4-15 in this document) and the airplanes identified in step #2 to determine the method that will be used for establishing the recommended runway length. MTOW is used because of the significant role played by airplane operating weights in determining runway lengths.
4. Select the recommended runway length from among the various runway lengths generated by step #3 per the process identified in chapters 2, 3, or 4 of the AC, as applicable.
5. Apply any necessary adjustment to the obtained runway length, when instructed by the applicable chapter of the AC, to the runway length generated by step #4 to obtain a final recommended runway length. Adjustments to the length may be necessary for runways with non-zero effective gradients, excessive temperatures, wind conditions, airport elevation, etc.

Table 4-15 - Airplane Weight Categorization for Runway Length Requirements

<table>
<tr><th colspan="3">Airplane Weight Category</th><th rowspan="2">Design Approach</th><th rowspan="2">Location of Design Guidelines</th></tr>
<tr><th colspan="3">Maximum Certificated Takeoff Weight (MTOW)</th></tr>
<tr><td rowspan="4">12,500 pounds (5,670 kg) or less</td><td colspan="2">Approach Speeds less than 30 knots</td><td>Family grouping of small airplanes</td><td>Chapter 2; Paragraph 203</td></tr>
<tr><td colspan="2">Approach Speeds of at least 30 knots but less than 50 knots</td><td>Family grouping of small airplanes</td><td>Chapter 2; Paragraph 204</td></tr>
<tr><td rowspan="2">Approach Speeds of 50 knots or more</td><td>With Less than 10 Passengers</td><td>Family grouping of small airplanes</td><td>Chapter 2; Paragraph 205, Figure 2-1</td></tr>
<tr><td>With 10 or more passengers</td><td>Family grouping of small airplanes</td><td>Chapter 2; Paragraph 205, Figure 2-2</td></tr>
<tr><td colspan="3">Over 12,500 pounds (5, 670 kg) but less than 60,000 pounds (27,200 kg)</td><td>Family grouping of large airplanes</td><td>Chapter 3; Figures 3-1 or 3-2[1] and Tables 3-1 or 3-2</td></tr>
<tr><td colspan="3">60,000 pounds (27,200 kg) or more or Regional Jets[2]</td><td>Individual large airplane</td><td>Chapter 4; Airplane Manufacturer Websites (Appendix 1)</td></tr>
</table>

Note 1: When the design airplane's APM show a longer runway length than what is shown in Figure 3-2, use the airplane manufacturer's APM. However, users of an APM are to adhere to the design guidelines found in Chapter 4.

Note 2: All regional jets regardless of their MTOW are assigned to the 60,000 pounds (27,200 kg) or more weight category.

Source: FAA AC 150/5325-4B Runway Length Requirements for Airport Design

4.5.2.1. Runway Length: Takeoff Distance

Runway length requirements are based on a variety of factors, the most notable of which is the takeoff distance of the critical aircraft operating on the runway. The departure requirements are often the most critical for measuring runway length required since departing aircraft have a full fuel load thus increasing the amount of runway required. Average high temperatures, high precipitation levels and the elevation of the runway are other factors that affect runway length requirements. The low elevation of SEF makes the elevation factor less important. Considering SEF's location in Florida, the region can reach higher temperatures during the summer months that will be taken into consideration during this analysis and will play a larger role. FAA AC 150/5325-4B, *Runway Length Requirements of Airport Design*, provides guidance that suggests recommending runway lengths based on a family grouping of aircraft.

In December 2013, a runway extension justification report for Runway 1-19 was submitted to the FAA for review. The report, which can be found in **Appendix C**, outlined the increased need from existing and potential users for a longer primary runway at SEF. The reasons for the increased need range from operational issues to safety issues. At the current runway length, high performance corporate and regional jet aircraft may be (and historically have been) subject to payload limitations or have opted not to use the Airport at all due to the limited runway length available. The report analyzed and justified a total length of 7,000 feet for Runway 1-19 and was subsequently approved by the FAA on January 9th, 2014. Runway 1-19 would be extended to the north by 1,776-feet to increase the runway length from the existing 5,234-feet to the proposed 7,000-feet. In addition, an Environmental Assessment (EA) was completed in 2013 to analyze the runway extension in terms of potential environmental impacts. The submitted EA was never formally approved by the FAA and never awarded a Finding of No Significant Impact (FONSI). On January 27th, 2016, a coordination meeting was held between the SAA and the FAA. This meeting, which was a land acquisition briefing, covered the justification for the land acquisition needed for the runway extension, history of negotiations, and the current (2016) status of the process. It was noted that a purchase offer was drafted for the 64.84 acres needed. A similar meeting was held with the Florida Department of Transportation (FDOT) on January 20th, 2016. However, due to the duration of time that has passed since the most recent approval for the runway extension justification, and taking into consideration recent world affairs, the runway extension justification for Runway 1-19 must be updated and submitted for FAA approval.

The Runway 14-32 takeoff length requirements will be analyzed utilizing the selected representative critical aircraft. Per FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design,* for critical aircraft which are between 12,500 pounds to 60,000 pounds for maximum certified takeoff weight (MTOW), required takeoff length will be derived from the figures within Chapter 2 of the specified AC. Because the Cessna Citation 550's MTOW is approximately 15,000 pounds, the takeoff length was derived from Figure 2-1 of the AC. It was found that the required takeoff length for Runway 14-32 is approximately 3,800 feet. As the current length of Runway 14-32 is 4,990 feet, the representative critical aircraft can be safely accommodated on this runway in its current configuration.

The Airport has expressed interest in a turf runway to further appeal to the general aviation community. Per AC 150/5300-13A, a turf runway length is determined by first analyzing the appropriate distance required for the specific category of aircraft which will utilize the runway, then the length should be increased by a factor of 20 percent to take into consideration the diminished friction provided to aircraft compared to paved runways. It was determined that aircraft utilizing the turf runway will be aircraft with a MTOW less than 12,500 pounds and with approach speeds up to 50 knots. Therefore, Figure 2-1 in AC 150/5325-4B was utilized to first find the necessary runway length required for this grouping of aircraft. The 20 percent increase was then applied to the results from this analysis to find the required turf runway length of 3,720 feet.

4.5.2.2. Runway Length: Landing Distance

Per FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design*, the landing length required is derived from the specific aircraft's performance metrics provided by the respective manufacturer of the aircraft in question. Due to the location of SEF, wet conditions are likely throughout a given day, primarily during the spring and summer months. Wet conditions can increase the landing distance of aircrafts. Due to the layer of fluid between the tires and runway, aircraft braking action is adversely affected due to the reduction of friction force between the tires and runway surface. In such cases, a standard 15 percent increase in the listed runway length required is used to adjust for wet runway conditions. The critical distance to be utilized for runway length analysis is to remain takeoff distance, as the critical aircraft's landing distance is below the respective aircraft's takeoff distance even in adverse conditions.

4.5.3. Runway Protective Surfaces

Runway protective surfaces such as the Runway Safety Area (RSA), Runway Object Free Area (ROFA), and Runway Protection Zone (RPZ) aim to protect aircraft, people, and property in the case of an aircraft deviating from its intended course while conducting conventional runway operations. The following sections outline the existing and future criteria for the runway protective surfaces at SEF. A detailed analysis of protective surfaces utilizing updated survey data is planned as part of the upcoming Alternatives Development Chapter.

4.5.3.1. Runway Safety Area

A Runway Safety Area (RSA) is a graded surface centered on a runway that is required to be free of all objects except for those that are 'fixed by function' such as runway lights and certain NAVAIDS. The purpose of the RSA is to protect aircraft in the event of an under-shoot, overrun, or aircraft runoff from a runway during landing or take-off operations. The area must be able to support emergency vehicle operations and maintenance vehicles and is required to be graded to slope away from the runway at 1.5 to 5.0 percent. The width and length of an RSA depend upon an airport's RDC and approach visibility minimums. Meeting RSA requirements is one of the FAA's highest priorities in maintaining safety at the Nation's airports. **Table 4-16** lists the Airport's existing and future RSA requirements.

Table 4-16 - Runway Safety Area Dimensions

Runway	RDC	RSA Width (Ft.)	Length Beyond Runway End (Ft.)
Runway 1-19	C-II	500’	1,000’
Runway 14-32	B-II	150’	300’

Source: FAA 150/5300-13A, Airport Design, Atkins Analysis 2018

Portions of the Runway 1-19 RSA are noncompliant due to vegetation being present within the Runway 19 end RSA. Approximately 915’ beyond the Runway 19 threshold begins the vegetation and spans the 500’ width of the RSA. It is recommended that this RSA impact be mitigated in both the short and long-term planning periods to ensure the RSA remains compliant. This will be further analyzed in the alternatives chapter of this report. All remaining RSA areas are compliant with no impacts to the protective surface.

4.5.3.2. Runway Object Free Area

Like the RSA, the Runway Object Free Area (ROFA) must be free of objects except those required to support air navigation and ground maneuvering operations. The function of the ROFA, also centered on the runway, is to enhance the safety of aircraft operating on the runway. It is not permissible to park an airplane within the ROFA. The width and length of the ROFA depend upon an airport’s specific RDC and approach visibility minima. The ROFA does not have specific slope requirements, but the terrain within the ROFA must be relatively smooth and graded at or below the outer edge of the RSA. The standard compliance of the ROFA with all relevant FAA standards is discussed in the inventory chapter of this report. **Table 4-17** notes the ROFA dimensions for SEF.

Table 4-17 - Runway Object Free Area Dimensions

Runway	RDC	ROFA Width (Ft.)	Length Beyond Runway End (Ft.)
Runway 1-19	C-II	800’	1,000’
Runway 14-32	B-II	500’	300’

Source: FAA 150/5300-13A, Airport Design, Atkins Analysis 2018

Portions of the Runway 14-32 ROFA are impacted at the Runway 14 end. The ROFA on the Runway 14 approach end is impacted by an existing fence and roadway which accesses the Genpak facility off Ulmann Drive. Due to the routine access of both automobiles and trucks to the Genpak facility, there is consistently impacts to this protective area. It is recommended that this ROFA impact be mitigated in both the short and long-term planning periods to ensure the ROFA remains compliant. This will be further analyzed in the alternatives chapter of this report.

4.5.3.3. Runway Protection Zones

A Runway Protection Zone (RPZ) is an area centered symmetrically on an extended runway centerline and has a trapezoidal shape. The RPZ is aimed at enhancing the safety of people and property on the ground by limiting and/or restricting the construction of certain structures within its bounds. This area should be free of land uses that create glare, smoke, or other hazards to air navigation. Additionally, the FAA requires that no vertical structures are constructed within the extents of the RPZ.

The dimensions of an RPZ depend on each runway’s RDC and approach visibility minima. With no proposed reductions in instrument approach visibility minimums, the size and dimensions of the existing RPZs at SEF are not anticipated to change throughout the planning period. **Table 4-18** illustrates the RPZ requirements for RDCs (C-II) and (B-II).

Table 4-18 - Runway Protection Zones Dimensions

Approach RPZ	RDC	Length (Ft.)	Inner Width (Ft.)	Outer Width (Ft.)
Runway 1-19	C-II	1,700’	500’	1,010’

Runway 14-32	B-II	1,000’	500’	700’
Departure RPZ				
Runway 1-19	C-II	1,700’	500’	1,010’
Runway 14-32	B-II	1,000’	500’	700’

Source: FAA 150/5300-13A, Airport Design, Atkins Analysis 2018

Portions of the Runway 14 RPZ and Runway 1 RPZ are impacted due to non-compliant features residing within the protective surface’s boundary. On the Runway 14 end, the RPZ is impacted by the roadway into the Genpak facility, existing fence line, Genpak building, railroad tracks, and Ulmann Drive. On the Runway 1 end, the RPZ is impacted by Carroll Shelby Road which runs east-west. It is recommended that these RPZ impacts be mitigated in both the short and long-term planning periods to ensure the RPZ remains complaint. This will be further analyzed in the alternatives chapter of this report. Additional development that occurs on SEF property should avoid all protective surfaces to ensure the safety of airport operators and nearby bystanders.

4.5.4. Runway Designations

A runway designation is identified by the whole number nearest to the magnetic azimuth of the runway when oriented along the runway centerline as if on approach to that runway end. This number is then rounded off to the nearest unit of ten. Magnetic azimuth is determined by adjusting the geodetic azimuth associated with a runway to compensate for magnetic declination. Magnetic declination is defined as the difference between true north and magnetic north. The value of magnetic declination varies over time and global location. Magnetic declination is a natural process and periodically requires the re-designation of runways. **Table 4-19** shows the Runways’ true and magnetic bearing, along with the current magnetic declination.

Table 4-19 - Runway Magnetic Bearing

Runway	True Bearing	Magnetic Declination	Magnetic Bearing	Required Runway Designation
1	360° 01’ 57.00’’	6° 22’ W	06° 23’ 57.00’’	1
19	180° 01’ 57.00’’	6° 22’ W	186° 23’ 57.00’’	19
14	135° 00’ 49.00’’	6° 22’ W	141° 22’ 49.00’’	14
32	315° 00’ 49.00’’	6° 22’ W	321° 22’ 49.00’’	32

Source: NOAA National Center for Environmental Information, Atkins Analysis 2018

The current rate of change is 0° 5’ W per year according to the National Oceanic and Atmospheric Administration (NOAA) National Center for Environmental Information. This rate of change applies to the magnetic declination, as it increases over time. By utilizing this current rate of change, the runway designation will not need to be adjusted within the planning period.

4.5.5. Runway Strength

The gross weight bearing capacity for Runway 1-19 and Runway 14-32 is published on the Airport Master Record, FAA Form 5010-1, as Single Wheel (S) 26,000 pounds, Dual Wheel (D) 50,000 pounds, and Dual Wheel in Tandem (2D) 85,000 pounds. Based on the 2017 FDOT Pavement Classification Number Development (PCND) program, the pavement strengths have changed as to what is currently reported. The actual pavement strengths are presented in **Table 4-20**.

Table 4-20 Runway Strength Summary

Runway	Single Wheel	Duel Wheel	Double Duel Tandem

	Existing	Future	Existing	Future	Existing	Future
1-19	83,000	Same	126,000	Same	N/A	N/A
14-32	30,000	Same	45,000	Same	N/A	N/A

All pavement strengths are in pounds (lbs).

Pavement strength based on 2017 FDOT Pavement Classification Number Development (PCND) Program

4.5.6. Taxiway Requirements

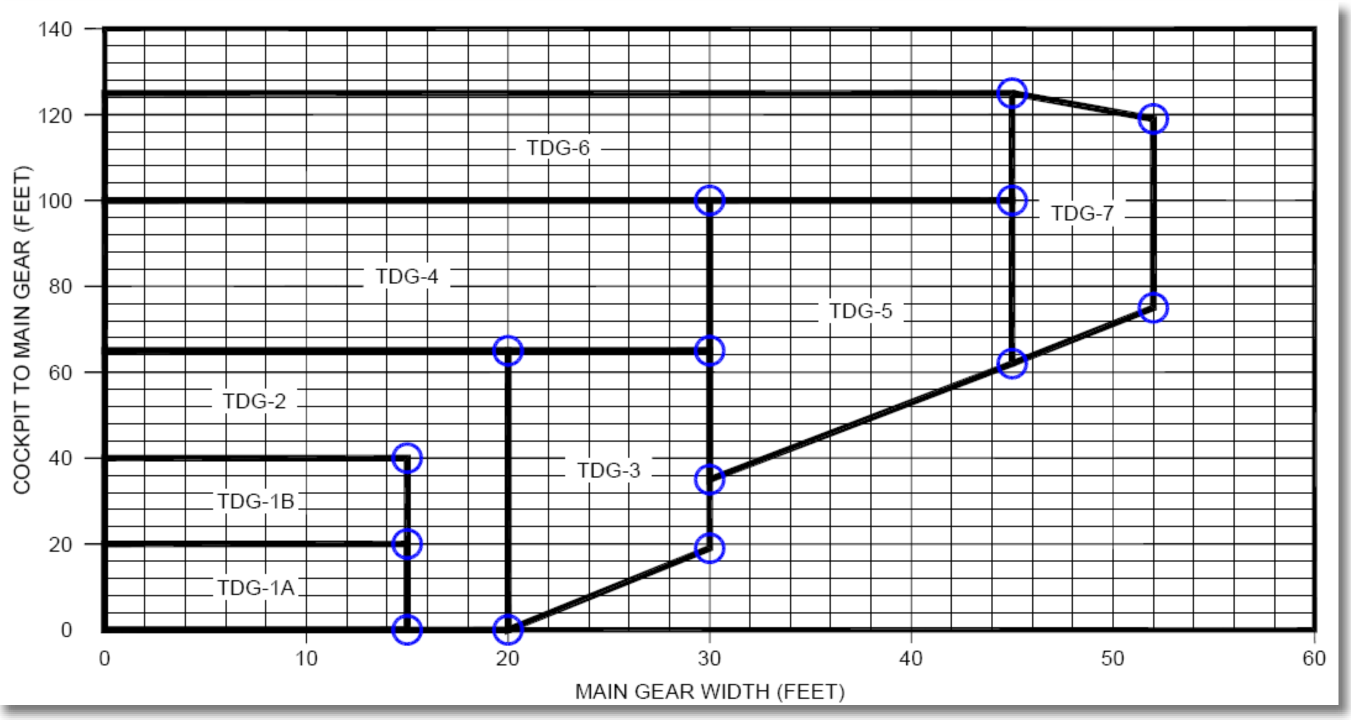
Taxiway Design Group (TDG) was introduced by the FAA with their release of AC 150/5300-13A. As depicted in **Figure 4-**, there are eight TDGs which are determined by aircraft undercarriage (gear) dimensions such as main gear width and the distance between the cockpit and main gear. **Table 4-21** presents the Airport's anticipated critical aircraft during the planning period, along with the associated TDG dimensions.

Table 4-21 - Critical Aircraft & Respective TDG

Aircraft Manufacture/Model	Main Gear Width (ft.)	Cockpit to Main Gear (ft.)	TDG
Gulfstream G-150	11.08	24.08	1B

Source: Atkins Analysis, 2018

Figure 4-2 - FAA AC 150/5300-13A – Taxiway Design Groups (TDGs)



Source: FAA AC 150/5300-13A Change 1, Airport Design

4.5.6.1. Taxiway Safety Area

Like the RSA for the runway pavement, the Taxiway Safety Area (TSA) is centered on the taxiway centerline and provides a protective area around the taxiway pavement. This is to primarily provide ample room for emergency vehicle accessibility, and to minimize the severity of impacts due to an aircraft deviation. The TSA is cleared and graded, and free of all objects that are not fixed by function. The width of the TSA depends on the critical aircraft's respective ADG and wingspan. **Table 4-22** depicts the TSA width in respect to the critical aircraft.

Table 4-22 - Taxiway Safety Area Requirements

Critical Aircraft (ADG)	TSA Width
II	79’

Source: FAA AC 150/5300-13A Change 1, Airport Design. Atkins Analysis, 2018

4.5.6.2. Taxiway Object Free Area

Similar to the ROFA for the runway, the Taxiway Object Free Area (TOFA) is centered on the taxiway centerline and provides an additional protected area beyond the TSA. The TOFA prohibits service vehicle roads, parked aircraft, and other objects that are not necessary for aircraft ground navigation. Vehicles can only operate in the TOFA if the vehicle operator gives the right of way to the oncoming aircraft. **Table 4-23** depicts the TOFA width in respect to the critical aircraft.

Table 4-23 - Taxiway Object Free Area Requirements

Critical Aircraft (ADG)	TOFA Width
II	131’

Source: FAA AC 150/5300-13A Change 1, Airport Design. Atkins Analysis, 2018

4.5.7. Aircraft Run Up Areas

At SEF, there are currently two designated aircraft run up areas. These are used by pilots to preform pre-takeoff procedures including instrument and engine performance checks. Run up areas should be designed to provide a clearly marked area for pilots to park that will keep their aircraft clear of the active taxiway, limiting airport operational impacts. The designated run up areas are located west of the Runway 19 end, and west of the Runway 1 end.

Ideally, run up areas are near runway ends directly off the taxiway and clear of any protected runway and taxiway surfaces. General design of holding bays include assured wingtip clearance of established critical aircraft, and proper markings to guide pilots safely. Markings should be labeled to have a specified area where aircraft can turn within the run up area to line up nose to tail with other aircraft. This will allow for aircraft to easily enter and exit the run up area without interfering with other aircraft in the same.

The Airport’s existing designated run up areas have deficiencies as they lack the proper markings to guide aircraft in and out, as well as the appropriate hold position to remain safely clear of operators on the taxiway.

Any proposed run up area modification presented in the upcoming Alternatives Development Chapter will aim to meet the following criteria:

- Markings should be placed to direct pilots to turn perpendicular or angled to the taxiway, which will create independent standing areas, so aircraft can enter and exit at ease and avoid prop wash during run up and ensure proper wingtip clearance.
- Pavement area should be increased to address capacity issues and ensure proper run up area depth for the established critical aircraft.
- Identify additional run up area locations to maximize availability for each runway end.

4.5.8. Airfield Lighting

The Inventory Chapter of this report describes the existing condition of the Airport’s airfield lighting equipment. Runway 1-19 has all lighting required to classify it as a non-precision approach capable runway. Runway 14-32 lacks lighting such as Runway End Identifier Lights (REIL) and runway edge lighting. Future improvements to airfield lighting equipment should feature light-emitting diode (LED) technologies where able and when practical.

4.5.9. Airfield Signage

Chapter 2, Inventory of Existing Conditions, describes existing conditions of airfield signage at SEF. While no specific recommendations for signage improvement are identified, airfield signage should be expanded and updated as necessary in conjunction with any airfield improvement projects. Signage is required to be easily depicted by aircraft operators utilizing the airfield infrastructures. Certain requirements include keeping signage at a 90-degree position to all pavement surfaces for clear depiction, lighted signs to provide assistance during night operations, and at an adequate height to ensure signage is identifiable.

4.5.10. Airfield Marking

Chapter 2, Inventory of Existing Conditions, describes the existing conditions of airfield markings at SEF. While no specific recommendations for marking improvements are identified, airfield markings should be expanded and updated as necessary in conjunction with any airfield improvement projects. Marking requirements include standards such as visible and not deteriorated paint, appropriate colors depending on the type of markings, and designated marking design for letters and numbers.

4.6. Landside Facility Requirements

The planning of landside facilities is based on both airside and landside capacity. The requirements for terminal and support area facilities has been determined for the 20-year planning period. The principal operating elements covered under these analyses for general aviation requirements include:

- Aircraft Hangars
- Aircraft Parking Apron
- Fuelling Facilities
- Land Use
- Perimeter/Security Fencing and Access Gates
- Support Facilities
- Taxilanes
- Terminal/Airport Administration Building
- Utilities
- Vehicle Access and Parking

4.6.1. Aircraft Storage Hangars

Hangar requirements for a GA facility are a function of the number of based aircraft, the type of aircraft to be accommodated, owner preferences, and area climate. It is common when calculating the hangar size needs of a facility to use an average size requirement for the various types of aircraft; meaning that each type of aircraft will require a different amount of space (usually measured in square-feet) within a specific type of storage facility, e.g. T-hangar, single-aircraft box hangar, or large multi-aircraft conventional hangar. **Table 4-24** illustrates aircraft storage assumptions currently at SEF.

Table 4-24 - Aircraft Storage Assumptions

Aircraft Storage Type	% of Based Aircraft Fleet Using Storage
Single Engine Piston	
T-Hangar	80%
Parking Apron	10%
Conventional/Box Hangar	10%
Multi Engine Piston	
Conventional/Box Hangar	70%
T-Hangar	0%

Parking Apron	30%
Jet	
Conventional Hangar (Large)	100%
Rotorcraft	
Conventional/Box Hangar	80%
Apron	20%

Source: Atkins Analysis 2018

4.6.1.1. T-Hangars

Future T-Hangar requirements will be representative of the type and sophistication of future based aircraft and the preferences of aircraft owners. Existing T-Hangar facilities at SEF cater specifically to small single-engine aircraft. At present, there are eight 10-unit t-hangars located at SEF. It is reasonable to anticipate that the T-Hangar storage requirement will increase due to forecasted fleet mix and the growth of single engine aircraft activity at the airport. T-Hangars provide an efficient method for aircraft storage and should be capitalized on to ensure the proper use of airport land use. It will be assumed that in the future, 80 percent of single-engine based aircraft will be stored in T-Hangars. Utilizing these assumptions, **Table 4-25** projects the need for additional T-Hangar units at SEF over the planning period.

Table 4-25 - T-Hangar Requirements

	Base Year	Forecast		
	2017	2023	2028	2038
Single-Engine Aircraft Requiring T-Hangar/T-Shed Storage	53	58	60	65
Current Capacity	90	90	90	90
Surplus/(Deficiency)	**37**	**32**	**30**	**25**

Source: Atkins Analysis 2018

As it can be seen in the table above, there is currently not a surplus in t-hangar space at SEF. There is no projected deficiency in t-hangar space at SEF over the planning period.

4.6.1.2. Conventional Hangars

Those single engine aircraft not forecasted to be on the apron or in a T-Hangar unit are assumed to be based in a conventional hangar. Further it is assumed that all multi-engine and jet aircraft, as well as all rotorcraft, based at the Airport will require storage in a conventional hangar. For planning purposes, the spatial requirements for each aircraft type is depicted in **Table 4-26**.

Table 4-26 - Average Aircraft Space Requirements (Conventional/Box Hangars)

Aircraft Storage Type	Space Required (Sq. Ft.)
Conventional/Box Hangar	
SE Piston	1,800
ME Piston	3,200
Turboprop/Jet	5,200
Rotorcraft	3,200

Acronyms: Square Feet (Sq. Ft.), Single-Engine (SE), Multi-Engine (ME)

Source: Atkins Analysis 2018

The average space requirements for the various aircraft in the Airport's based aircraft fleet mix was applied to the based aircraft forecasts to estimate the hangar area requirements for each hangar type. **Table 4-26** includes the assumptions made regarding the type of storage needed for each type of based aircraft at the Airport. **Table 4-27** depicts the calculated demand requirements for hangar space at the Airport throughout the planning period. These requirements were taken from an analysis of the existing based aircraft, current aircraft storage conditions as they exist on the airfield today, and the forecasted fleet mix of the Airport.

Table 4-27 - Conventional Hangar Requirements

	Base Year	Forecast		
	2017	2023	2028	2038
Based Single-Engine Aircraft Requiring Hangar Space	7	7	8	8
Based Multi-Engine Requiring Hangar Space	10	11	12	13
Based Jet Requiring Hangar Space	5	7	11	23
Based Helicopter Requiring Hangar Space	5	6	7	10
Total Aircraft Hangar Space Required (sq. ft.)	**84,600**	**103,120**	**131,820**	**207,460**
Total Existing Hangar Space (sq. ft.)	78,866	78,866	78,866	78,866
Surplus / (Deficiency) (sq. ft.)	**5,734**	**24,254**	**52,954**	**128,594**

Source: Atkins Analysis 2018

As is can be seen in the table above, there is currently a deficiency in conventional hangar space at SEF. This deficiency will continue to increase throughout the planning period. This is due to the projected increase of based jet aircraft, which will require larger storage space per aircraft. These results will be considered during the alternatives portion of this report.

4.6.2. General Aviation Aprons

General aviation aprons are areas that provide for the tie-down and storage of aircraft, as well as access to airside facilities and fuel facilities. FAA AC 150/5300-13A, *Airport Design*, provides guidelines for sizing aircraft aprons based on the number of aircraft anticipated to be utilizing the airport on a busy day. Operations can be classified in two categories: based aircraft operations and itinerant operations. These different categories require different standards for area needed on an apron. Aircraft aprons were analyzed across each category in accordance with FAA guidance.

In 2017, at the request of the FAA, a detailed analysis of the aircraft parking apron was conducted. The purpose of the study was to determine the amount of apron space that was needed to accommodate the airports current operations. The study found that due to the unique operational environment of the airport, being connected to the Sebring International Raceway and with the multitude of annual events held at the airport, that the entirety of the current apron space is necessary to support current operations at the airport, with some additional itinerant aircraft parking positions for future growth.

The 2017 study was based on the FAA Terminal Area Forecast (TAF) as the master planning effort had not yet begun. As such, the analysis utilized a total operational count of 103,087. The operations count at the onset of this master plan was adjusted as it was determined by the FAA, Airport, and FDOT, that the total operations identified in the TAF likely exceeded actual operations. Total operations for 2017 were adjusted downward to 72,670, with a projected growth reaching 122,055 by 2038. As the total operations are anticipated to exceed the number used in the apron study, the total required apron space need identified in the study is still accurate and accurately identifies the current and future apron space requirements. A copy of the 2017 Apron Justification report is included in **Appendix C**.

4.6.3. Automobile Parking and Access

Clearly defined parking areas near an airport's terminal building and other landside facilities are essential elements for general aviation airports. SEF has numerous vehicle parking areas available, both to the public and for its based aircraft tenants and business tenants. The number of automobile parking spaces required is generally calculated as a function of peak hour users as well as tenant and employee demand. Public parking requirements are shown in **Table 4-28**.

Table 4-28 - Automobile Parking Requirements

	Base Year	Forecast		
	2017	2022	2027	2032
GA Peak Hour Airport Users	36	41	47	60
Employees	20	20	20	20
Simultaneous Parking Area Users	56	61	67	80
Parking Area Required (sq. yards)	**1,960**	**2,135**	**2,345**	**2,800**
Existing (sq. yards)	2,100	2,100	2,100	2,100
Surplus / (Deficiency) (sq. yards)	**140**	**35**	**245**	**700**

Source: Atkins Analysis 2018

The public automobile parking demand calculated in the table above shows that there is currently not a deficiency. However, there will be a deficiency in automobile parking spots before 2022 which the projected forecast of GA airport users increasing.

4.6.3.1. Security and Perimeter Fencing

The primary function of airport fencing is to restrict the inadvertent entry to the airport by unauthorized individuals or wildlife. Most GA airports at a minimum possess some type of perimeter fencing around the airfield. SEF currently has fencing and access control measures in place that provides a layer of security and safety for its users and tenants. Overall, the varying in height perimeter fence needs to be analyzed for weak points, due to the airfield not being completely within the fencing envelope. Weak points and non-existent fencing are an overall security problem. This will be further addresses in the alternatives portion of this report, and recommendations for rehab will be made.

4.6.3.2. GA Terminal

The existing GA terminal is described in Working Paper 1. Chapter 5 of ACRP Report 113, *Guidebook on General Aviation Facility Planning*, provides general guidance as to the sizing of GA terminals. The primary consideration is that the facility can support the number of pilots, passengers, and visitors which could reasonably be expected during peak hour operations. GA facility sizing can range from 100 to 150 square feet of space per person would be adequate for SEF. For planning purposes, the ACRP suggests using a factor of 2.5 people per peak-hour operation (pilots and passengers). Additionally, combining the square-footage of the terminal building and the FBO facility produced total "terminal" space available at the Airport today. The requirements for the General Aviation building can be found in **Table 4-29**. There is no projected deficiency in the GA Terminal space within the planning period.

Table 4-29 - GA Terminal Requirements

	Base Year	Forecast		
	2017	2023	2028	2038
Peak Hour Operations	36	41	47	60
Required General Terminal Building Space (sq ft.)	9000	10250	11750	15000
Current Capacity Terminal Building (sq ft.)	22000	22000	22000	22000
Surplus / (Deficiency) (sq ft.)	**13000**	**11750**	**10250**	**7000**

Source: Atkins Analysis 2018

Airport Alternatives Analysis

5. Airport Alternatives Analysis

The primary objective of this chapter is to outline a logical development plan for Sebring Regional Airport, which meets the aviation needs over the planning period as well as satisfies the ultimate development goals of the Airport staff. The identification of alternatives was completed based on the information presented in the previous chapters of this master plan update in conjunction with reasonable analysis of industry trends and socioeconomic information.

As recommended by the FAA, alternatives evaluation began with a broad range of possible alterations of the airport. From that point, the alterations were screened and tossed out to provide a set of differing airfield alternatives. These alternatives have been thoroughly evaluated and deliberated, resulting is a preferred development plan. The alternatives and selected development plan are based on the following general criteria in **Table 5-1**.

Table 5-1 - Evaluation Criteria for Selected Development Plan

Criteria	Description
Operational	Any selected development plan should be capable of meeting the Airport's facility needs as they have been identified for the planning period. Further, preferred plans must resolve any existing or future deficiencies as they relate to FAA design and safety criteria.
Environmental	Airport growth and expansion has the potential to impact the Airport's environs. The selected development plan should seek to minimize environmental impacts in the areas outside the Airport's boundaries. The selected development plan should also recognize sensitive environmental features that may be impacted by the development plan.
Feasibility	The selected development plan should be feasible and justifiable. Development should not exceed the identified demand, however, areas in which development above and beyond the demand can be feasibly accommodated without interfering with existing and future development may be identified. Development plans must meet the needs of the Airport and local government while meeting all FAA design standards and the vision of the local community. The selected development plan should proceed along a path that supports the area's long-term economic development and diversification objectives.
Cost	Identification of cost efficient and effective development is paramount during the planning process. Cost should be considered during the alternatives analysis process to meet the identified demand in a reasonable and responsible manner. The selected development plan must meet the needs of the Airport and community while minimizing excessive and unreasonable costs.
Sustainability	The four categories of sustainability should be referenced throughout all planning processes to ensure future airport development is completed in a method that promotes economic viability, operational efficiency, natural resource conservation, and social responsibility.

In addition to the factors listed above, evaluation included an in-depth review of past-planned projects at the airport. Numerous projects have been planned, designed, and in some cases, permitted throughout the life-cycle of SEF. It was important to prioritize these previously planned projects to determine the reasonable outlook of future conditions for the airfield.

5.1. Airport Development Alternatives and Concepts

The airport development plan outlines the necessary development and facility requirements to not only meet the forecast demand, but to ultimately ensure competitiveness and financial viability for the Airport, and to provide the Airport and surrounding community with the greatest overall benefit.

The alternatives discussion has been broken down into three categories: Development Constants; Airside Alternatives; and, Landside Alternatives.

- **Development Constants** are specific design features that are included in all airfield alternatives. These design features have been vetted in previous studies and were identified as continuing priorities for the Airport.
- **Airside Alternatives** include all runway and taxiway improvements.
- **Landside Alternatives** include all other development including hangars, aprons, on-airport roadways, etc.

5.1.1. Development Constants

The following projects are included in this alternatives analysis effort as projects that are high priorities for the Airport. These projects have undergone previous design and approval processes and were included in the Airport's previous Airport Master Plan and Airport Layout Plan. For the effort of updating the Airport Master Plan, these projects have been re-analyzed and determined to be continued high priority efforts for the Airport. This group of projects are considered development constants for this effort and will be integrated into all airfield alternatives.

5.1.1.1. Catalyst Site

The Catalyst project is a proposed 100-acre development on the east side of Sebring Regional Airport (SEF). Infrastructure components will be constructed to convert the undeveloped area into a "shovel-ready" leasehold site with all the necessary infrastructure in place for full build out. The long-term vision for the proposed "Catalyst Site" is to develop a multi-use landside facility for an array of various tenants. The site will provide an ideal business location for a regional commerce/industrial park on the north-east side of the Airport.

The current designs for the Catalyst Site were completed in 2011 and placed on hold until funding could be obtained. The completed package includes the 100% plans for all roads, storm water ponds, site work, utilities, signage and markings, lighting, and landscape. At the time of this master plan update, the following improvements for the Catalyst Site are awaiting construction:

- Removal of unsuitable soil
- Placement of compaction of fill material
- Leveling and grading of the site
- Roadway construction
- Utility and storm-sewer installation

The catalyst Site would be marketed to attract large commercial business leases resulting in long-term financial stability for the Airport. Additionally, this infrastructure has potential to provide a profound economic impact to the surrounding community. This project's status as a priority for the Airport dictates an area that must be avoided in determining airside alternatives. Therefore, the Catalyst Site project area has been outlined as a constant variable in this preferred alternative, as it was in previous iterations completed by the Airport.

5.1.1.2. Commerce Park

This project will open a 230.6-acre development on both sides of Carroll Shelby Road. The Commerce Park project includes a two-lane loop road with grading of parcels for future development. The storm sewer system for the road will convey project runoff to various ponds. Commerce Park project will be constructed as part of the master stormwater management system for Sebring Airport. The development of the proposed Commerce Park will enhance the target marketing effort to attract aircraft manufacturers to the Airport. The addition of development-ready sites with aeronautical opportunities will open the east portion of the airfield to crucial long-term financial sustainability and aeronautical growth.

5.1.1.3. Taxiway Bravo

In concert with the Commerce Park project, the Taxiway B Project will create a common use taxiway to access commerce park airside parcels while simultaneously standardizing taxiway geometry. This project involves the construction of a full parallel taxiway and run up area on the east side of Runway 1-19. This taxiway will serve as access to future commercial facilities within the commerce park as well as create a safer and more efficient taxi system serving the Airport's primary runway. Specifically, the current runway/taxiway intersection at Runway 1-19 and Taxiway C does not meet FAA standards. With the installment of the proposed Taxiway B, this runway/taxiway intersection will be replaced with a 90-degree right angle intersection that meets current 150/5300-13A geometric standards. Right-angle taxiways provide the best visual perspective to a pilot approaching an intersection with the runway to observe aircraft in both the left and right directions.

The design of the proposed taxiway was originally completed in 2006. Since then, the plans have been put on hold awaiting funding. At the time of design completion, the project was found to be categorically excluded from an environmental assessment (EA) or an environmental impact statement (EIS) by determining the project as not having a significant effect on the human environment. This shovel-ready project will enhance safety and efficiency at the Airport as well as providing airside access to the future Commerce Park. With the construction of this taxiway, marketing the future commerce park to prospective aeronautical users will be greatly enhanced.

5.1.1.4. Rail Realignment

Due to the proximity of the existing rail spur in relation to airfield infrastructure, it is recommended that a rail realignment is conducted. There are current impacts to the Runway 19 RPZ that can be mitigated through the realignment. In addition, as depicted in subsequent sections, proposed development will constitute this realignment.

5.1.1.5. Runway 19 RSA Compliance

As stated in the Design Criteria and Facility Requirements, the existing Runway 19 RSA is non-compliant due to vegetation which begins approximately 915 feet from the Runway 19 end and spans the entire 500-foot width. To mitigate the RSA impacts, it is proposed that the vegetation within the existing Runway 19 RSA is cleared. This will ensure that the RSA standards and the safety of all operators are upheld.

5.1.2. Airside Alternatives

Airside facilities are, by their nature, the focal point of an airport complex. Because of their role, and the fact that they physically dominate a great deal of the airport's property, airside facility needs are often the most critical factor in the determination of viable airport development alternatives. The runway system requires the greatest commitment of land area and is often the greatest influence on the identification and development of other airport facilities.

The potential for physical expansion of an airport to accommodate airside development is the primary factor that determines development in the long term. The airside layout directly affects the efficiency of aircraft movements both on the ground and in the surrounding airspace - not only in the terminal area, but in regional airspace as well. It also limits the ability of the Airport to handle certain aircraft, which can directly affect the types of air service the Airport can offer or accommodate. In addition, the efficiency of aircraft movements is also affected by local approach and departure procedures, which can be influenced by restrictions due to noise, airspace congestion, or other considerations.

The previous airport master planning effort included visions of the Airport in terms of airside and landside developments. These visions have been re-assessed within this report and have been represented in the updated alternatives if deemed suitable. Market conditions and specific needs have been dynamic since the Airport's last master plan update. Previous development concepts have been modified and/or removed to better accommodate the Airport's current needs and objectives. As noted in the facility requirements study, it has been forecasted that the anticipated aircraft utilizing the Airport will be larger compared to the existing critical aircraft. Specifically, a shift in critical aircraft Airplane Design Group (ADG) from C-II to D-III is expected. This has been considered for the alternatives analysis and airside infrastructure needed to accommodate such a shift. Aside from standard capacity considerations, federal airport design requirements necessitate a change in airside facilities resulting from an upward shift in critical aircraft ADG.

5.1.2.1. Required and Recommended Airside Improvements

The airside's current configuration accommodates the existing aircraft fleet mix and traffic levels with use of two bi-directional runways, Runway 1-19, and Runway 14-32. The supporting taxiway and taxilane infrastructure plays a large role to provide safe and efficient ground navigation for operators. However, the airfield's fleet mix is estimated to slowly increase and change during the forecast period. The previous chapters identified areas for improvement on the airside to mitigate capacity issues while encouraging growth and promoting safety. These elements are discussed in detail in the following sections.

5.1.2.1.1. Runway 1-19

The existing Runway 1-19 is the Airport's primary runway and is approximately 5,234 feet long by 100 feet wide. It is anticipated that this runway will continue to serve as the Airport's primary runway and accommodate most aircraft. The runway length currently serves most of the Airport's needs and the surrounding community. However, within the forecast period if current trends continue, operations by large jet aircraft are anticipated to increase. Specifically, it is anticipated that local business development will spur a sharp increase in larger and heavier business jet operations. That class of aircraft includes the Bombardier Global Express, larger Dassault Falcons, and larger Gulfstream series aircraft. The extension of Runway 1-19 by 1,776-feet to a total length of 7,000-feet has undergone extensive study and justification. The extension was approved by the FAA on January 9th, 2014. However, due to the length of time passed from the approval to present day and taking into consideration world affairs which have occurred, it is required that the runway justification study is revisited and updated. On conditional approval of the runway extension justification study, an EA will follow. In addition to the lengthening of the runway, a widening is also proposed to meet FAA design standards for D-III aircraft. With the proposed runway length and width enhancements, the runway will be equipped to better serve high performance corporate and regional jet aircraft.

5.1.2.1.2. Runway 14-32

The Airport is equipped with Runway 14-32, a crosswind runway measuring 4,990 feet in length and 100 feet in width. This runway currently meets design criteria to accommodate B-II aircraft. Examples of B-II aircraft include the Beech 200 Super King, Cessna Citation models, and the Dassault Falcon 2000. With priority towards the Runway 1-19 extension, no infrastructure updates to Runway 14-32 are recommended at this time. It is anticipated that 14-32 will maintain its status as the Airport's secondary runway primarily serving B-II aircraft.

Although physical changes are not being recommended for this update, Runway 14-32 requires modification to the runway's declared distances. A building referred to as "The Funder Building" was constructed off the northwestern edge of the Runway 14 end in 2007. Under current conditions, this building lies within the extents of the existing runway protection zone (RPZ) and the building's access road lies within the boundary of the runway object free area (ROFA). The Airport has undergone an extensive study to devise mitigation strategies that do not have a substantial negative impact on airport efficiency. The following is a summarization of the proposed operational procedure alterations to Runway 14-32:

- Update the Runway Design Code (RDC) from B-II to B-II "Small"

- Reduces the RPZ dimension to mitigate RPZ obstruction
- Restricts the use of 14-32 to aircraft with a maximum certified takeoff weight of 12,500 lbs.

- Reduce the Landing Distance Available (LDA) and the Accelerate Stop Distance Available (ASDA) to 4,767'
    - Tightens the ROFA closer to the runway end, mitigating the Funder Building obstruction

5.1.2.1.3. Taxiways

At present, required modifications to the taxiway infrastructure are needed to mitigate existing hotspot locations, high-risk taxiway geometry, and non-standard airfield geometry. These areas of safety concern have been outlined in previous chapters. Primary modifications will mitigate over-expansive taxiway pavement, and improper runway entrances.

The following are required taxiway modifications:

- **Taxiway A4**: Due to the removal of the previous Taxiway A4 connector, which was non-standard due to the direct runway-to-apron access at the intersection of both runways and consisted of a 3-node configuration, it is recommended to replace this connector. The access to Runway 1-19 will be provided approximately 2,020 feet from the Runway 19 end.
- **Taxiway B**: Taxiway modifications as described in Section 5.1.1.3 of this chapter.

5.1.3. Landside Alternatives

The airports landside facilities are consolidated on the west side of the runways, along the edge of the airports apron. The Airport's unique consolidation of multimodal and multi-use facilities allows for a high level of interaction between the various use areas. Future facility needs were identified in Chapter 4 based on the approved forecast as outlined in Chapter 3. Currently, SEF has a deficiency in conventional hangar space and vehicle parking. Alternatives were developed based on this need and have been presented in each alternative based on the proposed configuration of the airside facilities.

5.1.4. Proposed Airside Improvements

Some airside improvements have been proposed at the Airport to enhance the existing aeronautical capacity. The following alternatives were developed in concert with the forecast and demand/capacity analysis completed for the Airport. It is in anticipation of a growing level of demand along with alignment with FAA design criteria that these alternatives are being presented. These alternatives also derived airside layout components from the previous master plan that were deemed still achievable and appropriate for the Airport's current conditions. Three simplified alternatives graphics were presented to the Airport for collaboration to discuss the Airport's intended development direction. The following summarization of the three alternatives is representative of conversation held at SEF in determining the most appropriate preferred alternative moving forward.

5.1.4.1. Alternative 1

Airside Alternative 1 is depicted in **Figure 5-1**. This alternative does not include the northern extension of Runway 1, opening more possibilities for a future crosswind runway. Specifically, Alternative 1 proposed a new east-west crosswind runway on the northern portion of airport property. The extents of this runway fall well within the Airport property boundary, making land acquisition a non-issue. In addition to the proposed crosswind runway, Alternative 1 displays a northern partial parallel taxiway to Runway 1-19 that wraps into a partial parallel taxiway for Runway 14-32. This taxiway equips the Runway 19 end with an east-side geometrically compliant runway entrance. As shown, this taxiway also extends northerly to connect to the proposed crosswind runway.

The proposed crosswind runway itself is shown with a southern full-length parallel taxiway. However, in this scenario, this runway may not need paved taxiway infrastructure at all. The Airport has expressed immense interest in a turf strip runway to accommodate its fleet of hobbyist recreational pilots. Pilots, specifically flying "tail dragger" aircraft are known to prefer turf strip runways due to the minimized wear on aircraft. Although turf strip runways are known to increase an Airport's appeal to a wide variety of recreational aircraft and pilots, the turf comes with the added cost of increased runway length required. This study included a runway length analysis to determine the required length of an additional runway at SEF for both paved and non-paved surfaces.

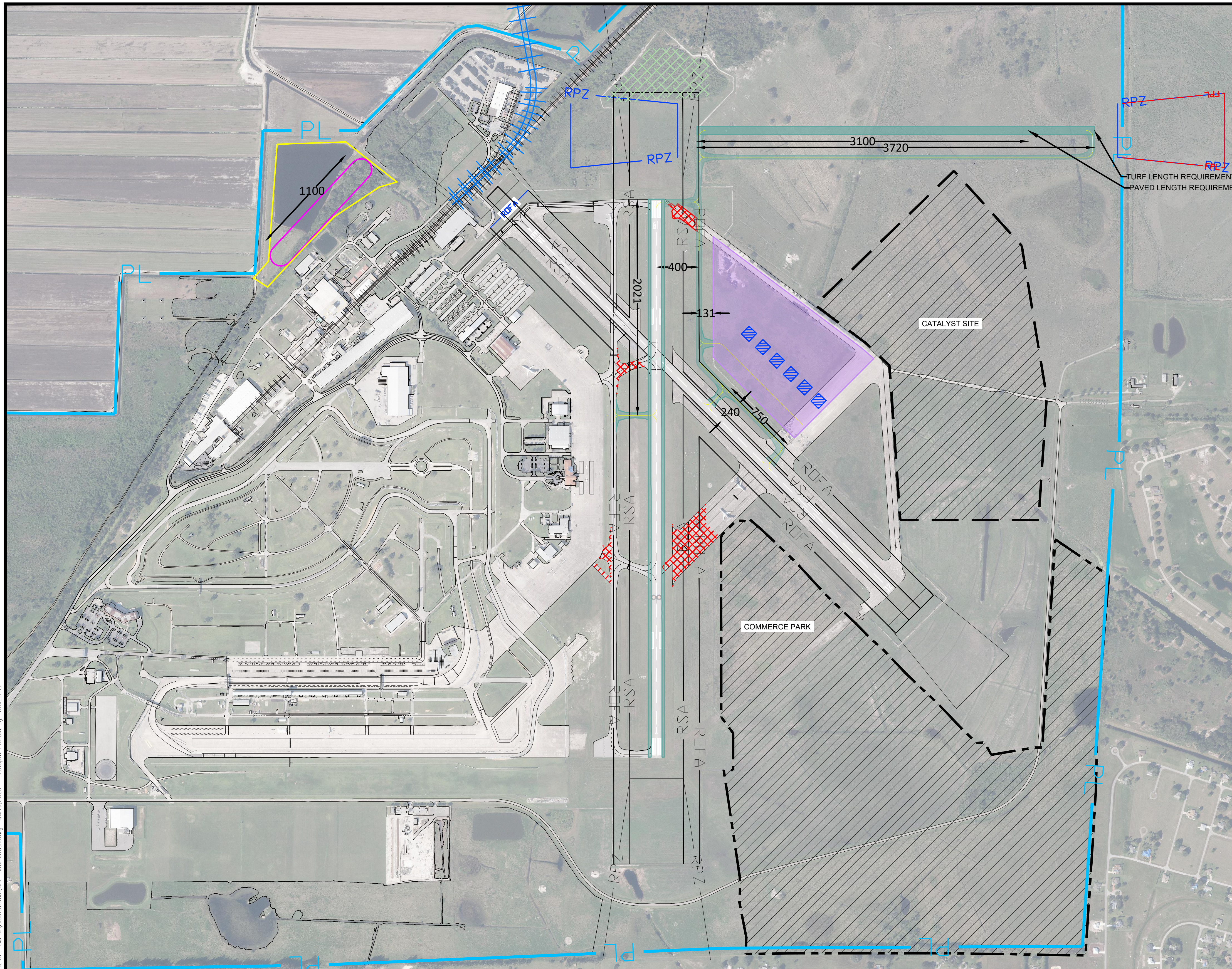
Airside development is proposed in the form of six 100 ft by 100 ft box hangars with supporting infrastructure. This will increase the available conventional hangar storage space by 60,000 square feet. This proposed airside development is located to the east of the Runway 1-19 and Runway 14-32 intersection. The area is proposed to be accessible via the proposed east-side Runway 1-19 northern partial parallel taxiway. Further landside development is proposed in the areas previously described as the commerce park and catalyst site.

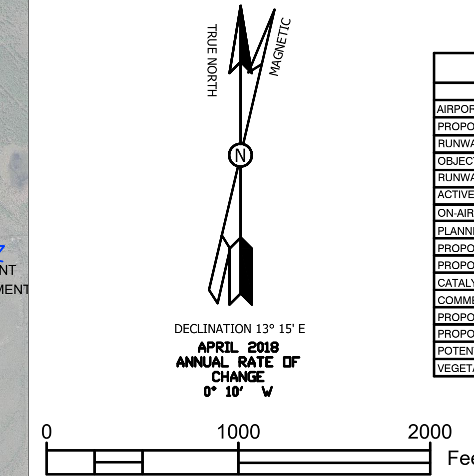
Key advantages of Alternative 1 include:

- Enhancing Runway 1-19 width to accommodate future fleet mix;
- New east-west runway to promote general aviation operations;
- Partial parallel taxiways for Runway 1-19 increases exit factors; and,
- Partial parallel taxiway for Runway 14-32 provides access to and from the Runway 32 end.

Disadvantages of Alternative 1 include:

- Development of new runway diminishes available developable area on the northern portion of airport property; and,
- Eastern land acquisition required for new runway.





LEGEND

	EXISTING	PROPOSED
AIRPORT PROPERTY	PL	N/A
PROPOSED SEA PLANE BASE	N/A	
RUNWAY SAFETY AREA	RSA	N/A
OBJECT FREE AREA	ROFA	ROFA
RUNWAY PROTECTION ZONE	RPZ	RPZ
ACTIVE AIRFIELD PAVEMENT		N/A
ON-AIRPORT BUILDING		N/A
PLANNED DEVELOPMENT		N/A
PROPOSED RUNWAY DEVELOPMENT	N/A	
PROPOSED TAXIWAY DEVELOPMENT	N/A	
CATALYST SITE		N/A
COMMERCE PARK SITE		N/A
PROPOSED PAVEMENT DEMOLITION	N/A	
PROPOSED APRON DEVELOPMENT	N/A	
POTENTIAL HANGAR AREAS	N/A	
VEGETATION TO BE REMOVED	N/A	

NOTES:

1. **Runway 1-19**
   - 1.1. No Extension
   - 1.2. Runway exit at least 2,000' from the landing threshold - single engine small aircraft utlization percentage increases over 50% for landings on 19
   - 1.3. Addition of parallel taxiway to runway 1-19 with a proper runway entrance on 19 end.
   - 1.4. Potential access from proposed parallel taxiway to future Northern runway
   - 1.5. Runway width expanded to 150' to achieve D-III RDC
2. **Runway 14-32**
   - 2.2. Cleaner geometry - removing the runway exit from the runway intersection
   - 2.3. Two proposed exits that are between 2,000' and 4000' from runway 14-32 landing thresholds
   - 2.4. Proposed exits are at least 750' from other exits, accounting both in increased capacity calculations
   - 2.5. Removes ramp-to- runway geometry
   - 2.6. Remove instrument departures from 32 to remove 40:1 TERPS departure surface off the 14 end*
   - 2.7. Reduce West Flow ASDA and LDA to 4,767' to mitigate ROFA penetrations off the 14 end*
3. **Turf Strip**
   - **3.1.** 3,720' minimum for aircraft with 50> knots approach speed - AC 150/5325-4B - Figure 2-1
4. **Sea Plane Strip**
5. **Facilities**
   - **5.1.** Potential for immense development on East side of the airfield
   - **5.2.** Showing 6 100' x 100' box hangars to accommodate 52,954' box hangar deficiency measured for 2028

*See previous declared distances plan and profile study

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REVISIONS	
DATE	DESCRIPTION

CLIENT

SEBRING AIRPORT AUTHORITY

PROJECT

AIRFIELD ALTERNATIVES

SEBRING REGIONAL AIRPORT (SEF)
SEBRING, FLORIDA

SHEET TITLE

ALTERNATIVE 1:
NO EXTENSION

DRAFT

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DRAWN: K.A.K
DESIGN: K.A.K
CHECKED: GF
DATE: FEBRUARY 2020

FIGURE 5-1

5.1.4.2. Alternative 2

Airside Alternative 2 is depicted in **Figure 5-2**. This alternative includes the northward extension of Runway 1-19 to the total proposed length of 7,000 feet. As discussed in previous sections, this will allow the airport to accommodate the future fleet mix and promote growth of the Airport's operations. In addition, the Runway 1-19 width will be enhanced to 150 feet. Similar to Alternative 1, Alternative 2 proposes for a northwest-southeast turf runway positioned on the northern portion of the airport property, accessible via a proposed east-side Runway 1-19 northern partial parallel taxiway. The turf runway will be approximately 3,720 feet in length and 100 feet in width. This taxiway will provide two access routes to the proposed turf runway's full parallel taxiway. A partial parallel taxiway is proposed on the south side of Runway 14-32, which will provide access to the Runway 32 end. The partial parallel taxiway will continue northwest to cross over Runway 1-19 at the proposed realigned Taxiway A4 connector location.

To mitigate existing impacts to the Runway 1 end safety surfaces, it is proposed that a displaced threshold is imposed on this runway end. The Runway 1 threshold will be relocated approximately 870 feet to ensure the compliance of all runway safety surfaces, and the safety of all operators on airport property. This displacement will require re-marking the runway appropriately and relocating any landing aids currently utilized on this runway end.

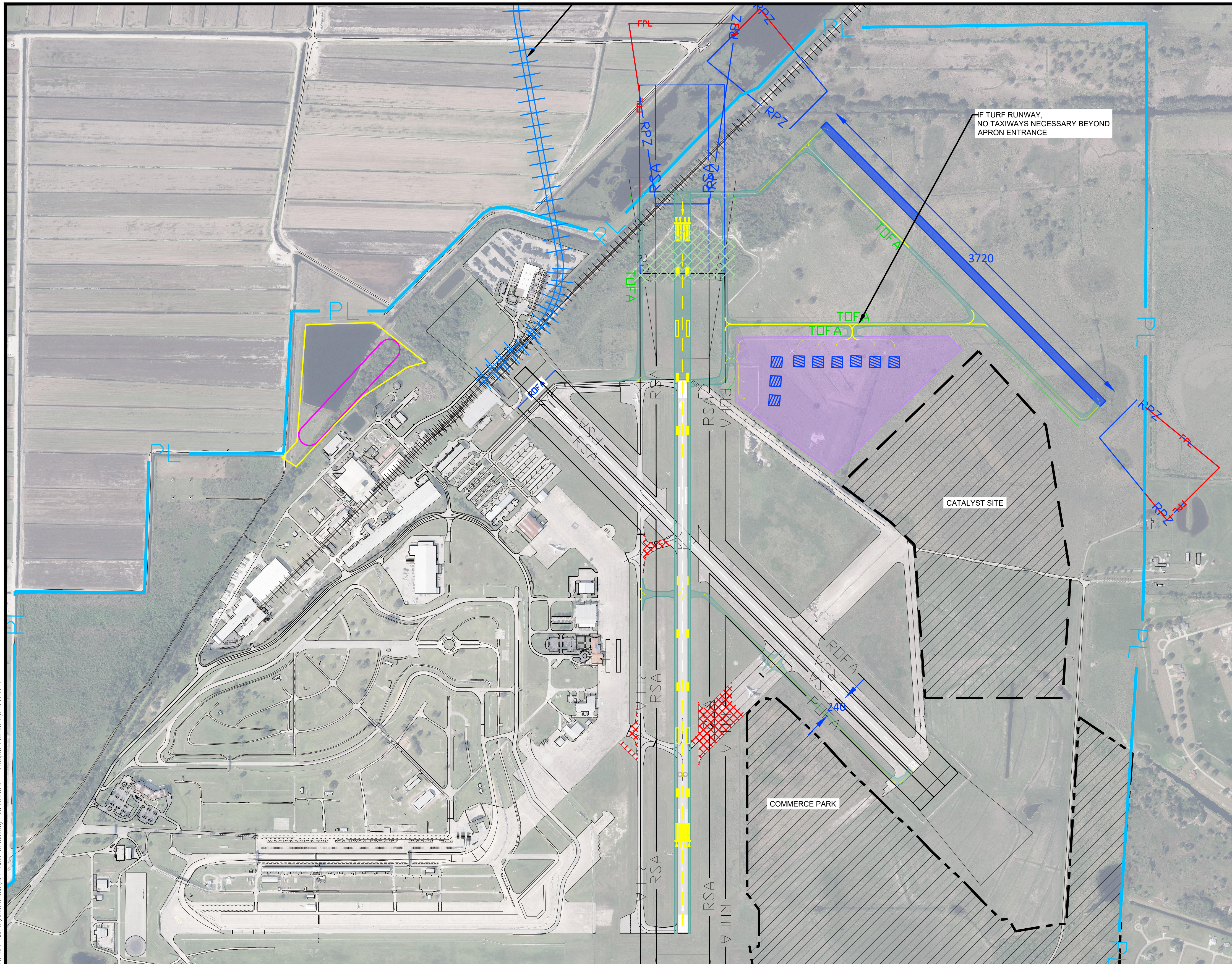
Airside development is proposed in the form of nine 100 ft by 100 ft box hangars with supporting infrastructure. Compared to Alternative 1, the proposed location for this airside development will be east of the existing Runway 19 end. This will increase the available conventional hangar storage space by 90,000 square feet. Further landside development is proposed in the areas previously described as the commerce park and catalyst site.

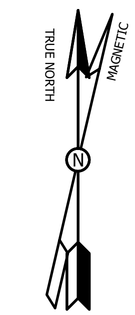
Key advantages of Alternative 2 include:

- Extension of Runway 1-19 to total length of 7,000 feet;
- Enhancing Runway 1-19 width;
- Mitigating Runway 1 end safety surface impacts;
- New northwest-southeast turf runway to promote general aviation operations;
- Partial parallel taxiways for Runway 1-19 increases exit factor; and,
- Partial parallel taxiway for Runway 14-32 provides access to and from the Runway 32 end.

Disadvantages of Alternative 2 include:

- Highest development costs out of three proposed alternatives;
- Required land acquisitions in two locations due to the Runway 1-19 extension and new turf runway; and,
- Proposed northwest-southeast turf runway diminishes available developable area on the northern portion of airport property.





DECLINATION 13° 15' E
APRIL 2018
ANNUAL RATE OF CHANGE
0° 10' W

0 1000 2000 Feet

LEGEND	EXISTING	PROPOSED
AIRPORT PROPERTY	PL	N/A
PROPOSED SEA PLANE BASE	N/A	
RUNWAY SAFETY AREA	RSA	N/A
OBJECT FREE AREA	ROFA	ROFA
RUNWAY PROTECTION ZONE	RPZ	RPZ
ACTIVE AIRFIELD PAVEMENT		N/A
ON-AIRPORT BUILDING		N/A
PLANNED DEVELOPMENT		N/A
PROPOSED RUNWAY DEVELOPMENT	N/A	
PROPOSED TAXIWAY DEVELOPMENT	N/A	
CATALYST SITE		N/A
COMMERCE PARK SITE		N/A
PROPOSED PAVEMENT DEMOLITION	N/A	
PROPOSED APRON DEVELOPMENT	N/A	
POTENTIAL HANGAR AREAS	N/A	
VEGETATION TO BE REMOVED	N/A	

NOTES:

1. **Runway 1-19**
   1.1. Planned 1,170' extension of Runway 19 with parallel TDG 3 taxiways to the extension
   1.2. Runway width expanded to 150' to achieve D-III RDC
2. **Runway 14-32**
   2.1. Parallel taxiway to the 32 end (TDG 2)
   2.2. Remove instrument departures from 32 to remove 40:1 TERPS departure surface off the 14 end*
   2.3. Reduce West Flow ASDA and LDA to 4,767' to mitigate ROFA penetrations off the 14 end*
3. **Facilities**
   3.1. Potential for immense apron development on East side of the airfield
   3.2. Showing 6 100' x 100' box hangars to accommodate 52,954' box hangar deficiency measured for 2028
3. **Turf Strip**
   3.1. 3,720' minimum for aircraft with 50+ knots approach speed (All Cessnas) - AC 150/5325-4B - Figure 2-1
   3.2. If paved, only 3,100' required
   3.3. Accommodate instrument departures for crosswind conditions to mitigate removal of instrument departures from existing 32*
   3.4. 965.91' minimum for aircraft with at least 30 knots but less than 50 knots approach speed (limited)

*See previous declared distances plan and profile study

REVISIONS	
DATE	DESCRIPTION

CLIENT

SEBRING AIRPORT AUTHORITY

PROJECT

AIRFIELD ALTERNATIVES

SEBRING REGIONAL AIRPORT (SEF)
SEBRING, FLORIDA

SHEET TITLE

DRAFT

ALTERNATIVE 2:
19 EXTENSION

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JOB NO.: 100055323
DRAWN: K.A.K
DESIGN: K.A.K
CHECKED: GF
DATE: FEBRUARY 2020

FIGURE 5-2

5.1.4.3. Alternative 3

Airside Alternative 3 is depicted in **Figure 5-3**. This alternative does not include any enhancements to Runway 1-19 to ensure a no-change option is analyzed. Similar to the previous two alternatives, a new runway is proposed on the northern portion of the airport property. This proposed paved runway will be parallel to Runway 1-19 but will be displaced northward as to not impact Runway 14-32. The new runway length would be approximately 3,520 feet in length and 100 feet in width, which will solely accommodate smaller general aviation aircraft. The new runway will be supported by a west-side full parallel taxiway which will connect directly to the existing Runway 19 end.

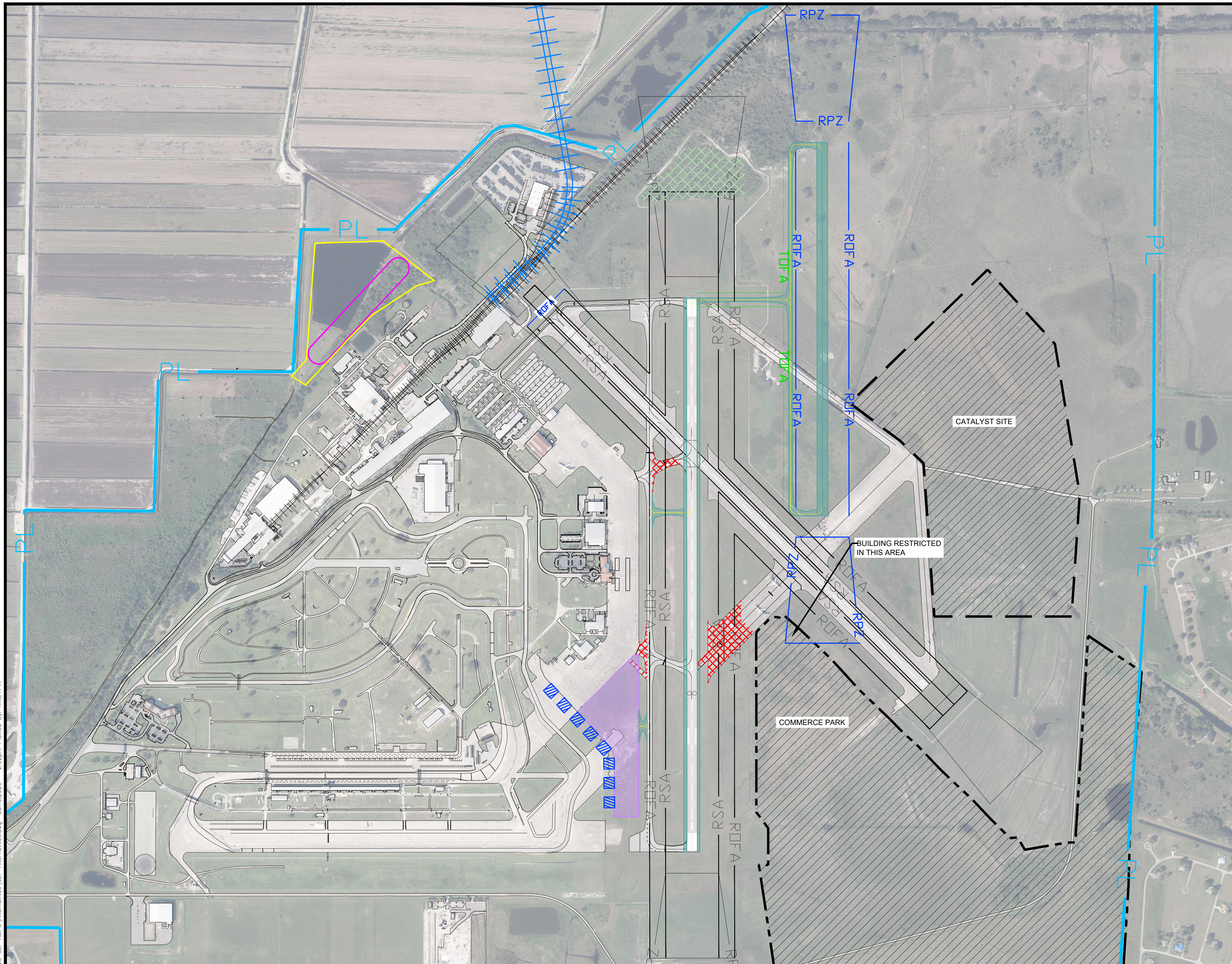
Airside development is proposed in the form of eight 100 ft by 100 ft box hangars with supporting infrastructure. The location for these facilities will be located on the south portion of the existing apron area, which will be extended to accommodate six of the eight proposed hangars. This will increase the available conventional hangar storage space by 80,000 square feet. Two of the proposed hangars will be placed on the existing apron. Further landside development is proposed in the areas previously described as the commerce park and catalyst site.

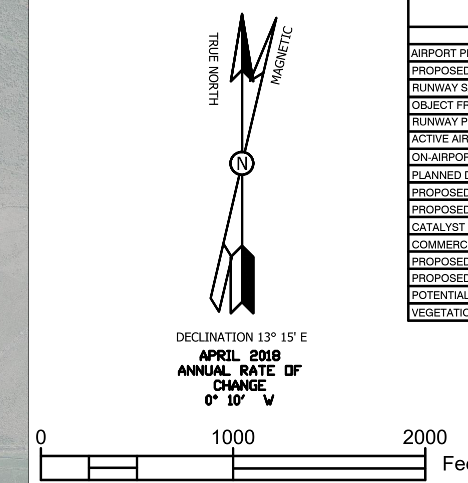
Key advantages of Alternative 3 include:

- Lowest development costs among three alternatives;
- New parallel runway to enhance capacity; and,
- No proposed land acquisition.

Disadvantages of Alternative 3 include:

- No enhancements of Runway 1-19 will inhibit future fleet mix to be accommodated safely and efficiently at the airport;
- Proposed parallel runway will impact Runway 14-32; and,
- No Runway 14-32 parallel taxiway will not allow further access to and from Runway 32 end.





LEGEND	EXISTING	PROPOSED
AIRPORT PROPERTY	PL	N/A
PROPOSED SEA PLANE BASE	N/A	
RUNWAY SAFETY AREA	RSA	N/A
OBJECT FREE AREA	ROFA	ROFA
RUNWAY PROTECTION ZONE	RPZ	RPZ
ACTIVE AIRFIELD PAVEMENT		N/A
ON-AIRPORT BUILDING		N/A
PLANNED DEVELOPMENT		N/A
PROPOSED RUNWAY DEVELOPMENT	N/A	
PROPOSED TAXIWAY DEVELOPMENT	N/A	
CATALYST SITE		N/A
COMMERCE PARK SITE		N/A
PROPOSED PAVEMENT DEMOLITION	N/A	
PROPOSED APRON DEVELOPMENT	N/A	
POTENTIAL HANGAR AREAS	N/A	
VEGETATION TO BE REMOVED	N/A	

NOTES:

1. **Runway 14-32**
   1.1. Cleaner geometry - removing the runway exit from the runway intersection
   1.2. Removes ramp-to-runway
2. **Runway 1L-19R**
   2.1. 3,520' long
   2.2. Must be paved to avoid rail realignment
   2.3. Parallel taxiway with connection to Runway 1 end

REVISIONS	
DATE	DESCRIPTION

CLIENT

SEBRING AIRPORT AUTHORITY

PROJECT

AIRFIELD ALTERNATIVES

SEBRING REGIONAL AIRPORT (SEF)
SEBRING, FLORIDA

SHEET TITLE

DRAFT

ALTERNATIVE 3:
PARALLEL PRIMARY

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DRAWN: K.A.K
DESIGN: K.A.K
CHECKED: GF
DATE: FEBRUARY 2020

FIGURE 5-3

5.2. Alternatives Evaluation Criteria

The evaluation of the alternatives followed the criteria as found in FAA's AC 150/5070-6B, *Airport Master Plans* and included the following:

- Financial Feasibility
- Operational Performance
- Environmental Implications
- Best Planning Tenets

5.2.1. Financial Feasibility

This analysis considers the impacts of a particular alternative in relation to the Airport's economic viability as well as that of the surrounding community. Furthermore, the analysis provides consideration of the estimated development costs associated with the various alternatives, along with prospective funding sources. The following were assessed as a part of this analysis:

- **Development costs** – Includes anticipated costs of development and potential alternative funding sources. Alternative funding sources include those other than the City or the FAA, such as private business owners and/or developers.
- **Job creation** – The potential of each alternative to create employment and other economic development benefits for the Airport and the immediate surrounding area.
- **Financial sustainability** – Anticipated opportunities for revenue generation through increased activity, new businesses, etc. to increase the Airport's ability to become more financially self-sufficient.

5.2.2. Operational Performance

An airport's ability to function as a system can be determined based on several factors:

- **Capacity** – The ability to accommodate future demand as determined in the facility requirements.
- **Capability** – The ability to meet airport design standards and ensure a safe operating environment.
- **Operational efficiency** – How well the alternatives work as a system to avoid delays, inefficiencies, ground incidents, airspace conflicts, etc. This also considers the coexistence of existing and future users.

5.2.3. Environmental Implications

As discussed in the Environmental Overview, there are several environmental resources that may be impacted to some degree resulting from airport development. To review the NEPA environmental categories associated with the Airport in detail, please refer to Section 3, Environmental Overview. Following are the Airport's identified environmental criteria:

- Air Quality
- Biological Resources (Including Fish, Wildlife, and Plants)
- Hazardous Materials, Solid Waste, and Pollution Prevention
- Land Use
- Noise and Noise-Compatible Land Use
- Climate
- Department of Transportation Act, Section 4(f)
- Historical, Architectural, Archaeological, and Cultural Resources

- Visual Effects (Including Light Emissions)
- Water Resources (Including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)

5.2.4. Sustainability

The FAA is committed to making airports environmentally responsible with initiatives that affect facility operations, the aviation industry, and customers. Airports commonly follow the approach to sustainability codified by Airports Council International-North America, known as EONS, which take into account four key considerations when sustainability programs are designed and implemented:

- **E**conomic Viability
- **O**perational Efficiency
- **N**atural Resource Conservation
- **S**ocial Responsibility

Furthermore, the Florida Department of Transportation Aviation and Spaceports Office developed the Airport Sustainability Guidebook to lead sustainability at Florida airports. At its core, the guidebook provides a basic structure for developing, implementing, and monitoring sustainability initiatives at airports.

5.2.5. Best Planning Practices

Several best planning tenets were selected to determine the most responsible and implementable alternative within this AMP. These include:

- Flexibility to accommodate unforeseen change (e.g., increases or decreases in activity levels, changes to fleet mix, new users, etc.).
- Technically feasible (e.g., considers site constraints and other limitations).
- Conforms to the County's goals.

5.3. The Preferred Development Alternative

The selected preferred alternative at SEF encompasses the needs identified in the facility requirements as well as the goals and priorities of the Airport and corresponding stakeholders. **Figure 5-4** depicts the preferred development alternative. The following is a brief summary of the selected airside alternative for this iteration of the airport master plan.

5.3.1. Runway Improvements

The tangible runway improvements at SEF have been designed and planned for a number of years. However, in addition to the tangible improvements, other intangible improvements are being recommended for the Airport's secondary runway, Runway 14-32. Proposed runway modifications are as follows:

- Runway 1-19 extension to a total length of 7,000 feet;
- Runway 1-19 widening to a total 150 feet;
- Runway 19 displaced threshold to mitigate existing runway safety surface impacts;
- Runway 1 displaced threshold to mitigate existing runway safety surface impacts and to accommodate proposed future development;
- Change in Runway 14-32 classification to B-II-Small to reduce RPZ dimensions;
- Implementation of declared distances on Runway 14-32 to mitigate ROFA obstructions.

As discussed in previous sections of this chapter, these tangible runway improvements at SEF will safely accommodate the future fleet mix and further promote the growth of operations. The Airport's capability will be strengthened through the tangible enhancements that will be made to Runway1-19. Furthermore, the intangible adjustments to both runways will enhance the safety of all operators utilizing the airport and allow for overall safety compliance.

5.3.2. Taxiway Improvements

The existing taxiway system at SEF is proposed to be enhanced. These enhancements will promote capacity growth and accommodate for future proposed development on eastern portions of the airport property. Proposed taxiway enhancements are as follows:

- Removal of excessive pavement on Taxiway C at the intersection with Runway 1-19;
- Relocated Taxiway A4 connector;
- Runway 1-19 east full parallel taxiway (Future Taxiway B);
- Runway 14-32 north partial parallel taxiway (Future Taxiway E);
- Runway 14-32 south partial parallel taxiway (Future Taxiway D); and,
- Taxiway A extension up to proposed Runway 19 end.

Mitigating and enhancing the taxiway system will promote safety, compliance, and growth at the Airport. The primary supporting infrastructure to the Airport's runways, an accessible taxiway system will allow for the further development of the airport and to ensure the efficient ground operations of all aircraft. By constructing the east full parallel taxiway to Runway 1-19, the space between Runway 1-19 and Runway 14-32 can be readily developed to grow airside capabilities.

5.3.3. Landside Improvements

Due to the size of the Airport's property, there is substantial opportunity for both airside and landside development. The development features selected for the preferred alternative mainly come from previously analyzed and designed development. Proposed landside improvements are as follows:

- Eight new conventional hangars totalling 112,003 square feet with supporting infrastructure;
- Carroll Shelby Road addition;
- Challenger Drive extension;
- Catalyst site development;
- Commerce park development;
- Challenger Drive commerce plaza development;
- Sod Farm Pond relocation;
- Relocated perimeter canal;
- Relocated off-site drainage ditch; and,
- Realigned railroad track.

With the addition of Carroll Shelby Road, the eastern portion of the airport will be accessible to and accommodate increased traffic. The roadway addition will promote the growth of both the proposed commerce park and proposed catalyst site. Due to the proximity of the airfield to these specified sites, the development can be a blend of both aeronautical and non-aeronautical use. However, stormwater drainage enhancements are necessary to ensure that identified development and development areas do not negatively impact stormwater drainage capabilities in the event of a storm. Various areas have been identified for such stormwater drainage improvements to account for the identified development areas. Due to the proposed Runway 1-19 extension, multiple landside modifications must be conducted to mitigate impacts the extension may cause. Such modifications include the rail realignment, drainage ditch realignment, sod farm pond relocation, and perimeter canal realignment. All these modifications are necessary to accommodate the future proposed Runway 1-19 extension.

SUMMARY OF CHANGES

I. AIRSIDE - TANGIBLE

a. Runway 01/19 extension by 1,776' and widening to 150'
b. East-side full length parallel taxiway addition
c. Extension of existing Runway 01/19 full length parallel taxiway
d. Partial parallel taxiway to Runway 32 end
e. Relocation of taxiway connector
f. Removal of non-standard airfield pavement
g. Displaced thresholds added to Runways 01 and 19

II. AIRSIDE - INTANGIBLE

h. Removal of instrument departures from Runway 32 to remove 40:1 departure surface requirement
i. Change in Runway 14/32 ADG classification to B-II-Small to reduce RPZ dimensions
j. Implementation of declared distances on Runway 14/32 to mitigate ROFA obstruction

III. LANDSIDE

k. Four new conventional hangars totaling 81,603 sqft.
l. Four new conventional hangars totaling 40,400 sqft.
m. Challenger Drive extension
n. Carroll Shelby road addition
o. Catalyst Site development
p. Commerce Park development
q. Challenger Drive commerce complex

IV. OTHER

r. Non-Aeronautical Land
s. Re-aligned railroad track
t. Vegetation to be removed

LEGEND

DESCRIPTION	FUTURE
AIRFIELD PAVEMENT	
PAVEMENT TO BE REMOVED	
RUNWAY SAFETY AREA (RSA)	RSA
RUNWAY OBJECT FREE AREA (ROFA)	ROFA
RUNWAY PROTECTION ZONE (RPZ)	RPZ
HANGARS	
APRON	
LANDSIDE FACILITIES	
COMMERCE PARK & CATALYST SITE	
LANDSIDE ACCESS	
STORM WATER RETENTION PONDS	
RAILROAD RE-ALIGNMENT	
SOD FARM POND RELOCATION	
RELOCATED PERIMETER CANAL	
RELOCATED OFF-SITE DITCH	
VEGETATION TO BE REMOVED	

REVISIONS

DATE	DESCRIPTION

CLIENT

SEBRING AIRPORT AUTHORITY

PROJECT

AIRFIELD ALTERNATIVES

SEBRING REGIONAL AIRPORT (SEF)
SEBRING, FLORIDA

SHEET TITLE

DRAFT

FINAL PREFERRED ALTERNATIVE

ATKINS
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JOB NO.: 100055323
DRAWN: K.A.K
DESIGN: K.A.K
CHECKED: GF
DATE: FEBRUARY 2020

FIGURE 5-4

Airport Layout Plan

6. Airport Layout Plan

6.1. Introduction

The Airport Layout Plan (ALP) is a set of drawings that provides a graphical representation of the 20-year development plan formulated in this master plan. Each ALP can differ depending on the complexity of the airport and special focus areas. The ALP provides a blueprint for future airport development and should be used in conjunction with this master plan to gain a full understanding of the purpose and need for all development that has been identified.

The ALP is a requirement of 49 U.S.C. § 47107(a)(16). All development at the airport must follow the approved ALP to ensure safety, utility, and efficiency of the airport. The FAA requires that the ALP be kept up-to-date to ensure compliance with this law.

The following sheets are included in the ALP set. For clarity, all sheets presented in this chapter have been reduced to 11 inches by 17 inches and may not be to scale.

- Cover Sheet
- Existing Conditions
- Airport Layout Plan
- Airport Data Sheet
- Terminal Area Plan
- Inner Approach Plan & Profile
- Airport Airspace
- Departure Surface Drawing Sheets
- Airport Land Use Plan
- Exhibit "A" Airport Property Inventory Map

6.2. Cover Sheet

The cover sheet and provides baseline information regarding the ALP set that is contained therein. The cover sheet includes the official airport name, airport owner, associated city and state, the party responsible for preparation of the ALP set, an index of drawings, and graphical representation of the airport's regional location. The cover sheet for this ALP set proudly highlights the State of Florida and the Airport's location in Highlands County.

Error! Reference source not found. presents the ALP Cover Sheet.

6.3. Airport Data Sheet

The airport data sheet provides all key data related to the overall airport location, runways, taxiways, imaginary surfaces, navigational aids, lighting, declared distances, wind coverage data, and any modifications to airport design standards, if applicable. All tables included on the airport data sheet present existing and future data.

Wind data analyzed for this master plan was compiled from the National Oceanic and Atmospheric Administration (NOAA) Integrated Surface Database for a 10-year period (2010 to 2019) from the SEBRING RGNL weather station. The wind data was analyzed using the FAA Wind Analysis Tool located on the Airport Data and Information Portal (ADIP).

Error! Reference source not found. presents the Airport Data Sheet.

6.4. Existing Conditions

The existing conditions drawing presents the airport, and its supporting facilities, as they are today. The drawing includes all areas and infrastructure of the airport including but not limited to runways, taxiways, aprons, buildings, on-airport roadways, fencing, air traffic control tower, etc. Additionally, all imaginary surfaces are shown, including but not limited to the Runway Safety Area, Runway Object Free Area, Runway Protection Zone, Precision Approach Path Indicator Obstruction Clearance Surface, Approach and Departure Surfaces, Taxiway Safety Area, and Taxiway Object Free Area.

Error! Reference source not found. presents the Existing Conditions Sheet.

6.5. Airport Layout Plan

The Airport Layout Plan (ALP) drawing presents the planned airport development over the following 20-year period. The drawing includes all elements of the existing conditions drawing but adds all future development and associated imaginary surfaces and labels. The ALP drawing is required by statute to be up-to-date and include any proposed AIP or PFC funded projects. Following all development on airport property, the ALP should be reviewed and, if necessary, updated to reflect the recent change.

Error! Reference source not found. presents the Airport Layout Plan drawing.

6.6. Terminal Area Plan (TAP)

The Terminal Area Plan (TAP) provides greater detail of the airport's existing and planned terminal and apron areas. To better illustrate existing and future facilities, multiple TAP sheets are typically created. As the existing and planned terminal areas are spread about the airfield, four (4) terminal layout plans were necessary to show the full extents. Additional detail such as apron dimensions, annotations, and offsets between various design elements are presented within the terminal layout plans.

6.7. Inner Approach Plan & Profile

The inner approach plan and profile drawings present critical natural and man-made features parallel to the extended runway centerlines. The plan and profile drawings include the inner portion of the approach, up until the approach surface reaches at least 100-feet above threshold elevation. The sheets assist in identification of any potential obstructions that may impact the safe and efficient operation of aircraft.

Each runway end is represented in both plan view and profile view to provide a thorough display of data elements. The profile views include the elevation of the extended runway centerline and the critical ground underlying the approach surface. A representative icon for all traverse ways, vegetation, poles, towers, etc. is used to depict significant objects in both plan and profile. All objects identified on the inner approach plan and profile are detailed on the associated obstruction tables which are located on the corresponding sheet, and/or a supplemental data sheet. All objects within ten feet of penetrating any surface were considered "significant" and included in the sheets. Pre-set adjustments of 23 feet, 17 feet, 15 feet, and 10 feet were made to identify the potential maximum elevation of railroads, interstates, public roads, and private roads respectively. Traverse ways found to be insignificant to this study were omitted for clarity.

All data presented in these sheets was obtained by survey in June 2017.

6.8. Airport Airspace

The Airport Airspace Surfaces sheets depict the critical natural and man-made features surrounding the airport, outside of the inner approach. The sheets depict the imaginary surfaces presented in Title 14 CFR Part 77, *Safe, Efficient Use, and Preservation of Navigable Airspace*, in relation to the existing and future runway ends and airport elevation. Objects that may impact the safe and efficient operation of aircraft are identified, and further details are provided in obstruction data tables included on the corresponding sheet, and/or a supplemental data sheet. The airspace surfaces include the primary, approach, transitional, horizontal, and conical surfaces based on the most demanding category and type of existing, or planned, approach.

6.9. Departure Surface Drawing Sheets

The Departure Surface Drawings depict the critical natural and man-made features located within the 40:1 departure surface for each existing and planned runway end. All obstructions are further identified on data tables included on the corresponding sheet, and/or a supplemental data sheet. Similar to the inner approach and airport airspace surface sheets, identification of objects within the departure surface assist with mitigation of potential obstructions that may impact the safe and efficient operation of aircraft. The profile views include the elevation of the extended runway centerline and the critical ground underlying the departure surface. A representative icon for all traverse ways, vegetation, poles, towers, etc. is used to depict significant objects in both plan and profile. All objects within ten feet of penetrating the departure surface were considered “significant” and included in the sheets. Pre-set adjustments of 23 feet, 17 feet, 15 feet, and 10 feet were made to identify the potential maximum elevation of railroads, interstates, public roads, and private roads respectively. Traverse ways found to be insignificant to this study were omitted for clarity.

6.10. Airport Land Use Plan

The Airport Land Use Plan presents the on- and off-airport land uses surrounding the airport. Off-airport land uses were obtained from the City of Sebring and Highlands County. The land use map provides the airport, City, and County government an aid in future municipal planning efforts and zoning. Airports are encouraged to work with the neighboring City and County governments to ensure compatible land uses, especially in areas adjacent to or in the immediate vicinity of the airport to activities compatible with normal airport operations.

6.11. Exhibit “A” Airport Property Inventory Map

The Exhibit ‘A’ Airport Property Inventory Map provides an inventory of all parcels and easements that make up the dedicated airport property. The Exhibit ‘A’ documents how and when each parcel was acquired, the funding source used to acquire the property, or if the property was conveyed to the airport as Federal Surplus land or Government Property. The Exhibit ‘A’ also identifies any future land needed for airport development or for protection of the runway approaches. In addition to all parcels currently owned by the airport, the Exhibit ‘A’ must document all former parcels owned by the airport and when they were released/sold.

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AIRPORT LAYOUT PLAN

JULY 2020

PREPARED BY
ATKINS
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Tampa, Florida 33607
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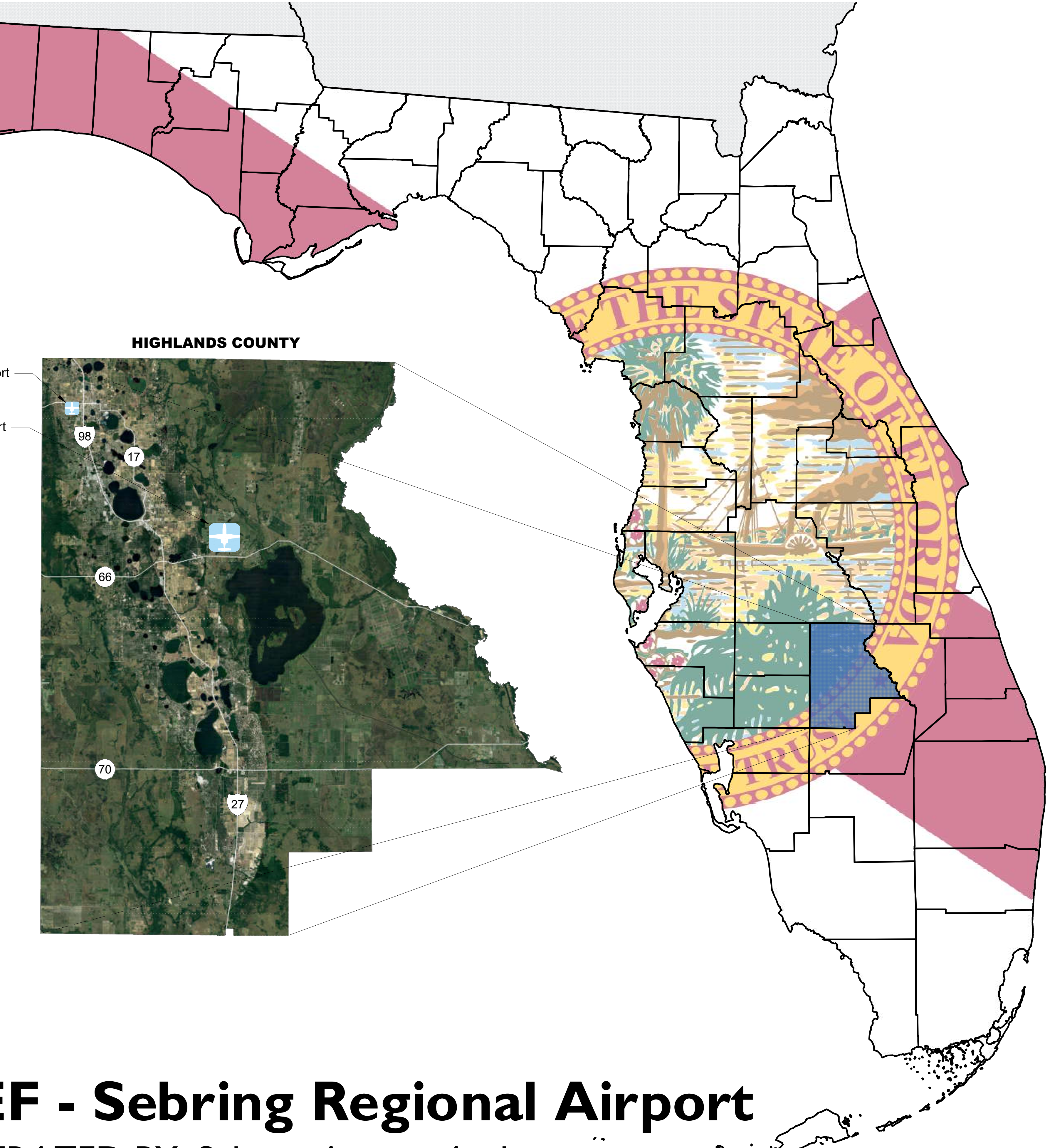


INDEX OF DRAWINGS

REVISIONS

REV	DATE	DESCRIPTION

AIRPORT SPONSOR APPROVAL

THIS AIRPORT DRAWING IS APPROVED BY: ______________________

(SIGNATURE) ______________________ DATE: ______________________

NAME: ______________________ TITLE: ______________________

SEBRING
MULTIMODAL LOGISTICS CENTER

SEF - Sebring Regional Airport

OPERATED BY: Sebring Airport Authority

DECLINATION 6° 21' W

DECEMBER 2019
ANNUAL RATE OF CHANGE
0° 5' W

0 400 800
Feet

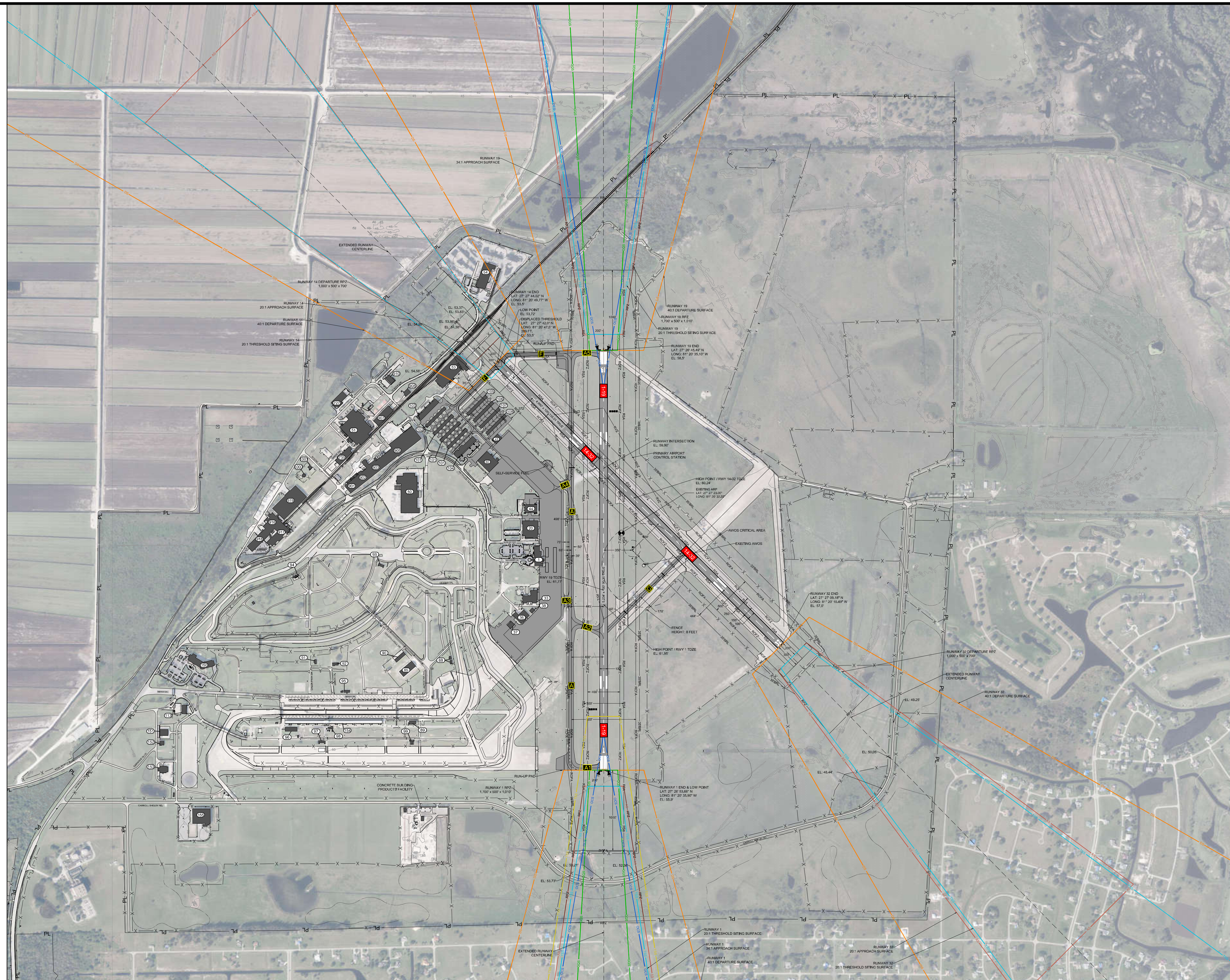
LEGEND

EXISTING	DESCRIPTION
	AIRPORT REFERENCE POINT
PL	PROPERTY LINE
35'BRL	BUILDING RESTRICTION LINE
RSA	RUNWAY SAFETY AREA
ROFA	RUNWAY OBJECT FREE AREA
ROFZ	RUNWAY OBSTACLE FREE ZONE
RPZ	RUNWAY PROTECTION ZONE
RVZ	RUNWAY VISIBILITY ZONE
TOFA	TAXIWAY OBJECT FREE AREA
TSA	TAXIWAY SAFETY AREA
AS	APPROACH SURFACE
TSS	THRESHOLD SITING SURFACE
GQS	GLIDESLOPE QUALIFICATION SURFACE
DS	DEPARTURE SURFACE
OCS	PAPI OBSTACLE CLEARANCE SURFACE
	TOPOGRAPHIC CONTOUR LINES
	TAXIWAYS AND RUNWAYS
	APRONS
X	FENCE[1]
	RAIL TRACKS
	ON-AIRPORT BUILDINGS
	THRESHOLD LIGHTS
	L-880 4 BOX PAPI
	REIL
	WINDCONE
	SEGMENTED CIRCLE
	SURVEY MONUMENT
	STORM WATER INFRASTRUCTURE
N/A	NON-AERONAUTICAL LAND

1/ EXISTING FENCE HEIGHT VARIES IN CERTAIN LOCATIONS

EXISTING BUILDING NUMBERS

NO.	DESCRIPTION	ELEV. AGL/MSL'
1	FBO TERMINAL	39.1'/100.7'
13	EMERGENCY RESPONSE	10.6'/72.2'
17	T-HANGAR	15.2'/76.8'
20	COMMERCIAL HANGAR	29.9'/91.5'
33	LOCKWOOD CORPORATE HANGAR	19.7'/81.3'
36	COMMERCIAL HANGAR	21.8'/83.4'
37	SHADE HANGAR	14.6'/76.2'
43	COMMERCIAL HANGAR	15.3'/76.9'
44	GROUP 44 / COMMERCIAL	26.3'/87.9'
50	LESCO WAREHOUSE	27.3'/88.9'
51	LESCO / INDUSTRIAL	79.4'/141'
53	FUNDER / INDUSTRIAL	17.4'/79'
85	SKIP BARBER RACING	27.3'/88.9'
90	SKIP BARBER RACING	26.3'/87.9'
91	HOUSE	10.4'/72'
92	HOUSE	10.4'/72'
100	T-HANGARS	9.6'/71.2'
101	T-HANGARS (1-30)	12.9'/74.5'
102	T-HANGARS (31-40)	12.2'/73.8'
103	COMMERCIAL HANGAR	30.1'/91.7'
104	COMMERCIAL HANGAR	31.1'/92.7'
105	T-HANGAR	10.9'/72.5'
106	T-HANGAR	11.2'/72.8'
107	T-HANGAR	11.5'/73.1'
108	T-HANGAR	11.8'/73.4'
113	SIR HEADQUARTERS	11.2'/72.8'
150	HOTEL	56.5'/118.1'
151	PANOZ RACING SCHOOL	18.2'/79.8'
152	SCCA CFR	12.7'/74.3'
153	SIR MAINTENANCE	15.2'/76.8'
154	SIR SUITES	59.6'/121.2'
727	INDUSTRIAL	13.2'/74.8'
732	SAA MAINTENANCE BLDG	11.5'/73.1'
734	MAINTENANCE / STORAGE	21.8'/83.4'
735	INDUSTRIAL	39.1'/100.7'
901	INDUSTRIAL	26'/87.6'
902	INDUSTRIAL	26'/87.6'
903	INDUSTRIAL	26.3'/87.9'
907	LESCO / INDUSTRIAL	26.3'/87.9'
908	LESCO / INDUSTRIAL	23.2'/84.8'
910	SAA WASTEWATER PLANT	12.7'/74.3'
913	INDUSTRIAL	18.3'/79.9'
916	LIN PAC / INDUSTRIAL	28.9'/90.5'
917	LINE PAC / INDUSTRIAL	18.3'/79.9'
918	LINE PAC / INDUSTRIAL	17.6'/79.2'
919	LINE PAC / INDUSTRIAL	34'/95.6'
999	INDUSTRIAL	18.1'/79.7'
1001	SAA UTILITY / PUMPHOUSE	9.7'/71.3'
1002	SAA UTILITY / GENERATOR	15.7'/77.3'
1003	SAA WATER STORAGE TANK	7.4'/69'
2003	HANCORE / INDUSTRIAL	28.1'/89.7'



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SHEET TITLE: EXISTING FACILITIES

PROJECT: AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT: SEBRING MULTIMODAL LOGISTICS CENTER

REVISIONS

DATE	DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

SHEET 02 OF 22

DECLINATION 6° 21' W

DECEMBER 2019
ANNUAL RATE OF CHANGE
0° 5' W

0 400 800 Feet

LEGEND

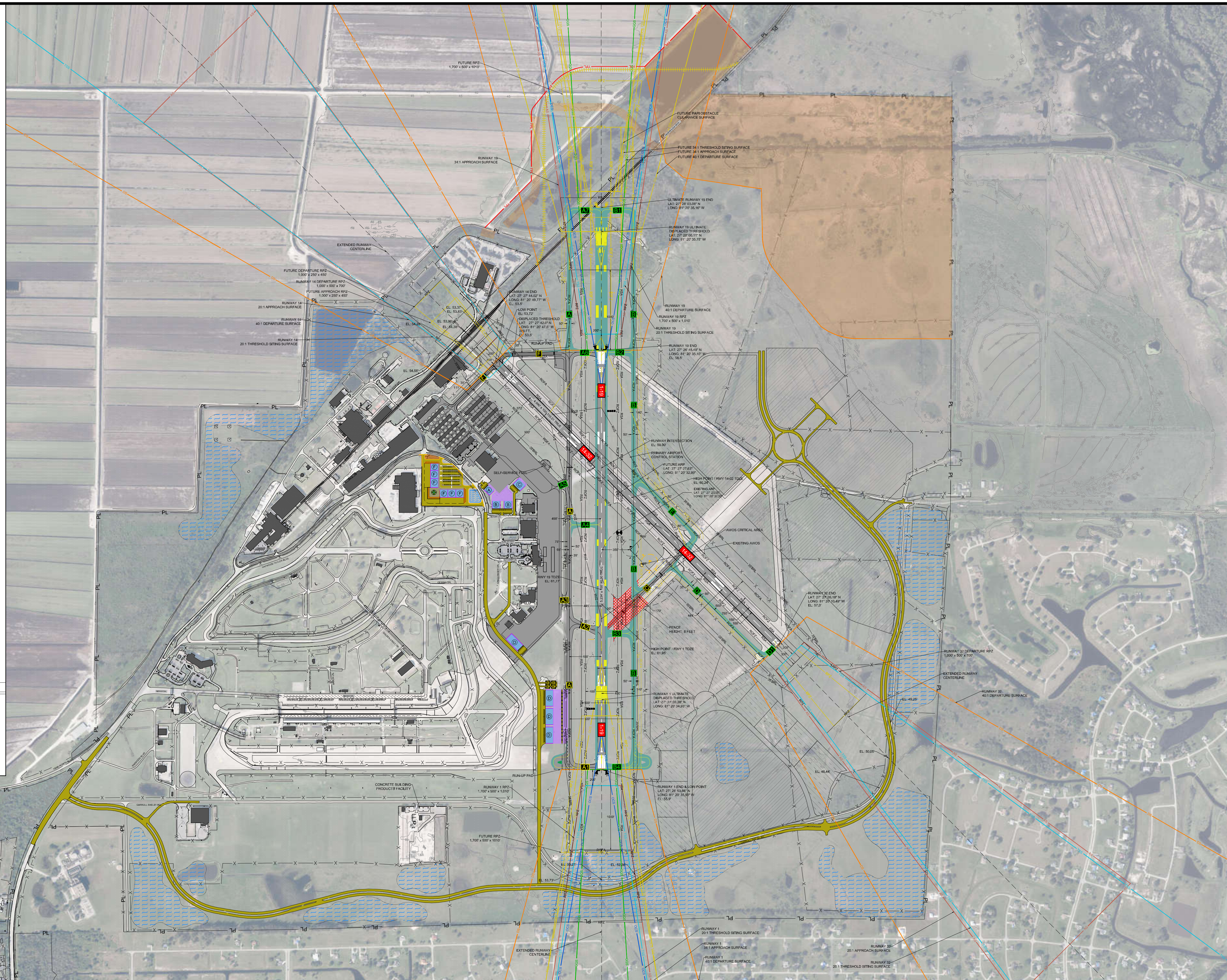
EXISTING	FUTURE	DESCRIPTION
		AIRPORT REFERENCE POINT
PL	FPL	PROPERTY LINE
35'BRL	SAME	BUILDING RESTRICTION LINE
RSA	RSA	RUNWAY SAFETY AREA
ROFA	ROFA	RUNWAY OBJECT FREE AREA
ROFZ	ROFZ	RUNWAY OBSTACLE FREE ZONE
RPZ	RPZ	RUNWAY PROTECTION XONE
RVZ	RVZ	RUNWAY VISIBILITY ZONE
TOFA	TOFA	TAXIWAY OBJECT FREE AREA
TSA	TSA	TAXIWAY SAFETY AREA
AS	AS	APPROACH SURFACE
TSS	TSS	THRESHOLD SITING SURFACE
GQS	GQS	GLIDESLOPE QUALIFICATION SURFACE
DS	DS	DEPARTURE SURFACE
OCS	OCS	PAPI OBSTACLE CLEARANCE SURFACE
20'	SAME	TOPOGRAPHIC CONTOUR LINES
A	A	TAXIWAY NOMENCLATURE
N/A		TAXIWAY AND RUNWAY PAVEMENT
N/A		APRONS
N/A		PUBLIC ROADS
N/A		PAVEMENT TO BE REMOVED
N/A		PLANNED COMMERCIAL DEVELOPMENT
N/A		FUTURE AERONAUTICAL DEVELOPMENT
X	TBD	FENCE[2]
		RAIL TRACKS
N/A		ON-AIRPORT BUILDINGS
		THRESHOLD LIGHTS
		L-880 4 BOX PAPI
		REIL
		WINDCONE
		SEGMENTED CIRCLE
	SAME	SURVEY MONUMENT
		STORM WATER INFRASTRUCTURE
N/A		NON-AERONAUTICAL LAND

1/ TO BE DETERMINED
2/ EXISTING FENCE HEIGHT VARIES IN CERTAIN LOCATIONS

FUTURE BUILDINGS

ID.	DESCRIPTION
A	8,000 SQFT HANGAR
B	10,000 SQFT HANGAR
C	12,400 SQFT HANGAR
D	20,400 SQFT HANGAR
F	LANDSIDE PLAZA

FAA APPROVAL



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SHEET TITLE
AIRPORT LAYOUT PLAN

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING
MULTIMODAL LOGISTICS CENTER

REVISIONS

DATE	DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

SHEET 03 OF 22

M:\05_Projects\Sebring (SEF)\100055323 SEF AMPU\ALP\02-03_SEF_EX-ALP.dwg Jul15,2020 – 10:43am Plotted By: KRIE4747

AIRPORT DATA TABLE

ITEM		EXISTING	PROPOSED
AIRPORT REFERENCE CODE (ARC)		C-II	D-III
MEAN MAX. TEMP OF HOTTEST MONTH		91.5° ; JULY	SAME
AIRPORT ELEVATION (MSL)		61.6'	SAME
NAVAIDS		GPS / BEACON	
AIRPORT REFERENCE POINT	LATITUDE	27° 27' 23.00"" N	27° 27' 27.63" N
	LONGITUDE	081° 20' 32.60" W	081° 20' 32.99" W
MISC. FACILITIES		TAXIWAY LIGHTING, LIGHTED WIND CONE, AWOS	
CRITICAL AIRCRAFT		GULFSTREAM G150	GULFSTREAM GV
WINGSPAN		55.58'	93.50'
MAIN GEAR WIDTH/COCKPIT TO MAIN GEAR		11.15' / 20.66'	16.67' / 43.5'
APPROACH SPEED		124 KTS	140 KTS
MAGNETIC VARIATION (MARCH 2020)[1]		6° 22' W	0°5' WEST PER YEAR
NPIAS SERVICE LEVEL/ROLE		GA/REGIONAL	SAME
STATE EQUIVALENT SERVICE LEVEL		GA	SAME

NOTE:
1/ SOURCE: WWW.NGDC.NOAA.GOV

RUNWAY DATA

ITEM		RUNWAY 1 / 19 EXISTING	RUNWAY 1 / 19 PROPOSED	RUNWAY 14 / 32 EXISTING	RUNWAY 14 / 32 PROPOSED
DESIGN AIRCRAFT		GULFSTREAM 150	GULFSTREAM V	CITATION 550	CITATION 550
RUNWAY DESIGN CODE (RDC)		C-II	D-III	B-II	B-II-SMALL
RUNWAY APPROACH REFERENCE CODE (APRC)		C-IV-5000 C-V-5000	SAME	D-VI-5000	SAME
RUNWAY DEPARTURE REFERENCE CODE (DPRC)		C-IV C-V	SAME	D/VI	SAME
PAVEMENT STRENGTH[1]	SINGLE WHEEL	83,000	SAME	30,000	SAME
	DUAL WHEEL	126,000	SAME	45,000	SAME
	2D WHEELS IN TANDEM	N/A	SAME	N/A	SAME
	2D WHEELS IN DOUBLE TANDEM	N/A	SAME	N/A	SAME
	PCN	32/F/A/X/T	SAME	9/F/B/Y/T	SAME
RUNWAY SURFACE TYPE		ASPHALT	SAME	ASPHALT	SAME
RUNWAY SURFACE TREATMENT		GROOVED	SAME	GROOVED	SAME
% EFFECTIVE GRADIENT[2]		0.05%	SAME	0.07%	SAME
% MAXIMUM GRADIENT		1.50%	SAME	2.00%	SAME
% WIND COVERAGE (ALL)	10.5 KNOTS	94.24%	SAME	94.52%	SAME
	13.0 KNOTS	96.97%	SAME	97.07%	SAME
	16.0 KNOTS	99.33%	SAME	99.26%	SAME
	20.0 KNOTS	99.87%	SAME	99.81%	SAME
RUNWAY LENGTH		5,234'	7,000'	4,990'	SAME
RUNWAY WIDTH		100'	150'	100'	SAME
BLAST PAD LENGTH		N/A	SAME	N/A	SAME
BLAST PAD WIDTH		N/A	SAME	N/A	SAME
DISPLACED THRESHOLD		N/A	870' / 300'	289' / N/A	SAME
THRESHOLD ELEVATION		55.9' / 58.5'	SAME	53.5' 57.0'	SAME
RUNWAY SAFETY AREA	BEYOND RUNWAY END	1,000'	SAME	300'	SAME
	WIDTH	500'	SAME	150'	SAME
RUNWAY END COORDINATES[3]	LATITUDE	27° 26' 53.66" N / 27° 27' 45.49" N	SAME / 27° 28' 03.08" N	27° 27' 44.02" N / 27° 27' 09.18" N	SAME
	LONGITUDE	081° 20' 34.90" W / 081° 20' 35.10" W	SAME / 081° 20' 35.16" W	081° 20' 49.77" W / 081° 20' 10.49" W	SAME
ELEVATIONS OF RUNWAY END (NAVD88)		55.9' / 58.5'	SAME	53.5' / 57.0'	SAME
RUNWAY LIGHTING		MIRL/REIL	SAME	N/A	SAME
RUNWAY PROTECTION ZONE	LENGTH	1,700'	SAME	1,000'	1,000'
	INNER WIDTH	500'	SAME	500'	250'
	OUTER WIDTH	1,010'	SAME	700'	450'
MARKINGS		NON-PRECISION	SAME	VISUAL	SAME
PART 77 APPROACH CATEGORY (SLOPE)		34:1	SAME	20:1	SAME
FAR PART 77 APPROACH TYPE		NON-PRECISION	SAME	NON-PRECISION	SAME
APPROACH VISIBILITY MINIMUMS		1 MILE / > 1 MILE	SAME	1 MILE	SAME
AERONAUTICAL SURVEY REQUIRED FOR APPROACH		VGS / NVGS	NVGS	NVGS	SAME
RUNWAY DEPARTURE SURFACE		YES	SAME	YES	YES / YES
RUNWAY OFA	BEYOND RUNWAY END	1,000'	SAME	300'	SAME
	WIDTH	800'	SAME	500'	SAME
RUNWAY OFZ	BEYOND RUNWAY END	200'	SAME	200'	SAME
	WIDTH	400'	SAME	250'	SAME
INNER APPROACH OFZ		NO	SAME	NO	SAME
INNER TRANSITIONAL OFZ		NO	SAME	NO	SAME
PRECISION OFZ		NO	SAME	NO	SAME
THRESHOLD SITING SURFACE[4]		RUNWAY TYPE 4	SAME	RUNWAY TYPE 4	RUNWAY TYPE 4
NAVIGATIONAL AIDS		GPS	SAME	GPS	SAME
VISUAL AIDS		PAPI-4L	SAME	N/A	SAME
TOUCHDOWN ZONE ELEVATION (TDZE)		61.95' / 61.77'	SAME	60.24' / 60.24'	SAME
VERTICAL & HORIZONTAL DATUM		NAVD88 / NAD83 EAST FL	SAME	NAVD88 / NAD83 EAST FL	SAME

NOTES:
1/ PAVEMENT STRENGTH AND PCN VALUES WERE PROVIDED IN THE STATEWIDE PAVEMENT CLASSIFICATION NUMBER DEVELOPMENT PROGRAM COMPLETED FOR SEF IN FEBRUARY 2017 BY THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) AVIATION AND SPACEPORTS OFFICE (ASO).
2/ ALL RUNWAYS MEET LINE-OF-SIGHT REQUIREMENTS.
3/ ALL LATITUDE AND LONGITUDE COORDINATES ARE DEPICTED IN NAD83 AND NAVD88 COORDINATE SYSTEMS. VERTICAL CONTROL DATUM IS DEPICTED IN NAVD88.
4/ SEE INNER APPROACH SHEETS FOR TSS PENETRATIONS. TSS DIMENSIONAL STANDARDS WERE UPDATED BY FAA ENGINEERING BRIEF NO 99 IN SEPTEMBER 2018.

TAXIWAY/TAXILANE DATA

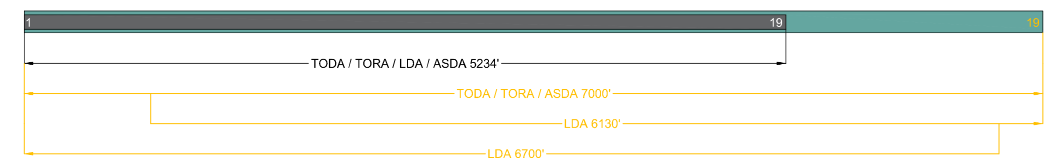
TAXIWAY / TAXILANE	A EX	A PROP	B PROP	C EX	C PROP	D PROP	E PROP	F EX	F PROP
TAXIWAY DESIGN GROUP	3	SAME	3	3	SAME	2	3	2	SAME
TAXIWAY & TAXILANE WIDTH	50'	SAME	50'	50'	SAME	35'	50'	35'	SAME
TAXIWAY EDGE SAFETY MARGIN	10'	SAME	10'	10'	SAME	7.5'	10'	7.5'	SAME
TAXIWAY SHOULDER WIDTH	N/A	SAME	N/A	N/A	SAME	N/A	N/A	N/A	SAME
AIRPLANE DESIGN GROUP	III	SAME	III	III	N/A	II	III	II	N/A
TAXIWAY & TAXILANE SAFETY AREA WIDTH	118'	SAME	118'	118'	SAME	79'	118'	79'	SAME
TAXIWAY OBJECT FREE AREA	186'	SAME	186'	186'	SAME	131'	186'	131'	SAME
TAXIWAY TO TAXIWAY / TAXILANE SEPARATION	152'	SAME	152'	152'	SAME	105'	152'	105'	SAME
TAXIWAY / TAXILANE LIGHTING	MITL	SAME	MITL	N/A	SAME	N/A	MITL	N/A	SAME

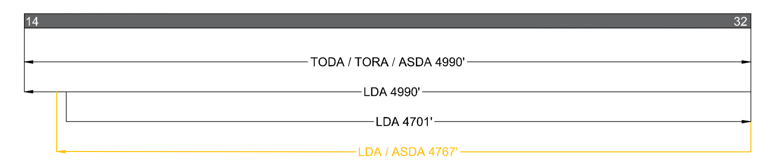
DECLARED DISTANCES - EXISTING

	TODA	TORA	LDA	ASDA
RUNWAY 1	5,234'	5,234'	5,234'	5,234'
RUNWAY 19	5,234'	5,234'	5,234'	5,234'
RUNWAY 14	4,990'	4,990'	4,701'	4,990'
RUNWAY 32	4,990'	4,990'	4,990'	4,990'

DECLARED DISTANCES - FUTURE

	TODA	TORA	LDA	ASDA
RUNWAY 1	7,000'	7,000'	6,130'	7,000'
RUNWAY 19	7,000'	7,000'	6,700'	7,000'
RUNWAY 14	4,990'	4,990'	4,701'	4,990'
RUNWAY 32	4,990'	4,990'	4,767'	4,767'

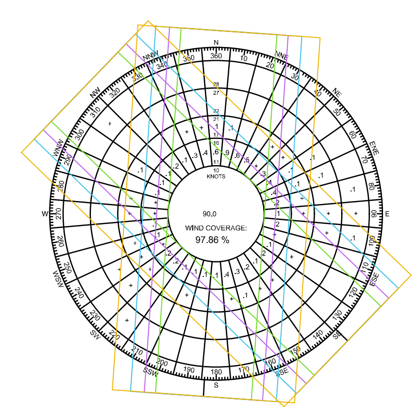




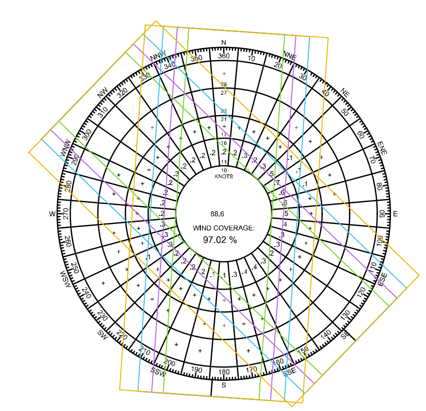
MODIFICATIONS TO STANDARDS

APPROVAL DATE	AIRSPACE CASE	STANDARD TO BE MODIFIED	DESCRIPTION
TBD	TBD	"THE OFZ CLEARING STANDARD PRECLUDES AIRCRAFT AND OTHER OBJECT PENETRATIONS, EXCEPT FOR FRANGIBLE NAVAIDS THAT NEED TO BE LOCATED IN THE OFZ BECAUSE OF THEIR FUNCTION."	THE ACCESS ROAD TO THE FUNDER BUILDING AND AIRPORT PERIMETER FENCE CURRENTLY RUN THROUGH THE PORTION OF RUNWAY 14/32 ROFZ THAT EXTENDS BEYOND THE RUNWAY 14.
TBD	TBD		TBD
TBD	TBD	TBD	TBD

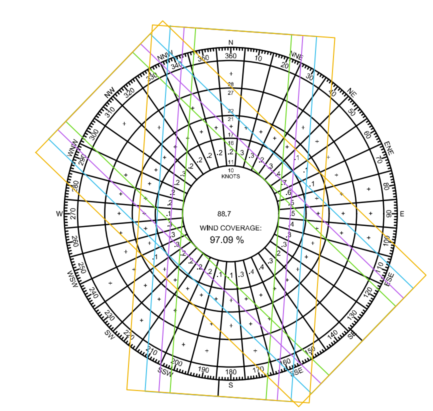
IFR WIND COVERAGE



VFR WIND COVERAGE



ALL WEATHER WIND COVERAGE



IFR WIND COVERAGE

CROSSWIND COMPONENT	RUNWAY 1/19	RUNWAY 14/32	COMBINED COVERAGE
10.5 KTS	96.46%	94.75%	97.86%
13 KTS	97.81%	97.07%	98.79%
16 KTS	98.85%	98.97%	99.27%
20 KTS	99.34%	99.47%	99.62%

VFR WIND COVERAGE

CROSSWIND COMPONENT	RUNWAY 1/19	RUNWAY 14/32	COMBINED COVERAGE
10.5 KTS	94.07%	94.46%	97.02%
13 KTS	96.91%	97.05%	98.94%
16 KTS	99.37%	99.27%	99.78%
20 KTS	99.91%	99.84%	99.98%

ALL WEATHER WIND COVERAGE

CROSSWIND COMPONENT	RUNWAY 1/19	RUNWAY 14/32	COMBINED COVERAGE
10.5 KTS	94.24%	94.52%	97.09%
13 KTS	96.97%	97.07%	98.93%
16 KTS	99.33%	99.26%	99.74%
20 KTS	99.87%	99.81%	99.95%

NOTES:
1/ WIND DATA DERIVED FROM NOAA'S INTEGRATED SURFACE DATABASE (ISD); COVERING YEARS 2010 - 2019.
2/ WIND ANALYSIS COMPLETED MARCH 2020.
3/ RUNWAY TRUE ORIENTATION USED FOR ANALYSIS, SEE A/C 150/5300-13A, FIGURE A-24.

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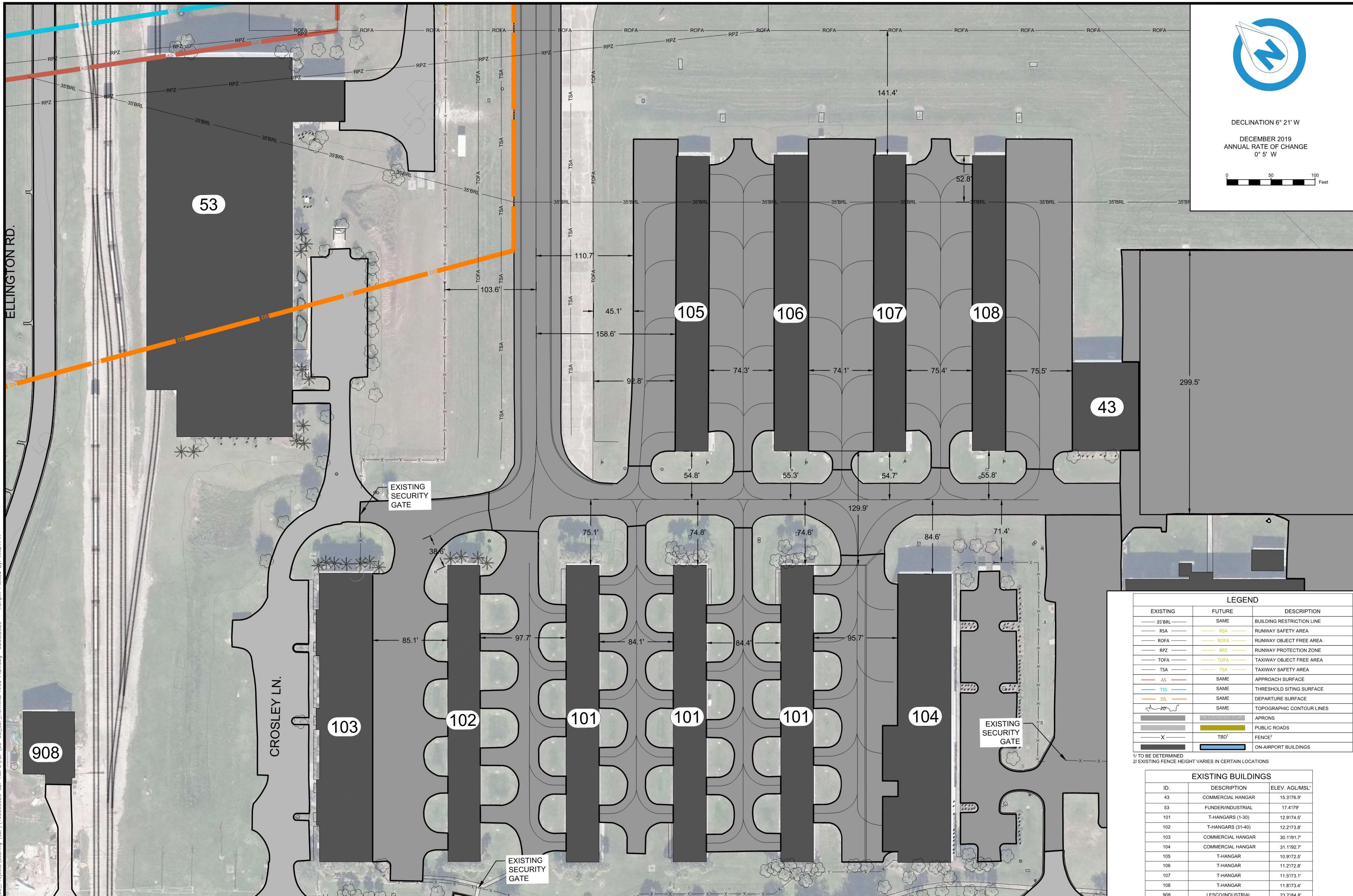
SHEET TITLE
DATA SHEET

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING MULTIMODAL LOGISTICS CENTER

REVISIONS	
DATE	DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH, JDH
DATE: JULY 2020



LEGEND

EXISTING	FUTURE	DESCRIPTION
35'BRL	SAME	BUILDING RESTRICTION LINE
RSA	RSA	RUNWAY SAFETY AREA
ROFA	ROFA	RUNWAY OBJECT FREE AREA
RPZ	RPZ	RUNWAY PROTECTION ZONE
TOFA	TOFA	TAXIWAY OBJECT FREE AREA
TSA	TSA	TAXIWAY SAFETY AREA
AS	SAME	APPROACH SURFACE
TSS	SAME	THRESHOLD SITING SURFACE
DS	SAME	DEPARTURE SURFACE
20'	SAME	TOPOGRAPHIC CONTOUR LINES
		APRONS
		PUBLIC ROADS
X	TBD[1]	FENCE[2]
		ON-AIRPORT BUILDINGS

1/ TO BE DETERMINED
2/ EXISTING FENCE HEIGHT VARIES IN CERTAIN LOCATIONS

EXISTING BUILDINGS

ID.	DESCRIPTION	ELEV. AGL/MSL'
43	COMMERCIAL HANGAR	15.3'/76.9'
53	FUNDER/INDUSTRIAL	17.4'/79'
101	T-HANGARS (1-30)	12.9'/74.5'
102	T-HANGARS (31-40)	12.2'/73.8'
103	COMMERCIAL HANGAR	30.1'/91.7'
104	COMMERCIAL HANGAR	31.1'/92.7'
105	T-HANGAR	10.9'/72.5'
106	T-HANGAR	11.2'/72.8'
107	T-HANGAR	11.5'/73.1'
108	T-HANGAR	11.8'/73.4'
908	LESCO/INDUSTRIAL	23.2'/84.8'

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SHEET TITLE
TERMINAL AREA PLAN 1

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING
MULTIMODAL LOGISTICS CENTER

REVISIONS

DATE	DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

SHEET 05 OF 22

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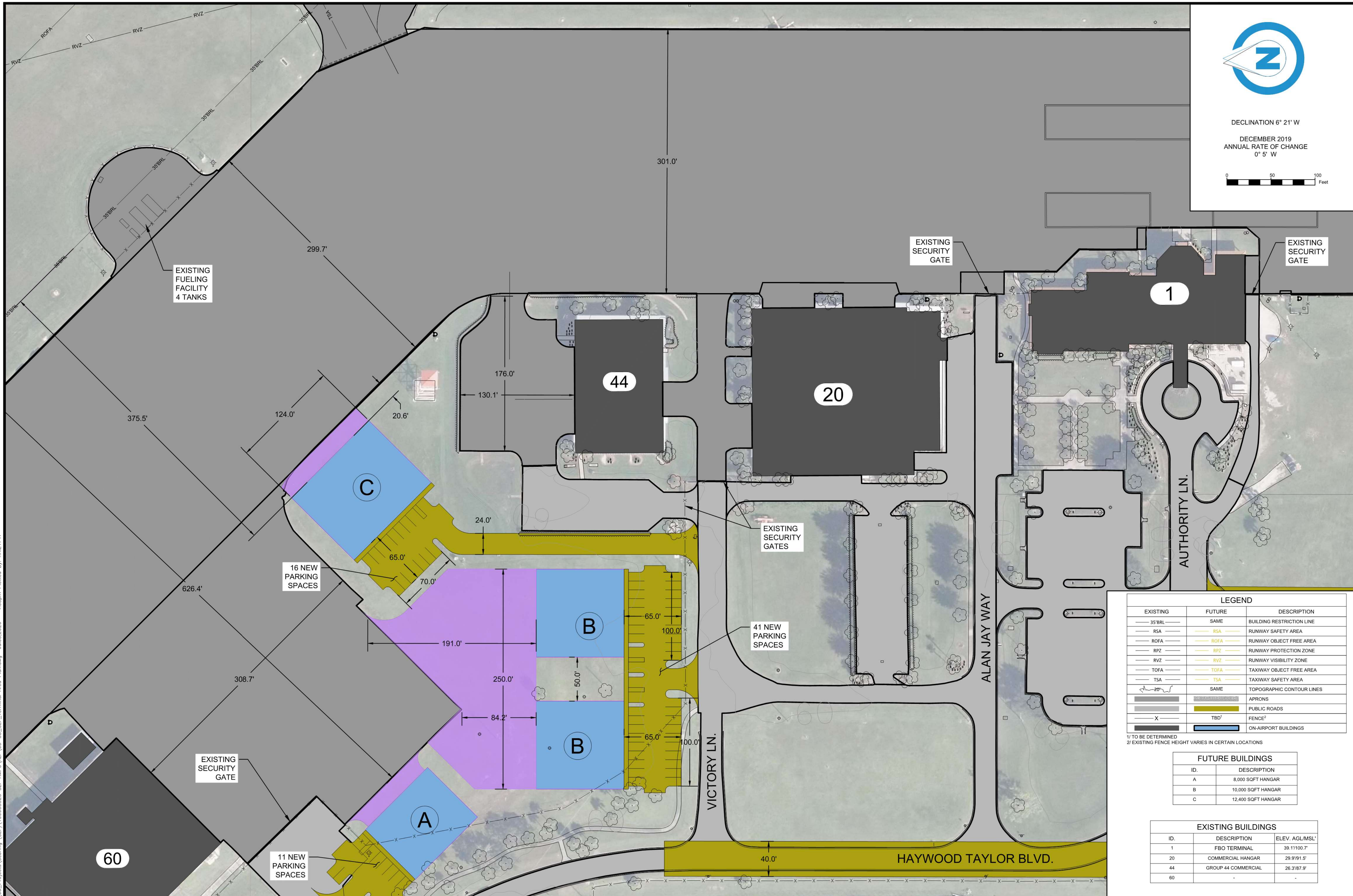

LEGEND

EXISTING	FUTURE	DESCRIPTION
35'BRL	SAME	BUILDING RESTRICTION LINE
RSA	RSA	RUNWAY SAFETY AREA
ROFA	ROFA	RUNWAY OBJECT FREE AREA
RPZ	RPZ	RUNWAY PROTECTION ZONE
RVZ	RVZ	RUNWAY VISIBILITY ZONE
TOFA	TOFA	TAXIWAY OBJECT FREE AREA
TSA	TSA	TAXIWAY SAFETY AREA
20'	SAME	TOPOGRAPHIC CONTOUR LINES
		APRONS
		PUBLIC ROADS
X	TBD[1]	FENCE[2]
		ON-AIRPORT BUILDINGS

1/ TO BE DETERMINED
2/ EXISTING FENCE HEIGHT VARIES IN CERTAIN LOCATIONS

FUTURE BUILDINGS

ID.	DESCRIPTION
A	8,000 SQFT HANGAR
B	10,000 SQFT HANGAR
C	12,400 SQFT HANGAR

EXISTING BUILDINGS

ID.	DESCRIPTION	ELEV. AGL/MSL'
1	FBO TERMINAL	39.1'/100.7'
20	COMMERCIAL HANGAR	29.9'/91.5'
44	GROUP 44 COMMERCIAL	26.3'/87.9'
60	-	-

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SHEET TITLE
TERMINAL AREA PLAN 2

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING
MULTIMODAL LOGISTICS CENTER

REVISIONS	
DATE	DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

LEGEND		
EXISTING	FUTURE	DESCRIPTION
35'BRL	SAME	BUILDING RESTRICTION LINE
RSA	RSA	RUNWAY SAFETY AREA
ROFA	ROFA	RUNWAY OBJECT FREE AREA
RPZ	RPZ	RUNWAY PROTECTION ZONE
TOFA	TOFA	TAXIWAY OBJECT FREE AREA
TSA	TSA	TAXIWAY SAFETY AREA
20'	SAME	TOPOGRAPHIC CONTOUR LINES
		APRONS
		PUBLIC ROADS
X	TBD[1]	FENCE[2]
		ON-AIRPORT BUILDINGS

1/ TO BE DETERMINED
2/ EXISTING FENCE HEIGHT VARIES IN CERTAIN LOCATIONS

FUTURE BUILDINGS	
ID.	DESCRIPTION
D	20,400 SQFT HANGAR

EXISTING BUILDINGS		
ID.	DESCRIPTION	ELEV. AGL/MSL'
33	LOCKWOOD CORP. HANGAR	19.7'/81.3'
36	COMMERCIAL HANGAR	21.8'/83.4'
37	SHADE HANGAR	14.6'/76.2'
38	-	-

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SHEET TITLE
TERMINAL AREA PLAN 3

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING
MULTIMODAL LOGISTICS CENTER

REVISIONS
DATE | DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

SHEET 07 OF 22

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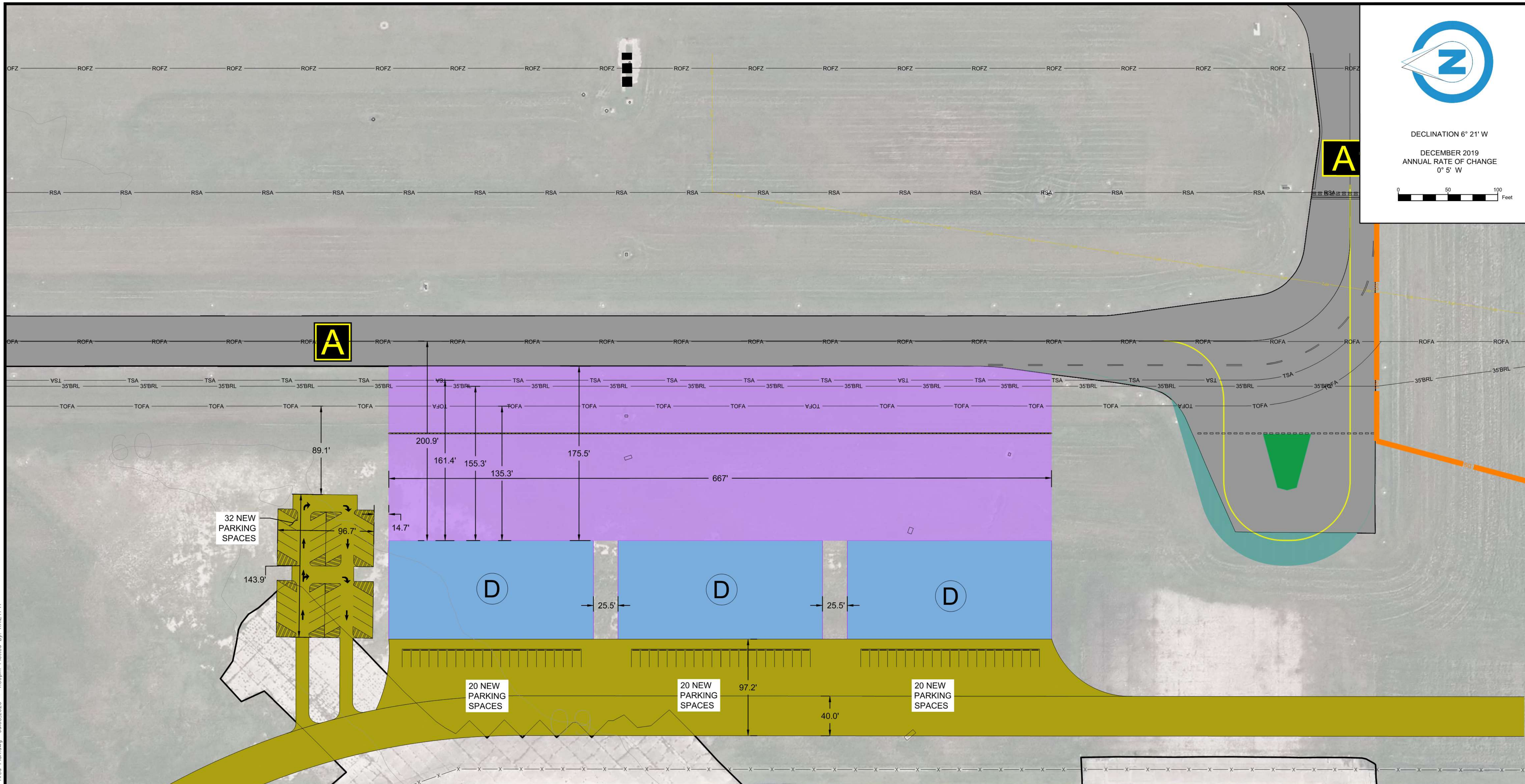

LEGEND

EXISTING	FUTURE	DESCRIPTION
35'BRL	SAME	BUILDING RESTRICTION LINE
RSA	RSA	RUNWAY SAFETY AREA
ROFA	ROFA	RUNWAY OBJECT FREE AREA
RPZ	RPZ	RUNWAY PROTECTION ZONE
TOFA	TOFA	TAXIWAY OBJECT FREE AREA
TSA	TSA	TAXIWAY SAFETY AREA
DS	SAME	DEPARTURE SURFACE
20'	SAME	TOPOGRAPHIC CONTOUR LINES
		APRONS
		PUBLIC ROADS
X	TBD	FENCE[2]
		ON-AIRPORT BUILDINGS

1/ TO BE DETERMINED
2/ EXISTING FENCE HEIGHT VARIES IN CERTAIN LOCATIONS

FUTURE BUILDINGS

ID.	DESCRIPTION
D	20,400 SQFT HANGAR

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SHEET TITLE
TERMINAL AREA PLAN 4

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING
MULTIMODAL LOGISTICS CENTER

REVISIONS

DATE	DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

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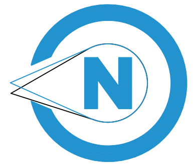


DECLINATION 6° 21' W

DECEMBER 2019
ANNUAL RATE OF CHANGE
0° 5' W

HORIZONTAL SCALE

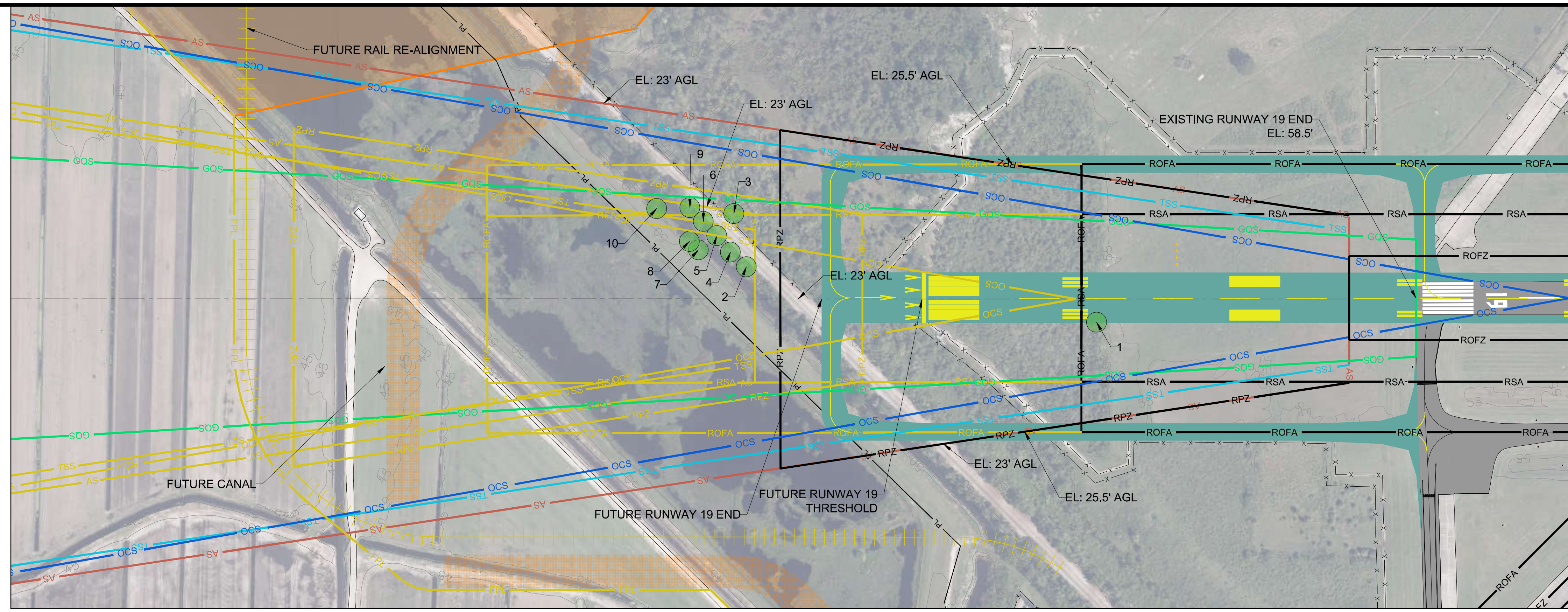
VERTICAL SCALE

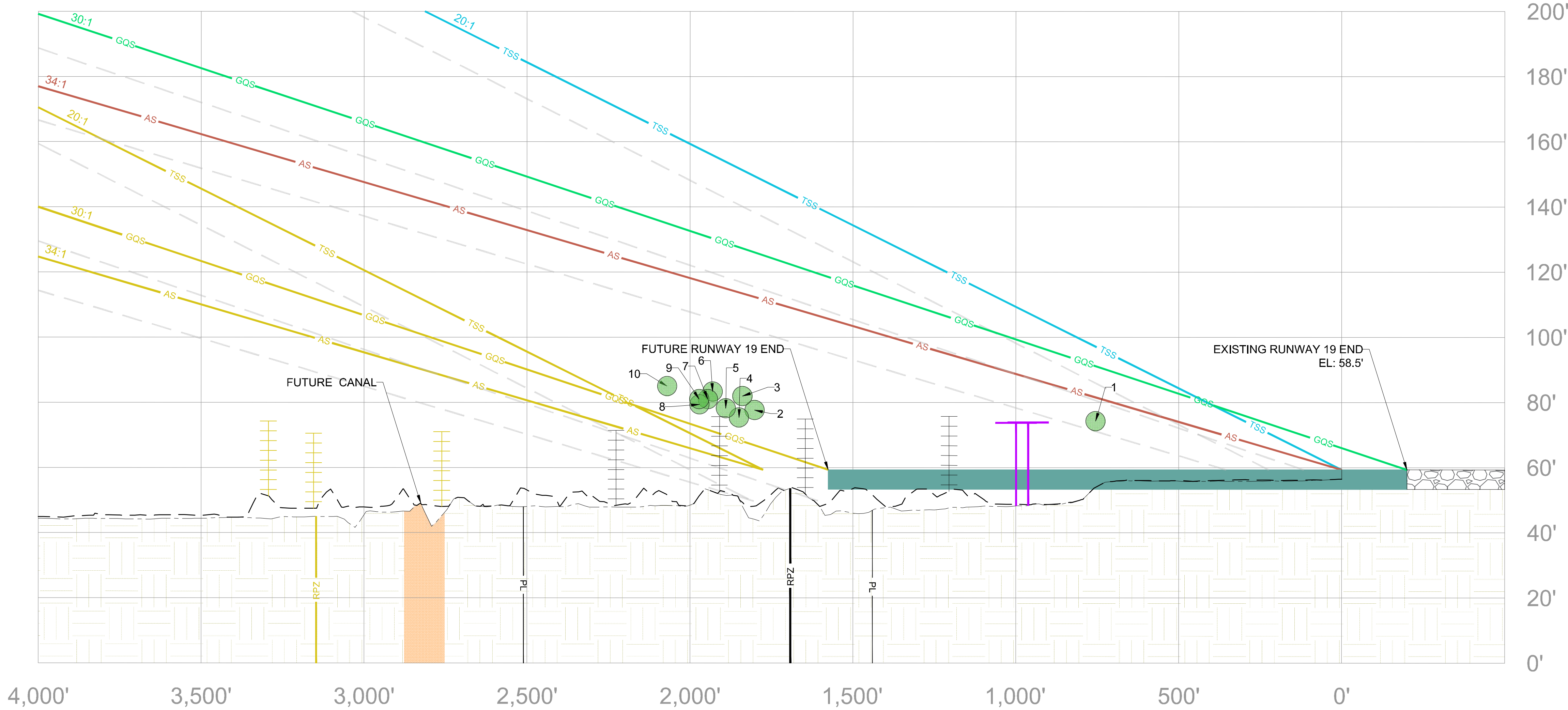
LEGEND

EXISTING	FUTURE/PROPOSED	DESCRIPTION
PL	FPL	PROPERTY LINE
RSA	RSA	RUNWAY SAFETY AREA
ROFA	ROFA	RUNWAY OBJECT FREE AREA
ROFZ	ROFZ	RUNWAY OBSTACLE FREE ZONE
RPZ	RPZ	RUNWAY PROTECTION ZONE
AS	AS	APPROACH SURFACE
TSS	TSS	THRESHOLD SITING SURFACE
GQS	GQS	GLIDESLOPE QUALIFICATION SURFACE
OCS	OCS	PAPI OBSTACLE CLEARANCE SURFACE
	SAME	EXTENDED RUNWAY CENTERLINE
	SAME	CRITICAL GROUND PROFILE[1]
20'	SAME	TOPO CONTOUR LINES
		PAVED AIRFIELD SURFACES
	N/A	AIRPORT BUILDINGS
N/A		NON-AERONAUTICAL LAND
N/A		STORM WATER RETENTION POND
X	TBD	FENCE
		RAIL TRACKS
	SAME	VEGETATION OBSTACLES
	SAME	OTHER OBSTACLES
	SAME	TAXIWAY INTERSECTIONS[2]
		TRAVERSEWAY INTERSECTIONS
N/A		ROAD

1/ SUPPLEMENTAL TOPOGRAPHIC DATA USED IN THIS STUDY WAS DERIVED FROM ASTER GDEM V2 30M DEM DATA. ASTER GDEM IS A PRODUCT OF METI AND NASA LAND PROCESSES DISTRIBUTED ACTIE ARCHIVE CENTER (LP DAAC). FOR MORE INFORMATION VISIT: HTTPS://LPDAAC.USGS.GOV

2/ TAXIWAY INTERSECTION HEIGHTS ARE BASED ON THE FUTURE CRITICAL AIRCRAFT, THE GULFSTREAM G500, WITH A TAIL HEIGHT OF 25.5 FEET.





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SHEET TITLE
RUNWAY 19 INNER APPROACH

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

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REVISIONS

DATE	DESCRIPTION

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SHEET 09 OF 22

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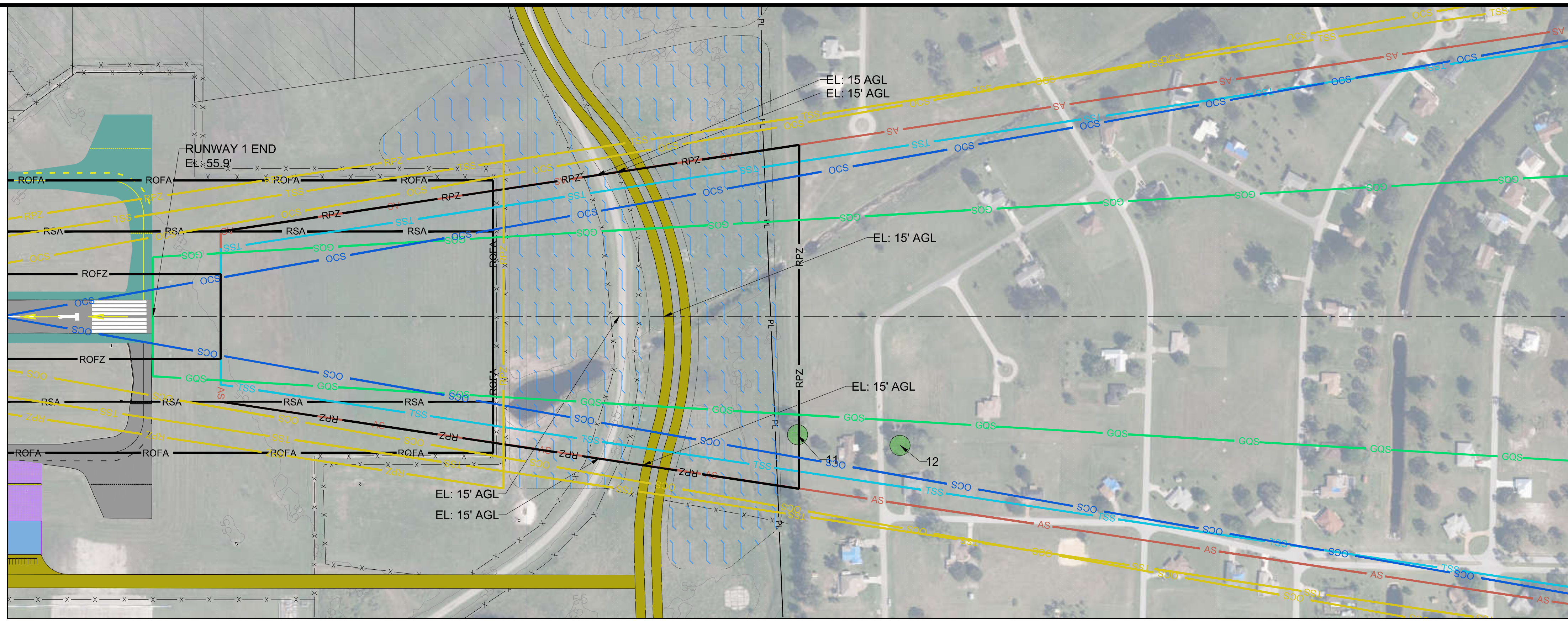

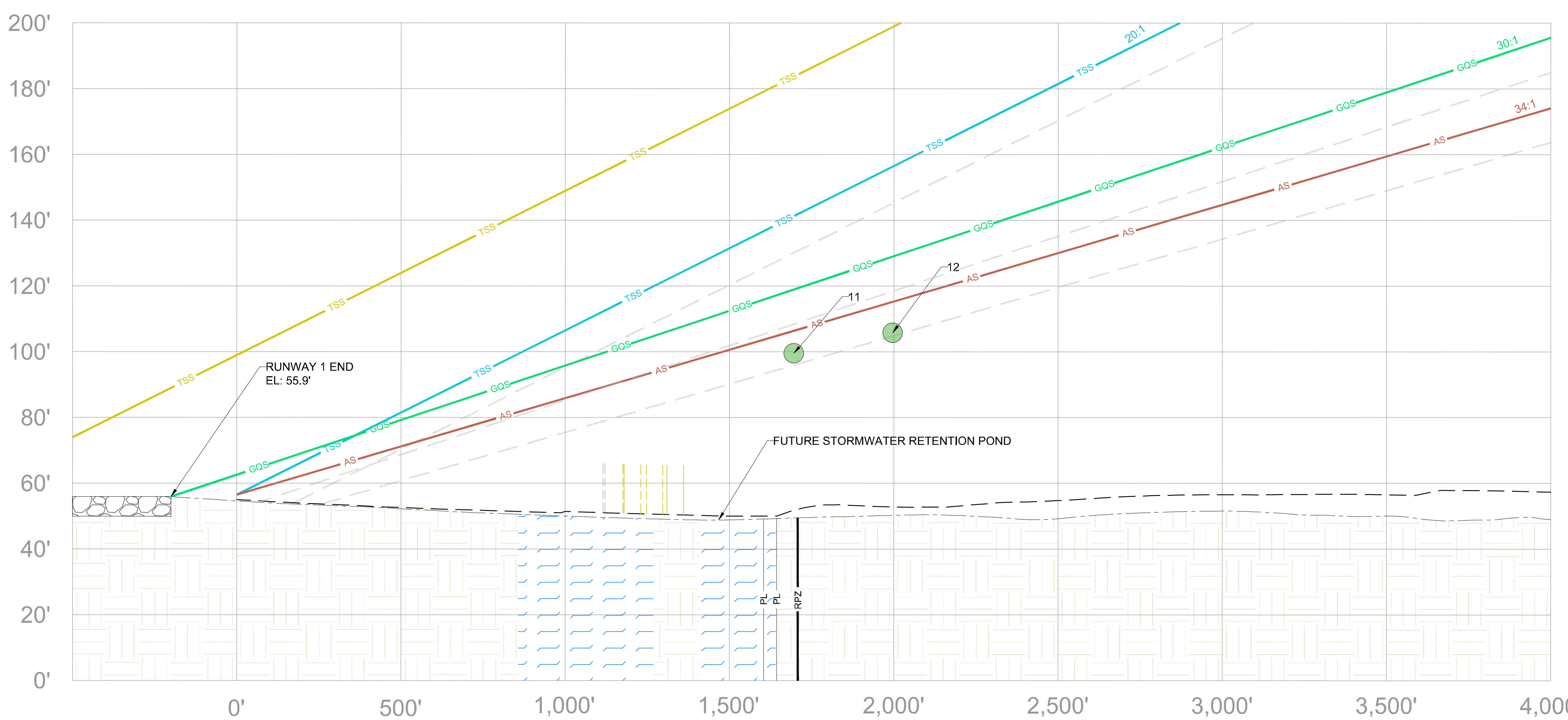

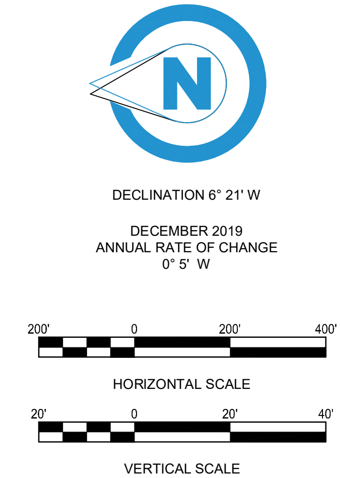

LEGEND

EXISTING	FUTURE/PROPOSED	DESCRIPTION
PL	FPL	PROPERTY LINE
RSA	RSA	RUNWAY SAFETY AREA
ROFA	ROFA	RUNWAY OBJECT FREE AREA
ROFZ	ROFZ	RUNWAY OBSTACLE FREE ZONE
RPZ	RPZ	RUNWAY PROTECTION ZONE
AS	AS	APPROACH SURFACE
TSS	TSS	THRESHOLD SITING SURFACE
GQS	GQS	GLIDESLOPE QUALIFICATION SURFACE
OCS	OCS	PAPI OBSTACLE CLEARANCE SURFACE
	SAME	EXTENDED RUNWAY CENTERLINE
	SAME	CRITICAL GROUND PROFILE[1]
20'	SAME	TOPO CONTOUR LINES
		PAVED AIRFIELD SURFACES
	N/A	AIRPORT BUILDINGS
N/A		NON-AERONAUTICAL LAND
N/A		STORM WATER RETENTION POND
X	TBD	FENCE
		RAIL TRACKS
	SAME	VEGETATION OBSTACLES
	SAME	OTHER OBSTACLES
	SAME	TAXIWAY INTERSECTIONS[2]
		TRAVERSEWAY INTERSECTIONS
N/A		ROAD

1/ SUPPLEMENTAL TOPOGRAPHIC DATA USED IN THIS STUDY WAS DERIVED FROM ASTER GDEM V2 30M DEM DATA. ASTER GDEM IS A PRODUCT OF METI AND NASA LAND PROCESSES DISTRIBUTED ACTIE ARCHIVE CENTER (LP DAAC). FOR MORE INFORMATION VISIT: HTTPS://LPDAAC.USGS.GOV

2/ TAXIWAY INTERSECTION HEIGHTS ARE BASED ON THE FUTURE CRITICAL AIRCRAFT, THE GULFSTREAM G500, WITH A TAIL HEIGHT OF 25.5 FEET.

3/ TRAVERSEWAY ELEVATIONS FOR PUBLIC ROADS, PRIVATE ROADS, INTERSTATES, AND RAILROADS CALCULATED WITH A STANDARD VERTICAL ADDITION OF 10', 15', 17', AND 23' RESPECTIVELY.

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SHEET TITLE
RUNWAY 1 INNER APPROACH

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING MULTIMODAL LOGISTICS CENTER

REVISIONS
DATE	DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

DECLINATION 6° 21' W

DECEMBER 2019
ANNUAL RATE OF CHANGE
0° 5' W

200' 0 200' 400'

HORIZONTAL SCALE

20' 0 20' 40'

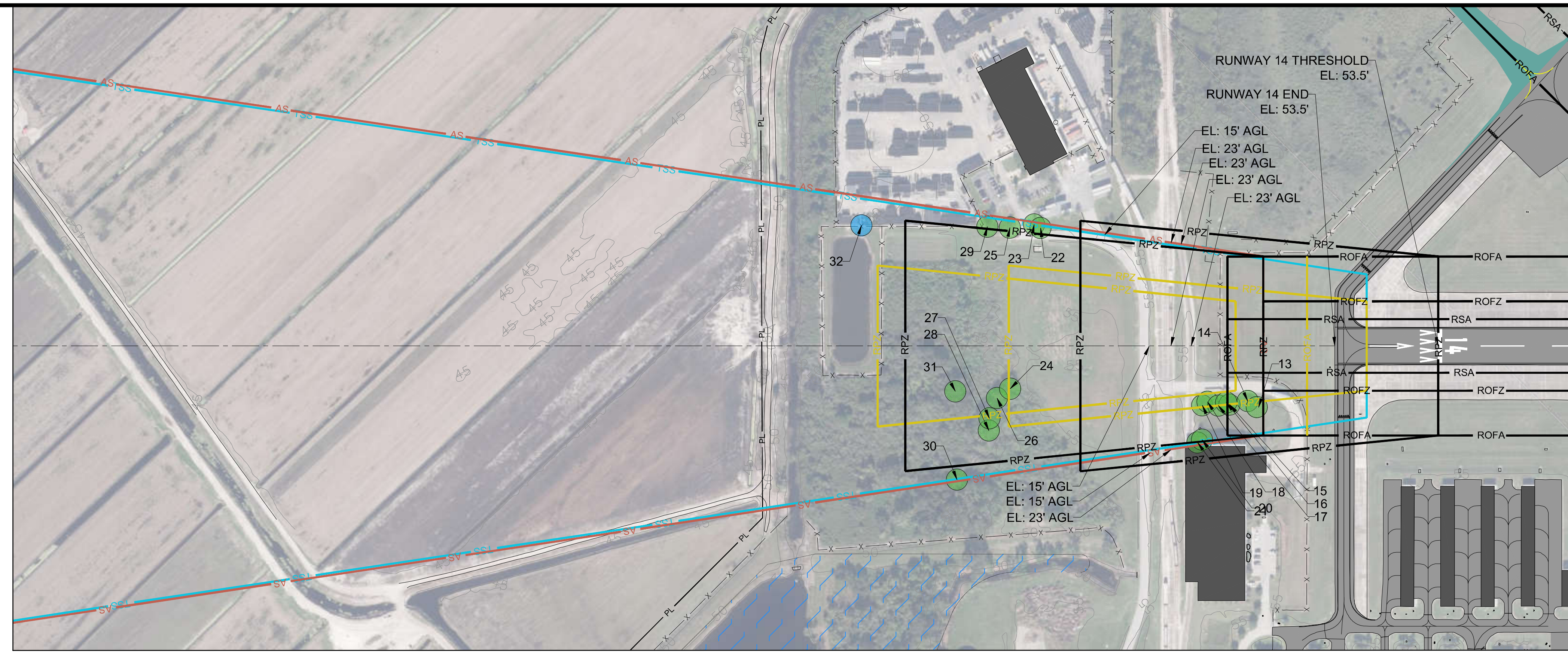
VERTICAL SCALE

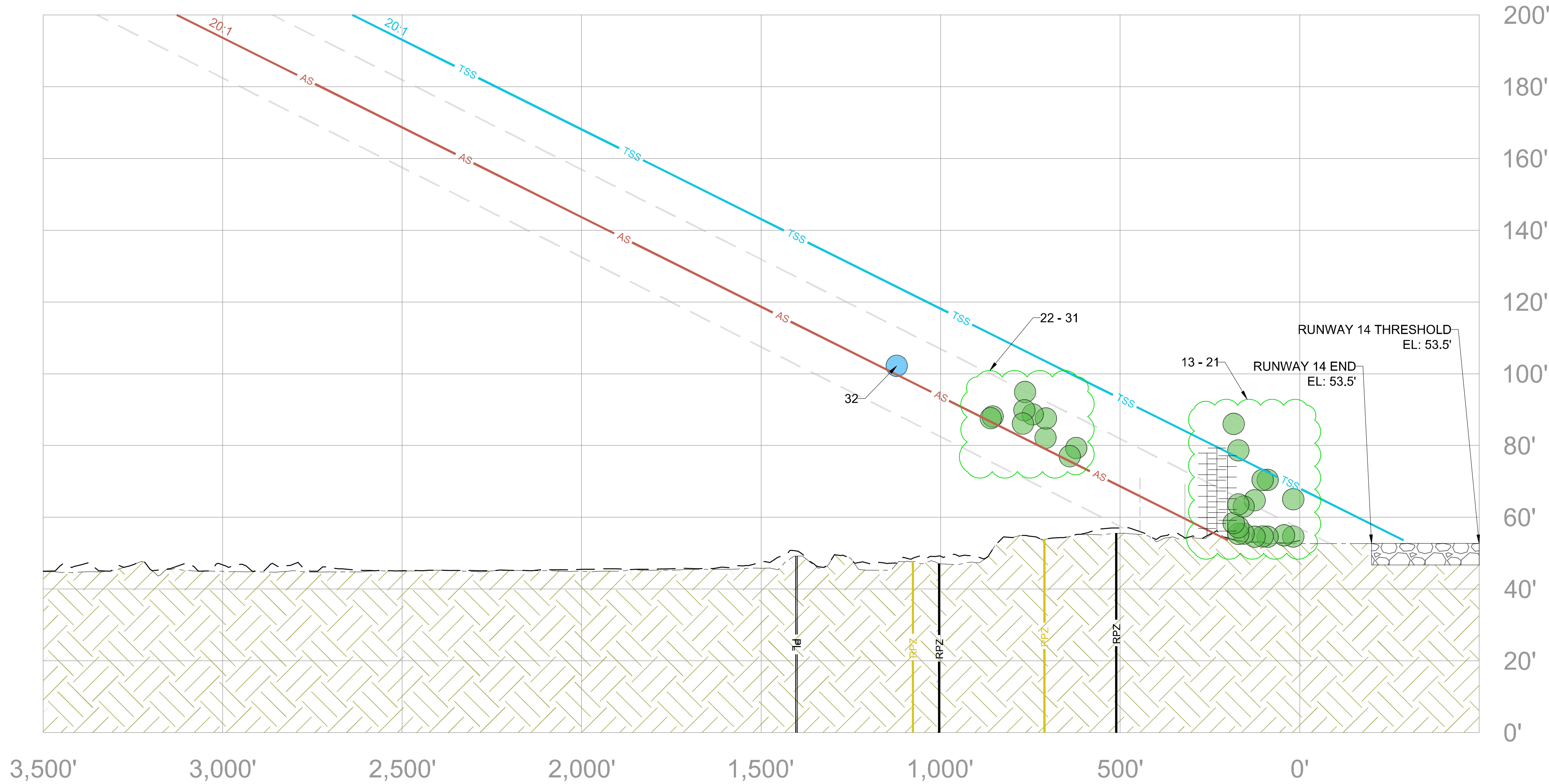
LEGEND

EXISTING	FUTURE/PROPOSED	DESCRIPTION
PL	FPL	PROPERTY LINE
RSA	RSA	RUNWAY SAFETY AREA
ROFA	ROFA	RUNWAY OBJECT FREE AREA
ROFZ	ROFZ	RUNWAY OBSTACLE FREE ZONE
RPZ	RPZ	RUNWAY PROTECTION ZONE
AS	AS	APPROACH SURFACE
TSS	TSS	THRESHOLD SITING SURFACE
GQS	GQS	GLIDESLOPE QUALIFICATION SURFACE
OCS	OCS	PAPI OBSTACLE CLEARANCE SURFACE
	SAME	EXTENDED RUNWAY CENTERLINE
	SAME	CRITICAL GROUND PROFILE[1]
20	SAME	TOPO CONTOUR LINES
		PAVED AIRFIELD SURFACES
	N/A	AIRPORT BUILDINGS
N/A		NON-AERONAUTICAL LAND
N/A		STORM WATER RETENTION POND
X	TBD	FENCE
		RAIL TRACKS
	SAME	VEGETATION OBSTACLES
	SAME	OTHER OBSTACLES
	SAME	TAXIWAY INTERSECTIONS[2]
		TRAVERSEWAY INTERSECTIONS
N/A		ROAD

1/ SUPPLEMENTAL TOPOGRAPHIC DATA USED IN THIS STUDY WAS DERIVED FROM ASTER GDEM V2 30M DEM DATA. ASTER GDEM IS A PRODUCT OF METI AND NASA LAND PROCESSES DISTRIBUTED ACTIE ARCHIVE CENTER (LP DAAC). FOR MORE INFORMATION VISIT: HTTPS://LPDAAC.USGS.GOV

2/ TAXIWAY INTERSECTION HEIGHTS ARE BASED ON THE FUTURE CRITICAL AIRCRAFT, THE GULFSTREAM G500, WITH A TAIL HEIGHT OF 25.5 FEET.





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SHEET TITLE
RUNWAY 14 INNER APPROACH

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

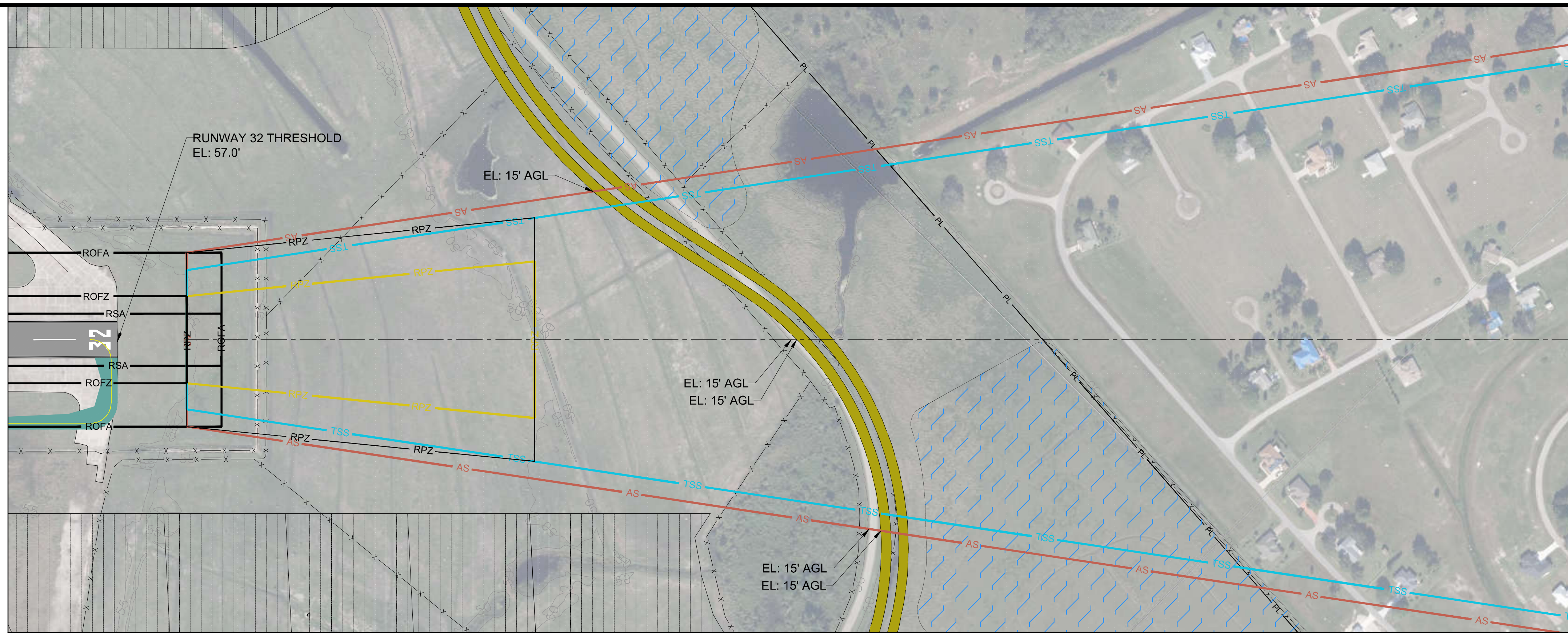
CLIENT
SEBRING
MULTIMODAL LOGISTICS CENTER

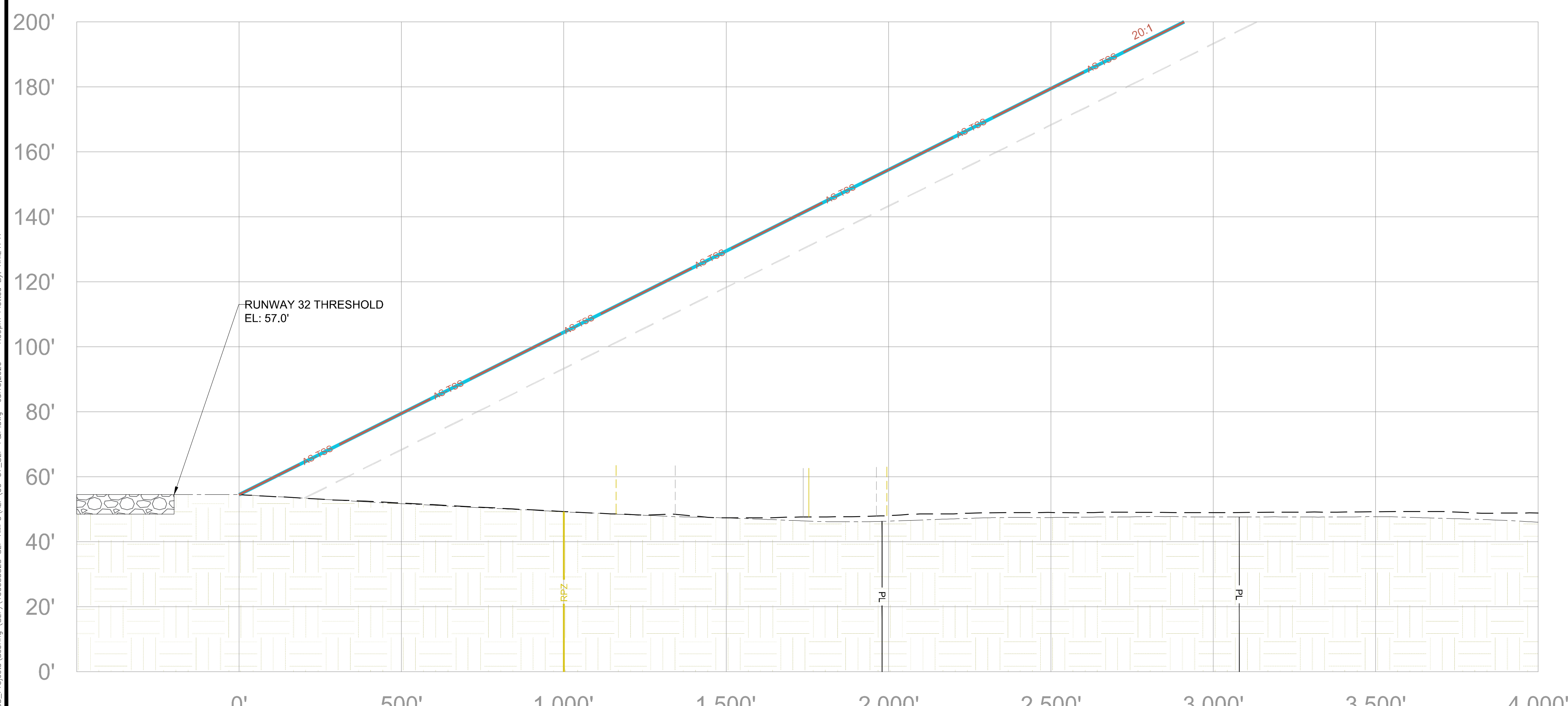
REVISIONS	
DATE	DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

SHEET 11 OF 22

M:\05_Projects\Sebring (SEF)\100055323 SEF AMPU\ALP\06-07_SEF P&P.dwg Jul10,2020 - 1:05pm Plotted By: KRIE4747





DECLINATION 6° 21' W

DECEMBER 2019
ANNUAL RATE OF CHANGE
0° 5' W

200' 0 200' 400'

HORIZONTAL SCALE

20' 0 20' 40'

VERTICAL SCALE

LEGEND

EXISTING	FUTURE/PROPOSED	DESCRIPTION
PL	FPL	PROPERTY LINE
RSA	RSA	RUNWAY SAFETY AREA
ROFA	ROFA	RUNWAY OBJECT FREE AREA
ROFZ	ROFZ	RUNWAY OBSTACLE FREE ZONE
RPZ	RPZ	RUNWAY PROTECTION ZONE
AS	AS	APPROACH SURFACE
TSS	TSS	THRESHOLD SITING SURFACE
GQS	GQS	GLIDESLOPE QUALIFICATION SURFACE
OCS	OCS	PAPI OBSTACLE CLEARANCE SURFACE
	SAME	EXTENDED RUNWAY CENTERLINE
	SAME	CRITICAL GROUND PROFILE[1]
20'	SAME	TOPO CONTOUR LINES
		PAVED AIRFIELD SURFACES
	N/A	AIRPORT BUILDINGS
N/A		NON-AERONAUTICAL LAND
N/A		STORM WATER RETENTION POND
X	TBD	FENCE
		RAIL TRACKS
	SAME	VEGETATION OBSTACLES
	SAME	OTHER OBSTACLES
	SAME	TAXIWAY INTERSECTIONS[2]
		TRAVERSEWAY INTERSECTIONS
N/A		ROAD

1/ SUPPLEMENTAL TOPOGRAPHIC DATA USED IN THIS STUDY WAS DERIVED FROM ASTER GDEM V2 30M DEM DATA. ASTER GDEM IS A PRODUCT OF METI AND NASA LAND PROCESSES DISTRIBUTED ACTIE ARCHIVE CENTER (LP DAAC). FOR MORE INFORMATION VISIT: HTTPS://LPDAAC.USGS.GOV

2/ TAXIWAY INTERSECTION HEIGHTS ARE BASED ON THE FUTURE CRITICAL AIRCRAFT, THE GULFSTREAM G500, WITH A TAIL HEIGHT OF 25.5 FEET.

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SHEET TITLE
RUNWAY 32 INNER APPROACH

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING
MULTIMODAL LOGISTICS CENTER

REVISIONS

DATE	DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

SHEET 12 OF 22

RUNWAY 19 SIGNIFICANT OBJECT TABLE										
OBJECT ID	DESCRIPTION	SURVEY DATE	EXISTING PART 77 APPROACH SURFACE PENETRATION	EXISTING 34:1 THRESHOLD SITING SURFACE PENETRATION	FUTURE PART 77 APPROACH SURFACE PENETRATION	FUTURE 34:1 THRESHOLD SITING SURFACE PENETRATION	OBJECT ELEVATION (MSL)	OBJECT ELEVATION (AGL)	TRIGGERING EVENT	PROPOSED DISPOSITON
1	TREE	6/14/2017	-7.30	-22.85	N/A	N/A	74.25	22.41	RUNWAY EXTENSION	REMOVE/TRIM
2	TREE	6/14/2017	-34.68	-71.78	17.55	17.02	77.65	25.24	RUNWAY EXTENSION	REMOVE/TRIM
3	TREE	6/14/2017	-31.51	-69.37	20.73	N/A	81.92	36.41	RUNWAY EXTENSION	REMOVE/TRIM
4	TREE	6/14/2017	-38.37	-76.45	13.87	12.36	75.37	23.45	RUNWAY EXTENSION	REMOVE/TRIM
5	TREE	6/14/2017	-36.72	-75.63	15.52	13.17	78.21	25.34	RUNWAY EXTENSION	REMOVE/TRIM
6	TREE	6/14/2017	-32.77	-72.52	19.46	N/A	83.34	30.48	RUNWAY EXTENSION	REMOVE/TRIM
7	TREE	6/14/2017	-35.54	-75.59	16.70	13.22	81.01	37.33	RUNWAY EXTENSION	REMOVE/TRIM
8	TREE	6/14/2017	-37.95	-78.52	14.29	N/A	79.35	26.48	RUNWAY EXTENSION	REMOVE/TRIM
9	TREE	6/14/2017	-36.32	-76.92	15.92	11.89	81.01	37.09	RUNWAY EXTENSION	REMOVE/TRIM
10	TREE	6/14/2017	-35.22	-77.85	17.01	N/A	84.99	40.79	RUNWAY EXTENSION	REMOVE/TRIM

RUNWAY 1 SIGNIFICANT OBJECT TABLE								
OBJECT ID	DESCRIPTION	SURVEY DATE	EXISTING PART 77 APPROACH SURFACE PENETRATION	EXISTING 34:1 THRESHOLD SITING SURFACE PENETRATION	OBJECT ELEVATION (MSL)	OBJECT ELEVATION (AGL)	TRIGGERING EVENT	PROPOSED DISPOSITON
11	TREE	6/14/2017	-6.83	N/A	99.52	48.36	NONE	REMOVE/TRIM
12	TREE	6/14/2017	-9.44	N/A	105.76	53.11	NONE	REMOVE/TRIM

RUNWAY 14 SIGNIFICANT OBJECT TABLE								
OBJECT ID	DESCRIPTION	SURVEY DATE	EXISTING PART 77 APPROACH SURFACE PENETRATION	EXISTING 34:1 THRESHOLD SITING SURFACE PENETRATION	OBJECT ELEVATION (MSL)	OBJECT ELEVATION (AGL)	TRIGGERING EVENT	PROPOSED DISPOSITON
13	TREE	6/14/2017	10.50	10.50	65.00	11.03	NONE	REMOVE/TRIM
14	TREE	6/14/2017	12.63	12.63	68.41	13.58	NONE	REMOVE/TRIM
15	TREE	6/14/2017	12.34	12.34	70.40	16.28	NONE	REMOVE/TRIM
16	TREE	6/14/2017	11.63	11.63	70.40	15.81	NONE	REMOVE/TRIM
17	TREE	6/14/2017	4.83	4.83	64.72	10.79	NONE	REMOVE/TRIM
18	TREE	6/14/2017	1.61	1.61	63.01	8.15	NONE	REMOVE/TRIM
19	TREE	6/14/2017	1.43	1.43	63.58	9.18	NONE	REMOVE/TRIM
20	TREE	6/14/2017	16.48	16.48	78.63	23.92	NONE	REMOVE/TRIM
21	TREE	6/14/2017	23.21	23.21	86.01	30.41	NONE	REMOVE/TRIM
22	TREE	6/14/2017	-5.45	-5.45	79.28	25.47	NONE	REMOVE/TRIM
23	TREE	6/14/2017	-8.61	-8.61	77.02	24.21	NONE	REMOVE/TRIM
24	TREE	6/14/2017	-1.42	-1.42	87.53	33.24	NONE	REMOVE/TRIM
25	TREE	6/14/2017	-6.88	-6.88	82.13	28.22	NONE	REMOVE/TRIM
26	TREE	6/14/2017	-2.14	-2.14	88.66	36.28	NONE	REMOVE/TRIM
27	TREE	6/14/2017	3.02	3.02	94.89	43.39	NONE	REMOVE/TRIM
28	TREE	6/14/2017	-2.13	-2.13	89.82	39.04	NONE	REMOVE/TRIM
29	TREE	6/14/2017	-6.07	-6.07	86.10	34.45	NONE	REMOVE/TRIM
30	TREE	6/14/2017	-8.30	-8.30	88.08	38.69	NONE	REMOVE/TRIM
31	TREE	6/14/2017	-9.03	-9.03	87.59	37.84	NONE	REMOVE/TRIM
32	POLE	6/14/2017	-7.55	-7.55	102.18	52.86	NONE	REMOVE

NOTES:
1/ ALL PRIVATE ROADS, PUBLIC ROADS, INTERSTATE HIGHWAYS, AND RAILWAYS ARE DEPICTED AT THE TRAVERSEWAY ELEVATION PLUS THE CORRESPONDING ADJSTMENT OF 10', 15', 17', AND 23' RESPECTIVELY
2/ ALL SURVEYED OBSTRUCTIONS WITHIN 10' OF THE APPROACH SURFACE HAVE BEEN DEPICTED
3/ SUPPLEMENTAL TOPOGRAPHIC DATA USED IN THIS STUDY WAS DERIVED FROM ASTER GDEM V2 30M DEM DATA. ASTER GDEM IS A PRODUCT OF METI AND NASA LAND PROCESSES DISTRIBUTED ACTIE ARCHIVE CENTER (LP DAAC). FOR MORE INFORMATION VISIT: HTTPS://LPDAAC.USGS.GOV
4/ DEPARTURE SURFACE TRAVERSEWAY TABLE POINTS DEPICTED ON SHEETS 14 AND 15

DEPARTURE SURFACES TRAVERSEWAY TABLE									
OBJECT ID	DESCRIPTION	SURVEY DATE	GROUND ELEVATION (MSL)	TRAVERSEWAY ELEVATION (AGL)	TRAVERSEWAY ELEVATION (MSL)	40:1 DEPARTURE SURFACE PENETRATION	FUTURE RUNWAY 19 40:1 DEPARTURE SURFACE PENETRATION	TRIGGERING EVENT	PROPOSED DISPOSITON
RR-1	RAIL	6/18/2018	48.68	23.00	71.68	-14.32	22.51	RWY EXT	REALIGNMENT
RR-2	RAIL	6/18/2018	46.23	23.00	69.23	-35.05	1.78	RWY EXT	REALIGNMENT
R-1	ROAD	6/18/2018	45.40	10.00	55.40	-52.00	-15.18	NONE	NONE
R-2	ROAD	6/18/2018	44.52	10.00	54.52	-60.93	-24.11	NONE	NONE
R-3	ROAD	6/18/2018	45.00	10.00	55.00	-82.85	-46.03	NONE	NONE
R-4	ROAD	6/18/2018	44.60	10.00	54.60	-83.25	-46.43	NONE	NONE
R-5	ROAD	6/18/2018	46.90	10.00	56.90	-101.43	-64.60	NONE	NONE
R-6	ROAD	6/18/2018	50.07	10.00	60.07	-113.91	-77.08	NONE	NONE
R-7	ROAD	6/18/2018	54.78	15.00	69.78	-152.30	-115.47	NONE	NONE
R-8	ROAD	6/18/2018	54.93	15.00	69.93	-159.42	-122.60	NONE	NONE
R-9	ROAD	6/18/2018	55.81	15.00	70.81	-171.84	-135.02	NONE	NONE
R-10	ROAD	6/18/2018	53.52	15.00	68.52	-188.61	-151.78	NONE	NONE
R-11	ROAD	6/18/2018	52.43	15.00	67.43	-191.65	-154.82	NONE	NONE
F-1	FUT ROAD	6/18/2018	54.29	15.00	69.29	-24.74	N/A	NONE	NONE
F-2	FUT ROAD	6/18/2018	49.31	15.00	64.31	-29.14	N/A	NONE	NONE
F-3	FUT ROAD	6/18/2018	50.63	15.00	65.63	-18.07	N/A	NONE	NONE
R-12	ROAD	6/18/2018	47.83	15.00	62.83	-43.92	N/A	NONE	NONE
R-13	ROAD	6/18/2018	49.32	15.00	64.32	-44.91	N/A	NONE	NONE
R-14	ROAD	6/18/2018	57.01	15.00	72.01	-37.47	N/A	NONE	NONE
R-15	ROAD	6/18/2018	49.78	15.00	64.78	-64.42	N/A	NONE	NONE
R-16	ROAD	6/18/2018	50.18	15.00	65.18	-75.57	N/A	NONE	NONE
R-17	ROAD	6/18/2018	49.45	15.00	64.45	-90.20	N/A	NONE	NONE
R-18	ROAD	6/18/2018	52.70	15.00	67.70	-98.53	N/A	NONE	NONE
R-19	ROAD	6/18/2018	44.20	15.00	59.20	-126.75	N/A	NONE	NONE
R-20	ROAD	6/18/2018	43.85	15.00	58.85	-126.73	N/A	NONE	NONE
R-21	ROAD	6/18/2018	57.23	15.00	72.23	-111.22	N/A	NONE	NONE
RR-4	RAIL	6/18/2018	53.01	23.00	76.01	12.76	N/A	NONE	AIRSPACE
RR-5	RAIL	6/18/2018	54.52	23.00	77.52	12.97	N/A	NONE	AIRSPACE
RR-6	RAIL	6/18/2018	53.12	23.00	76.12	10.92	N/A	NONE	AIRSPACE
R-22	ROAD	6/18/2018	55.02	15.00	70.02	3.45	N/A	NONE	AIRSPACE
R-23	ROAD	6/18/2018	45.81	10.00	55.81	-35.57	N/A	NONE	NONE
R-24	ROAD	6/18/2018	48.59	10.00	58.59	-34.21	N/A	NONE	NONE
R-25	ROAD	6/18/2018	44.37	10.00	54.37	-82.38	N/A	NONE	NONE
R-26	ROAD	6/18/2018	44.87	10.00	54.87	-117.26	N/A	NONE	NONE
R-27	ROAD	6/18/2018	46.52	10.00	56.52	-124.48	N/A	NONE	NONE
F-4	FUT ROAD	6/18/2018	49.23	15.00	64.23	-44.55	N/A	NONE	NONE
F-5	FUT ROAD	6/18/2018	46.94	15.00	61.94	-43.94	N/A	NONE	NONE
F-6	FUT ROAD	6/18/2018	49.65	15.00	64.65	-19.08	N/A	NONE	NONE
R-28	ROAD	6/18/2018	48.75	15.00	63.75	-23.90	N/A	NONE	NONE
R-29	ROAD	6/18/2018	46.94	15.00	61.94	-43.94	N/A	NONE	NONE
R-30	ROAD	6/18/2018	48.82	15.00	63.82	-42.06	N/A	NONE	NONE
R-31	ROAD	6/18/2018	47.52	15.00	62.52	-67.11	N/A	NONE	NONE
R-32	ROAD	6/18/2018	48.24	15.00	63.24	-85.79	N/A	NONE	NONE
R-33	ROAD	6/18/2018	42.22	15.00	57.22	-98.38	N/A	NONE	NONE
R-34	ROAD	6/18/2018	41.56	15.00	56.56	-127.74	N/A	NONE	NONE
R-35	ROAD	6/18/2018	43.16	15.00	58.16	-180.09	N/A	NONE	NONE
R-36	ROAD	6/18/2018	47.02	15.00	62.02	-223.73	N/A	NONE	NONE
R-37	ROAD	6/18/2018	43.46	15.00	58.46	-253.04	N/A	NONE	NONE

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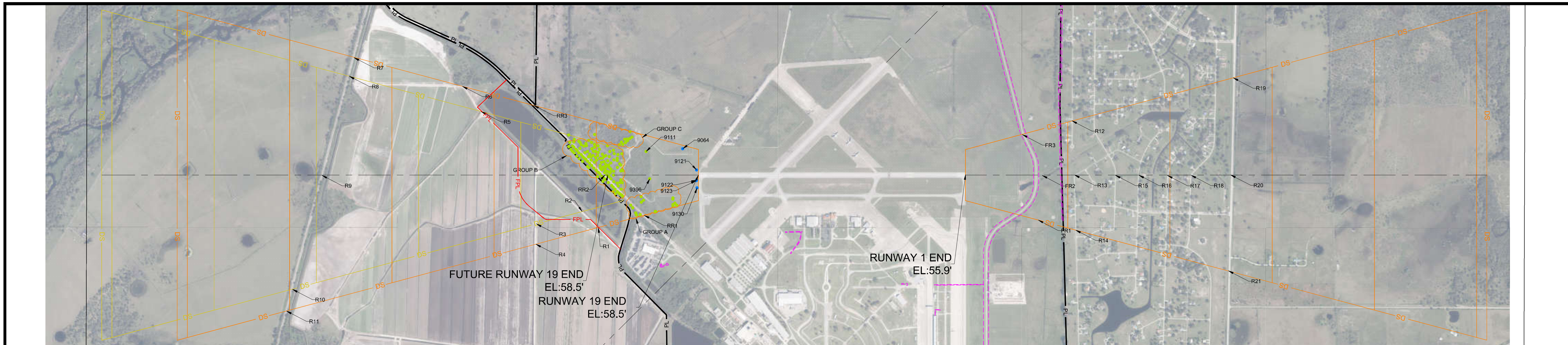
SHEET TITLE
INNER APPROACH DATA TABLES

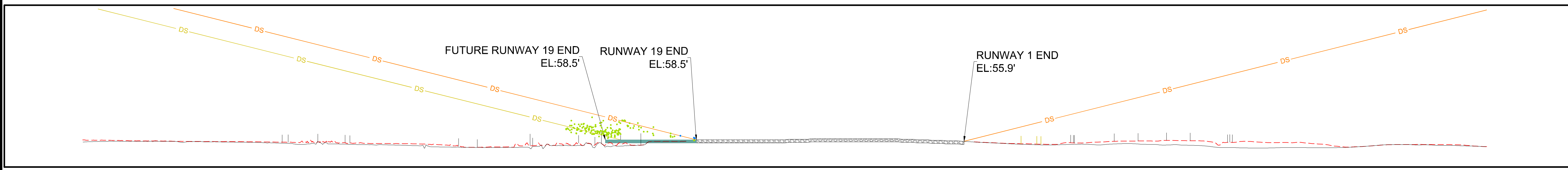
PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING MULTIMODAL LOGISTICS CENTER

REVISIONS
DATE
DESCRIPTION

JOB NO. 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020





RUNWAY 19 SIGNIFICANT OBJECT TABLE - 1

OBJECT ID	DESCRIPTION	GROUP	SURVEY DATE	EXISTING 40:1 DEPARTURE SURFACE PENETRATION	FUTURE 40:1 DEPARTURE SURFACE PENETRATION	GROUND ELEVATION (MSL)	OBJECT ELEVATION (MSL)	OBJECT ELEVATION (AGL)	TRIGGERING EVENT	PROPOSED DISPOSITION
9057	TREE	A	6/15/2017	-0.21	N/A	53.49	70.90	17.41	NONE	NONE
9062	TREE	A	6/15/2017	-4.79	N/A	53.53	66.34	12.81	NONE	NONE
9127	TREE	A	6/15/2017	-7.05	N/A	54.61	64.06	9.45	NONE	NONE
9128	TREE	A	6/15/2017	-5.41	N/A	54.31	65.77	11.46	NONE	NONE
9131	TREE	A	6/15/2017	-4.05	N/A	53.77	65.20	11.43	NONE	NONE
9132	TREE	A	6/15/2017	-6.08	N/A	53.67	64.06	10.39	NONE	NONE
9353	TREE	A	6/15/2017	-8.48	N/A	47.87	78.23	30.36	NONE	NONE
9357	TREE	A	6/15/2017	-2.86	N/A	51.53	83.92	32.39	NONE	NONE
9358	TREE	A	6/15/2017	-3.44	N/A	49.86	82.22	32.36	NONE	NONE
9612	TREE	A	6/15/2017	-9.17	N/A	52.26	70.72	18.46	NONE	NONE
9613	TREE	A	6/15/2017	3.62	N/A	52.22	83.21	30.99	NONE	NONE
9694	TREE	A	6/15/2017	-6.51	N/A	52.70	85.41	32.71	NONE	NONE
9695	TREE	A	6/15/2017	-9.48	N/A	51.04	81.44	30.40	NONE	NONE
9831	TREE	A	6/15/2017	3.84	N/A	52.42	91.08	38.66	NONE	NONE
9832	TREE	A	6/15/2017	-3.69	N/A	44.91	85.41	40.50	NONE	NONE
9833	TREE	A	6/15/2017	-8.06	N/A	44.98	81.44	36.46	NONE	NONE
9417	TREE	B	6/15/2017	-8.41	N/A	45.72	95.65	49.93	NONE	NONE
7092	TREE	B	6/15/2017	N/A	-4.74	43.85	79.28	35.43	NONE	NONE
7093	TREE	B	6/15/2017	N/A	-6.25	43.89	77.01	33.12	NONE	NONE
7094	TREE	B	6/15/2017	N/A	3.72	43.76	86.12	42.36	NONE	NONE
7096	TREE	B	6/15/2017	N/A	-3.56	52.04	80.99	28.95	NONE	NONE
7097	TREE	B	6/15/2017	N/A	-6.36	43.88	78.71	34.83	NONE	NONE
9	TREE	B	6/15/2017	N/A	5.13	43.92	81.01	37.09	NONE	NONE
7	TREE	B	6/15/2017	N/A	5.79	43.69	81.01	37.32	NONE	NONE
7101	TREE	B	6/15/2017	N/A	-0.12	44.57	81.00	36.43	NONE	NONE
7102	TREE	B	6/15/2017	N/A	-2.31	44.53	77.58	33.05	NONE	NONE
10	TREE	B	6/15/2017	N/A	6.65	44.21	84.99	40.78	NONE	NONE
7104	TREE	B	6/15/2017	N/A	3.79	44.24	74.72	30.48	NONE	NONE
7111	TREE	B	6/15/2017	N/A	10.11	44.88	72.43	27.55	NONE	NONE
7112	TREE	B	6/15/2017	N/A	23.92	45.14	87.24	42.10	NONE	NONE
7113	TREE	B	6/15/2017	N/A	17.77	44.39	86.11	41.72	NONE	NONE
7118	TREE	B	6/15/2017	N/A	13.25	52.15	95.83	43.68	NONE	NONE
7119	TREE	B	6/15/2017	N/A	0.58	52.35	82.18	29.84	NONE	NONE
7120	TREE	B	6/15/2017	N/A	8.02	52.49	89.01	36.52	NONE	NONE
7123	TREE	B	6/15/2017	N/A	2.94	51.99	86.16	34.17	NONE	NONE
7124	TREE	B	6/15/2017	N/A	-2.17	52.38	75.35	22.97	NONE	NONE
7125	TREE	B	6/15/2017	N/A	12.31	52.91	89.03	36.12	NONE	NONE
8	TREE	B	6/15/2017	N/A	3.49	52.87	79.35	26.48	NONE	NONE
7127	TREE	B	6/15/2017	N/A	-8.83	52.13	71.36	19.23	NONE	NONE
7128	TREE	B	6/15/2017	N/A	9.48	52.84	88.44	35.60	NONE	NONE
7129	TREE	B	6/15/2017	N/A	-2.82	52.37	75.35	22.98	NONE	NONE
9250	TREE	B	6/15/2017	N/A	11.05	43.73	88.74	45.01	NONE	NONE
9251	TREE	B	6/15/2017	N/A	2.30	44.74	81.92	37.18	NONE	NONE
9252	TREE	B	6/15/2017	N/A	4.70	45.05	81.92	36.87	NONE	NONE
9253	TREE	B	6/15/2017	N/A	13.44	44.02	89.86	45.84	NONE	NONE
9254	TREE	B	6/15/2017	N/A	7.51	44.00	84.18	40.18	NONE	NONE
9255	TREE	B	6/15/2017	N/A	0.60	43.92	79.62	35.70	NONE	NONE
9256	TREE	B	6/15/2017	N/A	5.50	45.45	75.09	29.64	NONE	NONE
9257	TREE	B	6/15/2017	N/A	8.03	45.58	76.24	30.66	NONE	NONE
9258	TREE	B	6/15/2017	N/A	5.01	46.04	73.96	27.92	NONE	NONE
9259	TREE	B	6/15/2017	N/A	3.29	45.08	77.36	32.28	NONE	NONE
3	TREE	B	6/15/2017	N/A	9.35	45.51	81.92	36.41	NONE	NONE
9261	TREE	B	6/15/2017	N/A	4.25	45.09	73.95	28.86	NONE	NONE

RUNWAY 19 SIGNIFICANT OBJECT TABLE - 2

OBJECT ID	DESCRIPTION	GROUP	SURVEY DATE	EXISTING 40:1 DEPARTURE SURFACE PENETRATION	FUTURE 40:1 DEPARTURE SURFACE PENETRATION	GROUND ELEVATION (MSL)	OBJECT ELEVATION (MSL)	OBJECT ELEVATION (AGL)	TRIGGERING EVENT	PROPOSED DISPOSITION
9262	TREE	B	6/15/2017	N/A	11.68	44.33	86.44	42.12	NONE	NONE
9269	TREE	B	6/15/2017	N/A	16.81	45.39	87.58	42.19	NONE	NONE
9270	TREE	B	6/15/2017	N/A	11.02	45.05	83.02	37.97	NONE	NONE
9271	TREE	B	6/15/2017	N/A	10.34	45.16	84.16	39.01	NONE	NONE
9272	TREE	B	6/15/2017	N/A	-1.42	45.31	73.90	28.59	NONE	NONE
9273	TREE	B	6/15/2017	N/A	6.81	45.45	80.74	35.29	NONE	NONE
9274	TREE	B	6/15/2017	N/A	4.84	45.29	77.32	32.03	NONE	NONE
9275	TREE	B	6/15/2017	N/A	7.58	45.62	75.10	29.48	NONE	NONE
9276	TREE	B	6/15/2017	N/A	5.61	45.45	70.55	25.10	NONE	NONE
9277	TREE	B	6/15/2017	N/A	-0.78	46.14	63.71	17.57	NONE	NONE
9278	TREE	B	6/15/2017	N/A	7.83	45.62	73.97	28.35	NONE	NONE
9279	TREE	B	6/15/2017	N/A	12.75	46.96	71.69	24.73	NONE	NONE
9280	TREE	B	6/15/2017	N/A	13.25	48.67	72.83	24.16	NONE	NONE
9281	TREE	B	6/15/2017	N/A	6.24	46.04	69.41	23.37	NONE	NONE
9282	TREE	B	6/15/2017	N/A	2.66	45.86	68.28	22.42	NONE	NONE
9283	TREE	B	6/15/2017	N/A	3.77	46.39	68.28	21.89	NONE	NONE
9284	TREE	B	6/15/2017	N/A	9.14	45.66	75.14	29.48	NONE	NONE
9285	TREE	B	6/15/2017	N/A	4.39	45.42	71.69	26.27	NONE	NONE
9286	TREE	B	6/15/2017	N/A	2.61	45.75	69.42	23.67	NONE	NONE
9287	TREE	B	6/15/2017	N/A	4.20	46.03	69.42	23.39	NONE	NONE
9289	TREE	B	6/15/2017	N/A	7.50	46.17	70.54	24.37	NONE	NONE
9290	TREE	B	6/15/2017	N/A	11.41	46.39	72.82	26.43	NONE	NONE
9291	TREE	B	6/15/2017	N/A	11.87	46.99	72.82	25.83	NONE	NONE
9292	TREE	B	6/15/2017	N/A	7.55	46.01	73.96	27.95	NONE	NONE
9293	TREE	B	6/15/2017	N/A	7.45	45.24	72.82	27.58	NONE	NONE
9294	TREE	B	6/15/2017	N/A	8.39	45.79	72.82	27.03	NONE	NONE
9298	TREE	B	6/15/2017	N/A	16.78	47.21	76.24	29.04	NONE	NONE
9301	TREE	B	6/15/2017	N/A	19.59	53.41	78.80	25.39	NONE	NONE
9302	TREE	B	6/15/2017	N/A	20.09	53.40	78.80	25.40	NONE	NONE
9304	TREE	B	6/15/2017	N/A	14.63	53.14	75.95	22.81	NONE	NONE
9305	TREE	B	6/15/2017	N/A	16.50	53.14	77.09	23.95	NONE	NONE
9306	TREE	B	6/15/2017	N/A	16.12	53.42	75.95	22.53	NONE	NONE
9313	TREE	B	6/15/2017	N/A	14.65	53.14	77.09	23.95	NONE	NONE
2	TREE	B	6/15/2017	N/A	6.02	52.41	77.65	25.24	NONE	NONE
9315	TREE	B	6/15/2017	N/A	0.74	52.77	71.38	18.61	NONE	NONE
9316	TREE	B	6/15/2017	N/A	5.58	52.93	75.37	22.44	NONE	NONE
6	TREE	B	6/15/2017	N/A	8.49	52.86	83.34	30.49	NONE	NONE
5	TREE	B	6/15/2017	N/A	4.37	52.88	78.21	25.34	NONE	NONE
4	TREE	B	6/15/2017	N/A	2.54	51.91	75.37	23.46	NONE	NONE
9320	TREE	B	6/15/2017	N/A	12.49	53.17	78.22	25.06	NONE	NONE
9321	TREE	B	6/15/2017	N/A	7.29	53.41	71.39	17.98	NONE	NONE
9322	TREE	B	6/15/2017	N/A	18.25	53.19	81.64	28.45	NONE	NONE
9323	TREE	B	6/15/2017	N/A	2.58	52.88	71.38	18.50	NONE	NONE
9324	TREE	B	6/15/2017	N/A	1.22	53.17	69.10	15.93	NONE	NONE
9325	TREE	B	6/15/2017	N/A	7.76	53.35	74.80	21.45	NONE	NONE
9330	TREE	B	6/15/2017	N/A	11.00	46.07	73.82	27.75	NONE	NONE
9331	TREE	B	6/15/2017	N/A	17.44	45.78	80.66	34.88	NONE	NONE
9332	TREE	B	6/15/2017	N/A	9.94	45.25	76.10	30.85	NONE	NONE
9339	TREE	B	6/15/2017	N/A	13.94	46.95	74.95	28.00	NONE	NONE
9346	TREE	B	6/15/2017	N/A	20.38	48.54	79.51	30.97	NONE	NONE
9352	TREE	B	6/15/2017	N/A	14.20	45.76	81.98	36.22	NONE	NONE
9369	TREE	B	6/15/2017	N/A	0.75	47.58	63.88	16.30	NONE	NONE
9370	TREE	B	6/15/2017	N/A	-3.12	45.56	61.59	16.03	NONE	NONE

RUNWAY 19 SIGNIFICANT OBJECT TABLE - 3

OBJECT ID	DESCRIPTION	GROUP	SURVEY DATE	EXISTING 40:1 DEPARTURE SURFACE PENETRATION	FUTURE 40:1 DEPARTURE SURFACE PENETRATION	GROUND ELEVATION (MSL)	OBJECT ELEVATION (MSL)	OBJECT ELEVATION (AGL)	TRIGGERING EVENT	PROPOSED DISPOSITION
9371	TREE	B	6/15/2017	N/A	8.38	46.69	68.44	21.75	NONE	NONE
9407	TREE	B	6/15/2017	N/A	-5.27	44.08	70.64	26.56	NONE	NONE
9408	TREE	B	6/15/2017	N/A	-2.96	45.49	69.50	24.01	NONE	NONE
9409	TREE	B	6/15/2017	N/A	11.26	44.88	84.31	39.43	NONE	NONE
9410	TREE	B	6/15/2017	N/A	-9.68	43.81	72.95	29.14	NONE	NONE
9411	TREE	B	6/15/2017	N/A	-3.71	47.41	78.65	31.24	NONE	NONE
9412	TREE	B	6/15/2017	N/A	-5.30	44.14	79.79	35.65	NONE	NONE
9414	TREE	B	6/15/2017	N/A	0.95	44.09	76.36	32.27	NONE	NONE
9415	TREE	B	6/15/2017	N/A	4.51	44.58	78.64	34.07	NONE	NONE
9416	TREE	B	6/15/2017	N/A	-1.40	44.87	71.78	26.91	NONE	NONE
9417	TREE	B	6/15/2017	-8.41	28.68	45.72	95.65	49.93	NONE	NONE
9418	TREE	B	6/15/2017	N/A	17.04	45.66	82.00	36.34	NONE	NONE
9419	TREE	B	6/15/2017	N/A	5.39	45.45	74.03	28.58	NONE	NONE
9420	TREE	B	6/15/2017	N/A	3.52	45.76	70.58	24.82	NONE	NONE
9421	TREE	B	6/15/2017	N/A	22.44	45.38	91.09	45.71	NONE	NONE
9422	TREE	B	6/15/2017	N/A	24.41	45.65	92.23	46.58	NONE	NONE
9423	TREE	B	6/15/2017	N/A	-4.13	45.33	64.93	19.60	NONE	NONE
9424	TREE	B	6/15/2017	N/A	-1.95	44.97	69.49	24.52	NONE	NONE
9425	TREE	B	6/15/2017	N/A	-2.50	44.83	69.49	24.66	NONE	NONE
9426	TREE	B	6/15/2017	N/A	13.38	44.79	84.29	39.50	NONE	NONE
9427	TREE	B	6/15/2017	N/A	5.10	45.43	75.18	29.75	NONE	NONE
9428	TREE	B	6/15/2017	N/A	1.89	45.19	71.77	26.58	NONE	NONE
9430	TREE	B	6/15/2017	N/A	11.03	49.89	69.57	19.68	NONE	NONE
9433	TREE	B	6/15/2017	N/A	12.22	49.92	71.84	21.92	NONE	NONE
9434	TREE	B	6/15/2017	N/A	12.79	51.71	71.84	20.14	NONE	NONE
9435	TREE	B	6/15/2017	N/A	8.81	48.81	68.42	19.61	NONE	NONE
9436	TREE	B	6/15/2017	N/A	3.14	46.86	66.15	19.29	NONE	NONE
9437	TREE	B	6/15/2017	N/A	3.64	47.44	65.01	17.57	NONE	NONE
9438	TREE	B	6/15/2017	N/A	5.94	47.12	67.30	20.18	NONE	NONE
9441	TREE	B	6/15/2017	N/A	2.57	48.04	63.87	15.84	NONE	NONE
9442	TREE	B	6/15/2017	N/A	10.55	48.90	70.70	21.80	NONE	NONE
9449	TREE	B	6/15/2017	N/A	-2.01	43.94	77.53	33.59	NONE	NONE
9450	TREE	B	6/15/2017	N/A	13.68	45.43	84.37	38.94	NONE	NONE
9451	TREE	B	6/15/2017	N/A	2.03	46.02	67.28	21.26	NONE	NONE
9454	TREE	B	6/15/2017	N/A	-9.42	44.05	70.69	26.64	NONE	NONE
9145	TREE	C	6/15/2017	-7.39	N/A	51.85	84.54	32.69	NONE	NONE
9266	TREE	C	6/15/2017	-7.08	N/A	45.53	102.34	56.81	NONE	NONE
9307	TREE	C	6/15/2017	-0.22	N/A	50.25	90.87	40.63	NONE	NONE
9308	TREE	C	6/15/2017	2.12	N/A	49.24	95.42	46.18	NONE	NONE
9309	TREE	C	6/15/2017	2.98	N/A	48.98	96.56	47.58	NONE	NONE
9312	TREE	C	6/15/2017	-5.87	N/A	50.02	86.32	36.30	NONE	NONE
9326	TREE	C	6/15/2017	1.86	N/A	48.33	96.56	48.23	NONE	NONE
9341	TREE	C	6/15/2017	-4.76	N/A	47.64	90.89	43.25	NONE	NONE
9342	TREE	C	6/15/2017	-3.13	N/A	47.95	93.16	45.21	NONE	NONE
9343	TREE	C	6/15/2017	1.13	N/A	48.24	95.43	47.19	NONE	NONE
9350	TREE	C	6/15/2017	-8.71	N/A	46.75	88.62	41.87	NONE	NONE
9064	TOPO	N/A	6/15/2017	0.06	N/A	56.47	66.35	9.88	NONE	NONE
9111	TREE	N/A	6/15/2017	-9.99	N/A	50.63	74.28	23.65	NONE	NONE
9121	TOPO	N/A	6/15/2017	2.28	N/A	57.77	61.78	4.01	NONE	NONE
9122	TOPO	N/A	6/15/2017	1.70	N/A	57.78	61.20	3.42	NONE	NONE
9123	TOPO	N/A	6/15/2017	2.94	N/A	57.59	62.63	5.04	NONE	NONE
9130	TOPO	N/A	6/15/2017	2.25	N/A	57.50	61.49	3.99	NONE	NONE
9396	TREE	N/A	6/15/2017	-8.32	N/A	51.84	74.25	22.41	NONE	NONE

NOTE: PLEASE SEE THE INNER-APPROACH DATA TABLES (SHEET 13) FOR THE DEPARTURE SURFACES TRAVERSEWAY TABLE

DECLINATION 6° 21' W

DECEMBER 2019
ANNUAL RATE OF CHANGE
0° 5' W

HORIZONTAL SCALE
0 2000 4000 Feet

VERTICAL SCALE
0 2000 4000 Feet

LEGEND

EXISTING	FUTURE	DESCRIPTION
PL	FPL	PROPERTY LINE
	N/A	EASEMENTS
DS	SAME	DEPARTURE SURFACE
20'	SAME	TOPOGRAPHIC CONTOUR LINES
N/A		TAXIWAYS AND RUNWAYS
N/A		APRONS
N/A		PUBLIC ROADS
N/A		PAVEMENT TO BE REMOVED
N/A		PLANNED COMMERCIAL DEVELOPMENT
N/A		PLANNED RAIL RE-ALIGNMENT
N/A		PLANNED ON-AIRPORT BUILDINGS
N/A		PLANNED STORM WATER INFRASTRUCTURE
N/A		NON-AERONAUTICAL LAND
	SAME	VEGETATION PENETRATIONS
	SAME	OTHER PENETRATIONS

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SHEET TITLE
RUNWAY 1-19 DEPARTURE SURFACE
PLAN & PROFILE

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

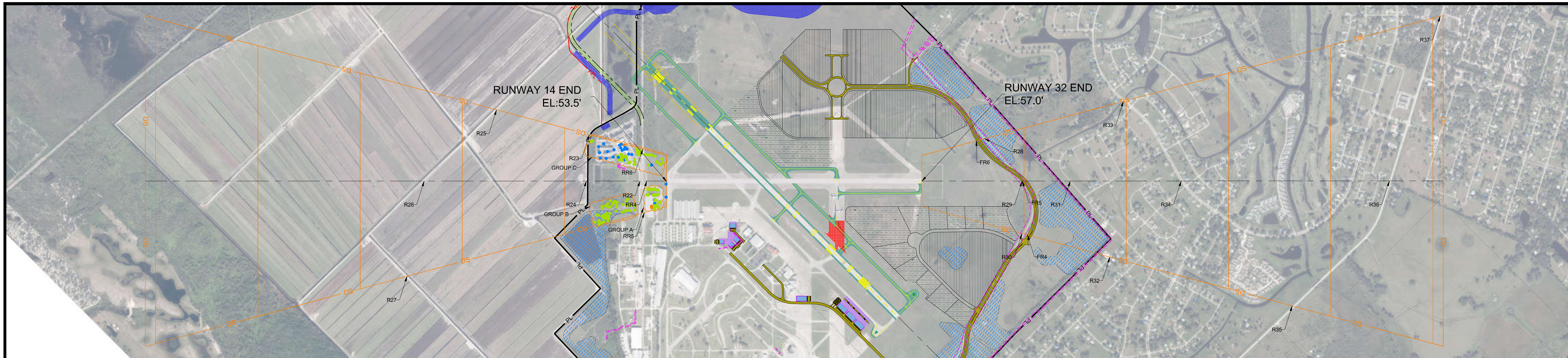
CLIENT
SEBRING
MULTIMODAL LOGISTICS CENTER

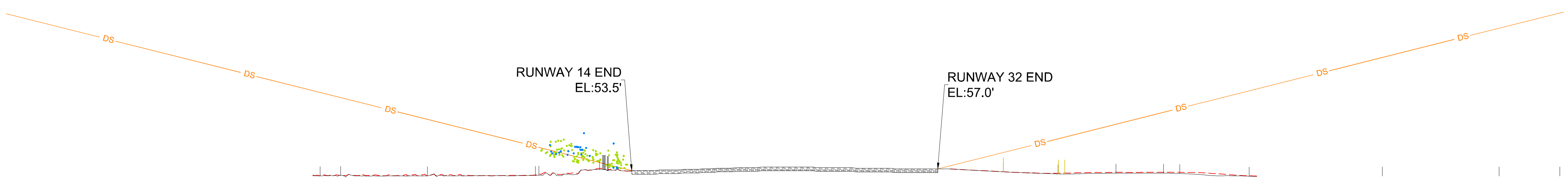
REVISIONS

DATE	DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

SHEET 14 OF 22





RUNWAY 14 SIGNIFICANT OBJECT TABLE - 1

OBJECT ID	DESCRIPTION	GROUP	SURVEY DATE	EXISTING 40:1 DEPARTURE SURFACE PENETRATION	FUTURE 40:1 DEPARTURE SURFACE PENETRATION	GROUND ELEVATION (MSL)	OBJECT ELEVATION (MSL)	OBJECT ELEVATION (AGL)	TRIGGERING EVENT	PROPOSED DISPOSITION
8193	BLDG	A	6/15/2017	36.89	N/A	58.171	97.79	39.619	NONE	AIRSPACE
8186	BLDG	A	6/15/2017	36.64	N/A	57.985	97.57	39.585	NONE	AIRSPACE
21	TREE	A	6/15/2017	22.92	N/A	55.6	86.01	30.41	NONE	NONE
9633	TREE	A	6/15/2017	23.77	N/A	57.711	83.3	25.589	NONE	NONE
9631	TREE	A	6/15/2017	23.22	N/A	57.369	82.73	25.361	NONE	NONE
9863	TREE	A	6/15/2017	19.39	N/A	54.968	79.48	24.512	NONE	NONE
9855	TREE	A	6/15/2017	19.52	N/A	54.779	79.2	24.421	NONE	NONE
9623	TREE	A	6/15/2017	19.43	N/A	55.044	78.76	23.716	NONE	NONE
20	TREE	A	6/15/2017	15.86	N/A	54.713	78.63	23.917	NONE	NONE
9856	TREE	A	6/15/2017	18.11	N/A	54.333	77.78	23.447	NONE	NONE
9625	TREE	A	6/15/2017	20.81	N/A	55.152	77.62	22.468	NONE	NONE
9627	TREE	A	6/15/2017	20.26	N/A	55.126	77.05	21.924	NONE	NONE
9632	TREE	A	6/15/2017	15.96	N/A	57.434	75.35	17.916	NONE	NONE
9622	TREE	A	6/15/2017	13.38	N/A	55.093	72.51	17.417	NONE	NONE
9626	TREE	A	6/15/2017	14.34	N/A	55.107	71.37	16.263	NONE	NONE
9624	TREE	A	6/15/2017	11.85	N/A	54.993	70.81	15.817	NONE	NONE
15	TREE	A	6/15/2017	9.68	N/A	54.12	70.4	16.28	NONE	NONE
16	TREE	A	6/15/2017	9.33	N/A	54.589	70.4	15.811	NONE	NONE
9854	TREE	A	6/15/2017	10.79	N/A	54.356	69.83	15.474	NONE	NONE
9859	TREE	A	6/15/2017	10.45	N/A	54.412	68.98	14.568	NONE	NONE
14	TREE	A	6/15/2017	8.83	N/A	54.824	68.41	13.586	NONE	NONE
9628	TREE	A	6/15/2017	8.43	N/A	57.929	67.97	10.041	NONE	NONE
9858	TREE	A	6/15/2017	8.17	N/A	54.445	66.14	11.695	NONE	NONE
9629	TREE	A	6/15/2017	6.17	N/A	57.828	65.7	7.872	NONE	NONE
13	TREE	A	6/15/2017	6.06	N/A	53.967	65	11.033	NONE	NONE
17	TREE	A	6/15/2017	3.09	N/A	53.922	64.72	10.798	NONE	NONE
19	TREE	A	6/15/2017	0.82	N/A	54.395	63.58	9.185	NONE	NONE
18	TREE	A	6/15/2017	0.62	N/A	54.859	63.01	8.151	NONE	NONE
9864	TREE	A	6/15/2017	4.61	N/A	54.758	62.44	7.682	NONE	NONE
8679	SHR	A	6/15/2017	-0.63	N/A	57.903	58.94	1.037	NONE	NONE
8729	TREE	A	6/15/2017	-1.01	N/A	57.464	57.83	0.366	NONE	NONE
8734	TREE	A	6/15/2017	-0.56	N/A	54.979	57.39	2.411	NONE	NONE
8640	SHR	A	6/15/2017	-2.02	N/A	56.308	57.32	1.012	NONE	NONE
8641	SHR	A	6/15/2017	-1.94	N/A	56.083	57.32	1.237	NONE	NONE
8662	TRNF	A	6/15/2017	-2.16	N/A	56.276	57.24	0.964	NONE	NONE
8639	SHR	A	6/15/2017	-2.24	N/A	56.502	57.19	0.688	NONE	NONE
8675	SHR	A	6/15/2017	-2.27	N/A	56.031	57.11	1.079	NONE	NONE
8676	SHR	A	6/15/2017	-2.48	N/A	56.244	57	0.756	NONE	NONE
9813	TREE	B	6/15/2017	22.69	N/A	50.771	103.93	53.159	NONE	NONE
9809	TREE	B	6/15/2017	18.71	N/A	48.591	102.23	53.639	NONE	NONE
9786	TREE	B	6/15/2017	19.26	N/A	47.652	101.62	53.968	NONE	NONE
9765	TREE	B	6/15/2017	13.92	N/A	47.453	100.5	53.047	NONE	NONE
9779	TREE	B	6/15/2017	16.03	N/A	48.402	100.48	52.078	NONE	NONE
9807	TREE	B	6/15/2017	18.96	N/A	50.666	97.12	46.454	NONE	NONE
9804	TREE	B	6/15/2017	15.89	N/A	49.436	94.86	45.424	NONE	NONE
9812	TREE	B	6/15/2017	13.75	N/A	49.296	93.73	44.434	NONE	NONE
9808	TREE	B	6/15/2017	15.74	N/A	50.688	93.72	43.032	NONE	NONE
9848	TREE	B	6/15/2017	15.31	N/A	52.485	93.66	41.175	NONE	NONE
9764	TREE	B	6/15/2017	6.56	N/A	47.326	93.14	45.814	NONE	NONE
9522	TREE	B	6/15/2017	16.1	N/A	50.443	90.94	40.497	NONE	NONE

RUNWAY 14 SIGNIFICANT OBJECT TABLE - 2

OBJECT ID	DESCRIPTION	GROUP	SURVEY DATE	EXISTING 40:1 DEPARTURE SURFACE PENETRATION	FUTURE 40:1 DEPARTURE SURFACE PENETRATION	GROUND ELEVATION (MSL)	OBJECT ELEVATION (MSL)	OBJECT ELEVATION (AGL)	TRIGGERING EVENT	PROPOSED DISPOSITION
9787	TREE	B	6/15/2017	7.69	N/A	46.741	89.72	42.979	NONE	NONE
9814	TREE	B	6/15/2017	6.33	N/A	48.823	88.64	39.817	NONE	NONE
9777	TREE	B	6/15/2017	4.83	N/A	51.062	88.01	36.948	NONE	NONE
9778	TREE	B	6/15/2017	3.46	N/A	48.66	87.45	38.79	NONE	NONE
9803	TREE	B	6/15/2017	9.09	N/A	49.384	86.92	37.536	NONE	NONE
9843	TREE	B	6/15/2017	17.64	N/A	52.325	86.86	34.535	NONE	NONE
9523	TREE	B	6/15/2017	13.61	N/A	50.155	86.41	36.255	NONE	NONE
9794	TREE	B	6/15/2017	5.27	N/A	48.61	86.38	37.77	NONE	NONE
9520	TREE	B	6/15/2017	13.22	N/A	51.911	85.85	33.939	NONE	NONE
9805	TREE	B	6/15/2017	6.32	N/A	49.318	85.8	36.482	NONE	NONE
9793	TREE	B	6/15/2017	1.18	N/A	48.302	83.54	35.238	NONE	NONE
9767	TREE	B	6/15/2017	-4.46	N/A	47.956	83.49	35.534	NONE	NONE
9784	TREE	B	6/15/2017	-1.55	N/A	48.274	82.92	34.646	NONE	NONE
9785	TREE	B	6/15/2017	-2.24	N/A	48.318	82.92	34.602	NONE	NONE
9521	TREE	B	6/15/2017	9.14	N/A	51.658	82.44	30.782	NONE	NONE
9847	TREE	B	6/15/2017	6.94	N/A	50.638	82.32	31.682	NONE	NONE
9769	TREE	B	6/15/2017	-6.75	N/A	47.173	81.79	34.617	NONE	NONE
9783	TREE	B	6/15/2017	-2.5	N/A	48.477	81.78	33.303	NONE	NONE
9852	TREE	B	6/15/2017	7.7	N/A	49.328	81.76	32.432	NONE	NONE
9766	TREE	B	6/15/2017	-5.68	N/A	48.318	79.53	31.212	NONE	NONE
9773	TREE	B	6/15/2017	-7.01	N/A	47.228	79.53	32.302	NONE	NONE
9781	TREE	B	6/15/2017	-3.46	N/A	50.507	79.5	28.993	NONE	NONE
9782	TREE	B	6/15/2017	-4.08	N/A	50.634	78.93	28.296	NONE	NONE
9788	TREE	B	6/15/2017	-3.46	N/A	48.029	78.38	30.351	NONE	NONE
9850	TREE	B	6/15/2017	6.14	N/A	51.539	77.78	26.241	NONE	NONE
9810	TREE	B	6/15/2017	-7.87	N/A	48.692	77.29	28.598	NONE	NONE
9776	TREE	B	6/15/2017	-9.59	N/A	48.874	77.25	28.376	NONE	NONE
9780	TREE	B	6/15/2017	-5.27	N/A	47.801	76.09	28.289	NONE	NONE
9811	TREE	B	6/15/2017	-9.46	N/A	48.82	75.59	26.77	NONE	NONE
9851	TREE	B	6/15/2017	2.08	N/A	50.829	74.94	24.111	NONE	NONE
9528	TREE	B	6/15/2017	0.43	N/A	52.292	72.23	19.938	NONE	NONE
9519	TREE	B	6/15/2017	1.84	N/A	53.416	71.08	17.664	NONE	NONE
9524	TREE	B	6/15/2017	-2.22	N/A	51.449	68.81	17.361	NONE	NONE
9534	BLDG	C	6/15/2017	41.54	N/A	53.877	114.52	60.643	NONE	NONE
9467	POLE	C	6/15/2017	8.18	N/A	50.202	95.04	44.838	NONE	NONE
9538	BLDG	C	6/15/2017	15.58	N/A	54.712	92.19	37.478	NONE	NONE
9543	BLDG	C	6/15/2017	16.22	N/A	54.636	92.19	37.554	NONE	NONE
9542	BLDG	C	6/15/2017	16.55	N/A	54.589	91.9	37.311	NONE	NONE
9539	BLDG	C	6/15/2017	15.91	N/A	54.78	91.62	36.84	NONE	NONE
9541	BLDG	C	6/15/2017	17.18	N/A	54.461	91.62	37.159	NONE	NONE
9533	POLE	C	6/15/2017	18.34	N/A	53.69	90.46	36.77	NONE	NONE
9711	TREE	C	6/15/2017	-2.68	N/A	48.935	87.4	38.465	NONE	NONE
9471	BLDG	C	6/15/2017	12.92	N/A	54.739	87.37	32.631	NONE	NONE
9472	BLDG	C	6/15/2017	13.48	N/A	54.624	87.37	32.746	NONE	NONE
9473	BLDG	C	6/15/2017	13.79	N/A	54.366	87.37	33.004	NONE	NONE
9706	TREE	C	6/15/2017	-4.71	N/A	49.103	85.7	36.597	NONE	NONE
9816	TREE	C	6/15/2017	16.99	N/A	47.155	85.14	37.985	NONE	NONE
9460	POLE	C	6/15/2017	2.43	N/A	49.743	84.87	35.127	NONE	NONE
9459	POLE	C	6/15/2017	5.52	N/A	52.765	84.86	32.095	NONE	NONE
9455	POLE	C	6/15/2017	-1.75	N/A	49.587	84.58	34.993	NONE	NONE

RUNWAY 14 SIGNIFICANT OBJECT TABLE - 3

OBJECT ID	DESCRIPTION	GROUP	SURVEY DATE	EXISTING 40:1 DEPARTURE SURFACE PENETRATION	FUTURE 40:1 DEPARTURE SURFACE PENETRATION	GROUND ELEVATION (MSL)	OBJECT ELEVATION (MSL)	OBJECT ELEVATION (AGL)	TRIGGERING EVENT	PROPOSED DISPOSITION
9464	POLE	C	6/15/2017	-0.49	N/A	50.924	82.62	31.696	NONE	NONE
9840	TREE	C	6/15/2017	15.39	N/A	53.074	81.75	28.676	NONE	NONE
9497	POLE	C	6/15/2017	4.35	N/A	53.558	81.52	27.962	NONE	NONE
9456	POLE	C	6/15/2017	-4.44	N/A	49.473	81.46	31.987	NONE	NONE
9817	TREE	C	6/15/2017	13.04	N/A	46.585	81.17	34.585	NONE	NONE
9503	TREE	C	6/15/2017	8.03	N/A	52.576	80.42	27.844	NONE	NONE
9458	POLE	C	6/15/2017	-4.03	N/A	50.149	80.32	30.171	NONE	NONE
9825	TREE	C	6/15/2017	12.55	N/A	46.738	80.04	33.302	NONE	NONE
9481	TREE	C	6/15/2017	4.53	N/A	53.77	79.88	26.11	NONE	NONE
9463	POLE	C	6/15/2017	5.73	N/A	54.043	79.81	25.767	NONE	NONE
9465	POLE	C	6/15/2017	-0.52	N/A	52.716	79.19	26.474	NONE	NONE
9824	TREE	C	6/15/2017	10.3	N/A	47.374	78.34	30.966	NONE	NONE
9490	TREE	C	6/15/2017	4.43	N/A	52.591	78.18	25.589	NONE	NONE
9537	POLE	C	6/15/2017	6.78	N/A	53.64	77.41	23.77	NONE	NONE
9483	TREE	C	6/15/2017	3.27	N/A	53.604	76.48	22.876	NONE	NONE
9484	TREE	C	6/15/2017	0.56	N/A	53.451	76.46	23.009	NONE	NONE
9498	TREE	C	6/15/2017	6.37	N/A	52.829	75.85	23.021	NONE	NONE
8771	TREE	C	6/15/2017	-1.22	N/A	53.247	75.73	22.483	NONE	NONE
9491	TREE	C	6/15/2017	1.38	N/A	53.232	75.34	22.108	NONE	NONE
9494	TREE	C	6/15/2017	4.26	N/A	53.015	73.58	20.565	NONE	NONE
8772	TREE	C	6/15/2017	-4.36	N/A	53.156	72.32	19.164	NONE	NONE
8773	TREE	C	6/15/2017	-4.46	N/A	53.286	72.32	19.034	NONE	NONE
9823	TREE	C	6/15/2017	5.18	N/A	52.507	71.53	19.023	NONE	NONE
9499	TREE	C	6/15/2017	2.17	N/A	53.03	71.31	18.28	NONE	NONE
9482	TREE	C	6/15/2017	-2.51	N/A	53.597	70.8	17.203	NONE	NONE
9485	TREE	C	6/15/2017	-5.03	N/A	53.417	70.78	17.363	NONE	NONE
9496	TREE	C	6/15/2017	-0.73	N/A	54.113	70.75	16.637	NONE	NONE
9857	TREE	C	6/15/2017	3.98	N/A	52.27	70.4	18.13	NONE	NONE
9821	TREE	C	6/15/2017	1.73	N/A	51.266	69.25	17.984	NONE	NONE
9822	TREE	C	6/15/2017	1.94	N/A	50.11	69.25	19.14	NONE	NONE
9492	TREE	C	6/15/2017	-6.12	N/A	53.847	69.1	15.253	NONE	NONE
8769	TREE	C	6/15/2017	-8.6	N/A	53.661	68.92	15.259	NONE	NONE
9826	TREE	C	6/15/2017	1.63	N/A	52.205	68.68	16.475	NONE	NONE
9827	TREE	C	6/15/2017	9.41	N/A	50.381	68.66	18.279	NONE	NONE
8768	TREE	C	6/15/2017	-8.77	N/A	53.486	68.35	14.864	NONE	NONE
9489	TREE	C	6/15/2017	-7.79	N/A	54.597	67.96	13.363	NONE	NONE
9488	TREE	C	6/15/2017	-8.19	N/A	54.369	67.39	13.021	NONE	NONE
9557	TREE	C	6/15/2017	-8.49	N/A	54.786	67.39	12.604	NONE	NONE
9838	TREE	C	6/15/2017	8.29	N/A	51.062	66.65	15.588	NONE	NONE
9487	TREE	C	6/15/2017	-9.08	N/A	53.961	66.25	12.289	NONE	NONE
9495	TREE	C	6/15/2017	-2.97	N/A	53.306	66.2	12.894	NONE	NONE
9830	TREE	C	6/15/2017	7.33	N/A	51.772	63.24	11.468	NONE	NONE
9837	TREE	C	6/15/2017	7.91	N/A	52.469	63.24	10.771	NONE	NONE
9815	TREE	C	6/15/2017	-1.64	N/A	50.212	62.42	12.208	NONE	NONE
9836	TREE	C	6/15/2017	-2.01	N/A	53.139	60.42	7.281	NONE	NONE
9819	TREE	C	6/15/2017	-1.26	N/A	49.787	60.14	10.353	NONE	NONE
9818	TREE	C	6/15/2017	-1.29	N/A	49.941	59.57	9.629	NONE	NONE
9820	TREE	C	6/15/2017	-3.68	N/A	49.826	59	9.174	NONE	NONE
9835	BLDG	C	6/15/2017	-2.81	N/A	52.373	58.15	5.777	NONE	NONE
9839	TREE	C	6/15/2017	1.01	N/A	52.285	57.56	5.275	NONE	NONE

NOTE: PLEASE SEE THE INNER-APPROACH DATA TABLES (SHEET 13) FOR THE DEPARTURE SURFACES TRAVERSEWAY TABLE

DECLINATION 6° 21' W

DECEMBER 2019
ANNUAL RATE OF CHANGE
0° 5' W

HORIZONTAL SCALE
0 2000 4000 Feet

VERTICAL SCALE
0 2000 4000 Feet

LEGEND

EXISTING	FUTURE	DESCRIPTION
PL	FPL	PROPERTY LINE
	N/A	EASEMENTS
DS	SAME	DEPARTURE SURFACE
20'	SAME	TOPOGRAPHIC CONTOUR LINES
N/A		TAXIWAYS AND RUNWAYS
N/A		APRONS
N/A		PUBLIC ROADS
N/A		PAVEMENT TO BE REMOVED
N/A		PLANNED COMMERCIAL DEVELOPMENT
N/A		PLANNED RAIL RE-ALIGNMENT
N/A		PLANNED ON-AIRPORT BUILDINGS
N/A		PLANNED STORM WATER INFRASTRUCTURE
N/A		NON-AERONAUTICAL LAND
	SAME	VEGETATION PENETRATIONS
	SAME	OTHER PENETRATIONS
	SAME	BUILDING PENETRATIONS

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SHEET TITLE
RUNWAY 14-32 DEPARTURE SURFACE
PLAN & PROFILE

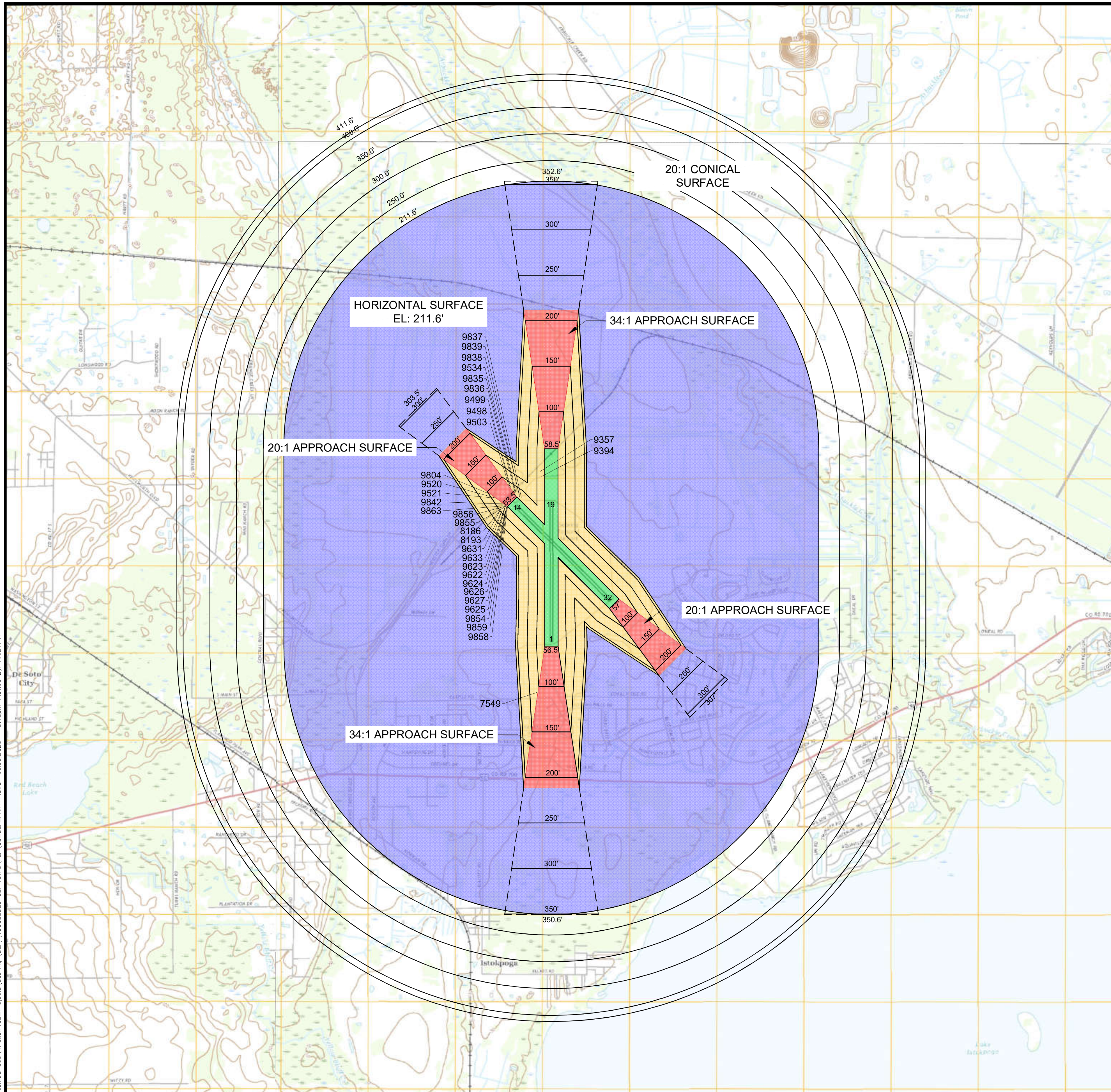
PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

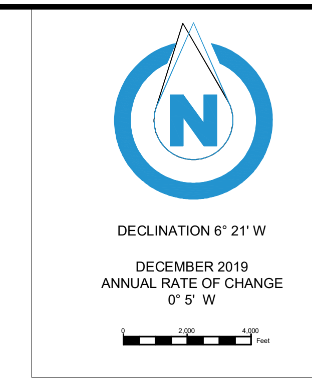
CLIENT
SEBRING
MULTIMODAL LOGISTICS CENTER

REVISIONS
DESCRIPTION
DATE

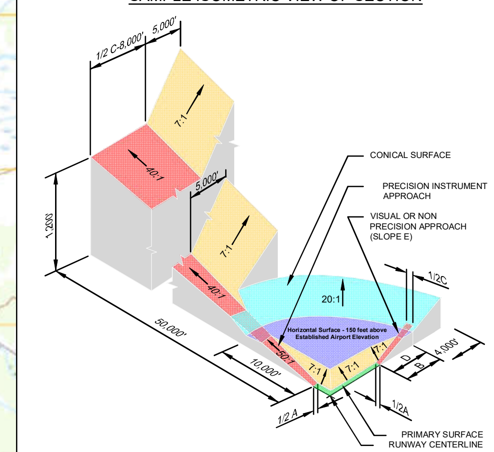
JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

SHEET 15 OF 22





SAMPLE ISOMETRIC VIEW OF SECTION



14 CFR PART 77 SURFACES

- Primary Surface
- Approach Surface
- Transitional Surface
- Horizontal Surface
- Conical Surface

14 CFR PART 77 SURFACES

DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	B: C	B: D	
A	WIDTH OF PRIMARY SURFACE AND APPROACH SURFACE WIDTH AT INNER END	250	500	500	500	1,000	1,000
B	RADIUS OF HORIZONTAL SURFACE	5,000	5,000	5,000	10,000	10,000	10,000
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY			PRECISION INSTRUMENT RUNWAY
		A	B	A	B: C	B: D	
C	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	16,000
D	APPROACH SURFACE LENGTH	5,000	5,000	5,000	10,000	10,000	*
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	*
F	APPROACH FLARE	0.1:1	0.1:1	0.15:1	0.15:1	0.15:1	0.15:1

A - UTILITY RUNWAYS
B - RUNWAYS LARGER THAN UTILITY
C - VISIBILITY MINIMUMS GREATER THAN 3/4 MILES
D - VISIBILITY MINIMUMS AS LOW AS 3/4 MILE
* - PRECISION INSTRUMENT APPROACH SLOPE IS 50:1 FOR INNER 10,000 FEET AND 40:1 FOR AN ADDITIONAL 40,000 FEET

NOTES:

1. FEDERAL AVIATION REGULATIONS PART 77, STATES THAT A STRUCTURE IS PRESUMED TO HAVE A SUBSTANTIAL ADVERSE EFFECT UPON THE SAFE AND EFFICIENT USE OF NAVIGABLE AIRSPACE IF ITS HEIGHT EXCEEDS THE FOLLOWING STANDARDS:
   1.1. A HEIGHT OF FIVE HUNDRED (500) FEET ABOVE GROUND LEVEL AT THE SITE OF THE OBJECT ANYWHERE IN THE STATE.
   1.2. A HEIGHT THAT IS TWO HUNDRED (200) FEET ABOVE GROUND LEVEL OR ABOVE THE ESTABLISHED AIRPORT ELEVATION, WHICHEVER IS HIGHER, WITHIN THREE (3) NAUTICAL MILES OF THE ESTABLISHED REFERENCED POINT OF A PUBLIC-USE AIRPORT, EXCLUDING HELIPORTS, AND THE HEIGHT INCREASES IN THE PROPORTION OF ONE HUNDRED (100) FEET FOR EACH ADDITIONAL NAUTICAL MILE OF DISTANCE FROM THE AIRPORT UP TO A MAXIMUM OF FIVE HUNDRED (500) FEET.
   1.3. A HEIGHT WITHIN A TERMINAL OBSTACLE CLEARANCE AREA, INCLUDING AN INITIAL APPROACH SEGMENT, A DEPARTURE AREA, AND A CIRCLING APPROACH AREA, AS DEFINED BY FEDERAL LAWS AND REGULATIONS, WHICH WOULD RESULT IN THE VERTICAL DISTANCE BETWEEN ANY POINT ON THE OBJECT AND AN ESTABLISHED MINIMUM INSTRUMENT FLIGHT ALTITUDE WITHIN THAT AREA OR SEGMENT TO BE LESS THAN THE REQUIRED OBSTACLE CLEARANCE.
   1.4. A HEIGHT WITHIN AN EN ROUTE OBSTACLE CLEARANCE AREA, AS DEFINED BY FEDERAL LAWS AND REGULATIONS, INCLUDING TURN AND TERMINATION AREAS, OF A FEDERAL AIRWAY OR APPROVED OFF-AIRWAY ROUTE, THAT WOULD INCREASE THE MINIMUM OBSTACLE CLEARANCE ALTITUDE.
   1.5. THE SURFACE OF A TAKEOFF AND LANDING AREA OF A PUBLIC-USE AIRPORT OR ANY IMAGINARY SURFACE AS ESTABLISHED BY FAR PART 77. HOWEVER, NO PART OF THE TAKEOFF OR LANDING AREA ITSELF WILL BE CONSIDERED TO BE AN OBSTRUCTION.
2. CHAPTER 333 OF TITLE XXV - SECTIONS 01 THROUGH 135 OF THE 2018 FLORIDA STATUTES CONTAINS FURTHER INFORMATION REGARDING THE PROTECTION OF LAND USE WITHIN AIRPORT AIRSPACE.
3. 14 CFR PART 77 IMAGINARY SURFACES ARE AS SHOWN ON THIS SHEET FOR SEBRING REGIONAL AIRPORT (SEF). THESE SURFACES ARE DEPICTED BASED UPON ULTIMATE AIRPORT DEVELOPMENT.
4. ALL ELEVATIONS SHOWN IN FEET ABOVE MEAN SEA LEVEL (AMSL) AND BASED UPON NAVD 88 UNLESS OTHERWISE NOTED.
5. OBSTRUCTION SURVEY COMPLETED BY QUANTUM SPATIAL ON 06/04/2017.

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SHEET TITLE: AIRPORT AIRSPACE - 1

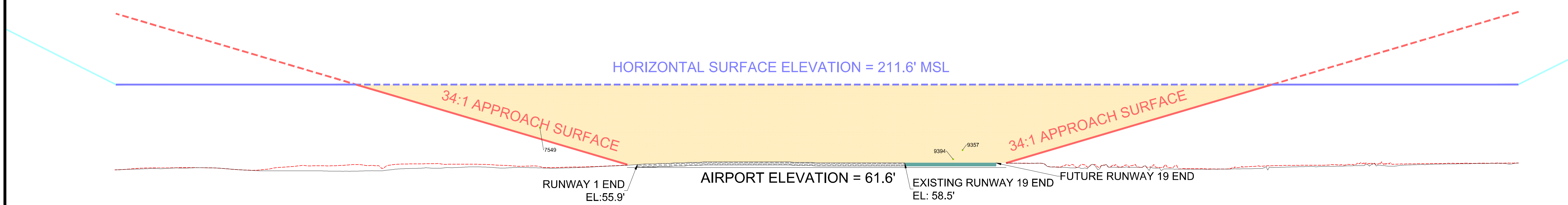
PROJECT: AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT: SEBRING MULTIMODAL LOGISTICS CENTER

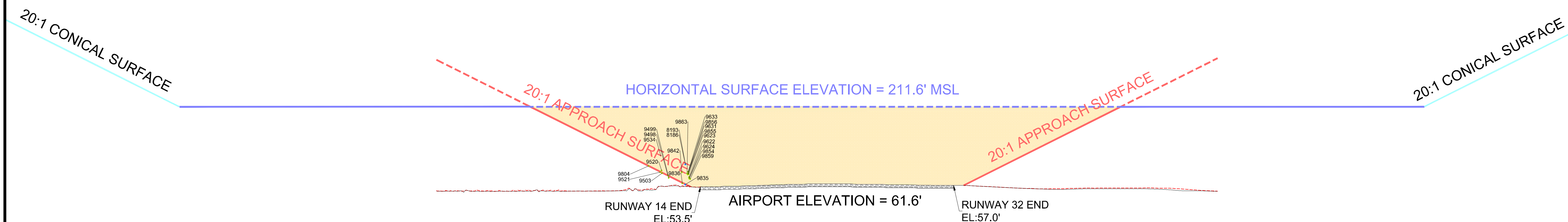
REVISIONS	
DATE	DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

RUNWAY 1-19 AIRSPACE PROFILE VIEW



RUNWAY 14-32 AIRSPACE PROFILE VIEW



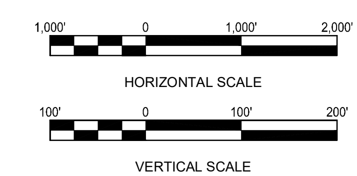
14 CFR PART 77 SURFACE OBSTRUCTIONS										
OBJECT ID	DESCRIPTION	SURVEY DATE	OBSTRUCTION HEIGHT (MSL)	OBSTRUCTION HEIGHT (AGL)	GROUND ELEVATION (MSL)	SURFACE PENETRATING	PENTRATING AMOUNT	PROPOSED DISPOSITION	LONGITUDE	LATITUDE
8186	BLDG	2/12/2019	97.57	40.43	57.14	TRANSITIONAL	6.64	NONE	W081° 20' 55.96"	N027° 27' 42.64"
8193	BLDG	2/12/2019	97.79	40.33	57.46	TRANSITIONAL	3.00	NONE	W081° 20' 56.16"	N027° 27' 42.44"
9498	TREE	2/12/2019	75.85	21.52	54.33	TRANSITIONAL	-0.51	REMOVE/TRIM	W081° 20' 52.28"	N027° 27' 50.74"
9499	TREE	2/12/2019	71.31	18.34	52.97	TRANSITIONAL	-7.23	REMOVE/TRIM	W081° 20' 52.04"	N027° 27' 50.77"
9503	TREE	2/12/2019	80.42	28.42	52.00	TRANSITIONAL	-4.10	REMOVE/TRIM	W081° 20' 52.94"	N027° 27' 51.79"
9520	TREE	2/12/2019	85.85	34.85	51.00	TRANSITIONAL	1.78	REMOVE/TRIM	W081° 20' 58.53"	N027° 27' 46.90"
9521	TREE	2/12/2019	82.44	31.44	51.01	TRANSITIONAL	-8.44	REMOVE/TRIM	W081° 20' 59.07"	N027° 27' 46.79"
9534	BLDG	2/12/2019	114.52	60.53	53.99	TRANSITIONAL	-9.16	NONE	W081° 20' 51.01"	N027° 27' 53.84"
9622	TREE	2/12/2019	72.51	17.27	55.24	TRANSITIONAL	-0.54	REMOVE/TRIM	W081° 20' 54.52"	N027° 27' 42.91"
9623	TREE	2/12/2019	78.76	23.68	55.09	TRANSITIONAL	6.85	REMOVE/TRIM	W081° 20' 54.51"	N027° 27' 43.04"
9624	TREE	2/12/2019	70.81	15.81	55.00	TRANSITIONAL	-0.65	REMOVE/TRIM	W081° 20' 54.39"	N027° 27' 42.93"
9625	TREE	2/12/2019	77.62	22.62	55.00	TRANSITIONAL	1.27	REMOVE/TRIM	W081° 20' 54.01"	N027° 27' 42.07"
9626	TREE	2/12/2019	71.37	16.37	55.00	TRANSITIONAL	-5.89	REMOVE/TRIM	W081° 20' 54.13"	N027° 27' 42.08"
9627	TREE	2/12/2019	77.05	22.05	55.00	TRANSITIONAL	-0.67	REMOVE/TRIM	W081° 20' 54.08"	N027° 27' 42.00"
9631	TREE	2/12/2019	82.73	25.07	57.66	TRANSITIONAL	-5.11	REMOVE/TRIM	W081° 20' 55.43"	N027° 27' 42.32"
9633	TREE	2/12/2019	83.30	25.27	58.03	TRANSITIONAL	-7.35	REMOVE/TRIM	W081° 20' 55.59"	N027° 27' 42.18"
9804	TREE	2/12/2019	94.86	45.24	49.62	TRANSITIONAL	-3.51	REMOVE/TRIM	W081° 21' 00.92"	N027° 27' 48.32"
9835	BLDG	2/12/2019	58.15	5.16	52.99	TRANSITIONAL	-7.28	NONE	W081° 20' 49.67"	N027° 27' 48.30"
9836	TREE	2/12/2019	60.42	6.65	53.77	TRANSITIONAL	-6.94	REMOVE/TRIM	W081° 20' 50.12"	N027° 27' 48.72"
9837	TREE	2/12/2019	63.24	10.95	52.29	TRANSITIONAL	-5.94	REMOVE/TRIM	W081° 20' 47.54"	N027° 27' 47.05"
9838	TREE	2/12/2019	66.65	15.65	51.00	TRANSITIONAL	-5.18	REMOVE/TRIM	W081° 20' 48.35"	N027° 27' 48.03"
9839	TREE	2/12/2019	57.56	5.55	52.01	TRANSITIONAL	-6.37	REMOVE/TRIM	W081° 20' 48.21"	N027° 27' 47.13"
9842	TREE	2/12/2019	82.32	25.32	57.00	TRANSITIONAL	20.31	REMOVE/TRIM	W081° 20' 54.81"	N027° 27' 44.65"
9854	TREE	2/12/2019	69.83	15.66	54.17	TRANSITIONAL	12.52	REMOVE/TRIM	W081° 20' 53.64"	N027° 27' 43.66"
9855	TREE	2/12/2019	79.20	24.85	54.36	TRANSITIONAL	18.57	REMOVE/TRIM	W081° 20' 53.98"	N027° 27' 43.71"
9856	TREE	2/12/2019	77.78	23.56	54.22	TRANSITIONAL	19.06	REMOVE/TRIM	W081° 20' 53.87"	N027° 27' 43.80"
9858	TREE	2/12/2019	66.14	12.08	54.06	TRANSITIONAL	10.54	REMOVE/TRIM	W081° 20' 53.24"	N027° 27' 43.41"
9859	TREE	2/12/2019	68.98	14.79	54.19	TRANSITIONAL	11.76	REMOVE/TRIM	W081° 20' 53.50"	N027° 27' 43.49"
9863	TREE	2/12/2019	79.48	25.13	54.35	TRANSITIONAL	20.59	REMOVE/TRIM	W081° 20' 53.99"	N027° 27' 43.93"
7549	TREE	2/12/2019	128.47	76.31	52.17	TRANSITIONAL	15.81	REMOVE/TRIM	W081° 20' 40.92"	N027° 26' 34.89"
9357	TREE	2/12/2019	83.92	34.92	49.00	TRANSITIONAL	0.00	REMOVE/TRIM	W081° 20' 39.83"	N027° 27' 56.59"
9394	TREE	2/12/2019	66.28	17.00	49.29	TRANSITIONAL	-9.25	REMOVE/TRIM	W081° 20' 39.17"	N027° 27' 54.81"

14 CFR PART 77 SURFACES

- Primary Surface
- Approach Surface
- Transitional Surface
- Horizontal Surface
- Conical Surface

PROFILES LEGEND		
EXISTING	FUTURE	DESCRIPTION
	SAME	CRITICAL APPROACH SURFACE
	SAME	CRITICAL HORIZONTAL SURFACE
	SAME	TRANSITIONAL SURFACE
	SAME	COMPOSITE CRITICAL GROUND PROFILE[1]
	SAME	EXTENDED RUNWAY CENTERLINE
		RUNWAY
	SAME	VEGETATION OBSTRUCTIONS[2]
	SAME	OTHER OBSTRUCTIONS[2]

1. THE COMPOSITE CRITICAL GROUND PROFILE FOR EACH SURFACE WAS GENERATED FROM THE CRITICAL GROUND PROFILES OF ALIGNMENTS SET AT SPECIFIC INTERVALS WITHIN THE SURFACE ALONG THE SURVEYED GROUND TOPOGRAPHY.
2. SURVEYED OBSTACLES WITHIN 10' OF PENETRATING ANY SURFACE WERE INCLUDED IN THIS ANALYSIS.



NOTES:

1. FEDERAL AVIATION REGULATIONS 14 CFR PART 77, STATES THAT A STRUCTURE IS PRESUMED TO HAVE A SUBSTANTIAL ADVERSE EFFECT UPON THE SAFE AND EFFICIENT USE OF NAVIGABLE AIRSPACE IF ITS HEIGHT EXCEEDS THE FOLLOWING STANDARDS:
   - 1.1. A HEIGHT OF FIVE HUNDRED (500) FEET ABOVE GROUND LEVEL AT THE SITE OF THE OBJECT ANYWHERE IN THE STATE.
   - 1.2. A HEIGHT THAT IS TWO HUNDRED (200) FEET ABOVE GROUND LEVEL OR ABOVE THE ESTABLISHED AIRPORT ELEVATION, WHICHEVER IS HIGHER, WITHIN THREE (3) NAUTICAL MILES OF THE ESTABLISHED REFERENCED POINT OF A PUBLIC-USE AIRPORT, EXCLUDING HELIPORTS, AND THE HEIGHT INCREASES IN THE PROPORTION OF ONE HUNDRED (100) FEET FOR EACH ADDITIONAL NAUTICAL MILE OF DISTANCE FROM THE AIRPORT UP TO A MAXIMUM OF FIVE HUNDRED (500) FEET.
   - 1.3. A HEIGHT WITHIN A TERMINAL OBSTACLE CLEARANCE AREA, INCLUDING AN INITIAL APPROACH SEGMENT, A DEPARTURE AREA, AND A CIRCLING APPROACH AREA, AS DEFINED BY FEDERAL LAWS AND REGULATIONS, WHICH WOULD RESULT IN THE VERTICAL DISTANCE BETWEEN ANY POINT ON THE OBJECT AND AN ESTABLISHED MINIMUM INSTRUMENT FLIGHT ALTITUDE WITHIN THAT AREA OR SEGMENT TO BE LESS THAN THE REQUIRED OBSTACLE CLEARANCE.
   - 1.4. A HEIGHT WITHIN AN EN ROUTE OBSTACLE CLEARANCE AREA, AS DEFINED BY FEDERAL LAWS AND REGULATIONS, INCLUDING TURN AND TERMINATION AREAS, OF A FEDERAL AIRWAY OR APPROVED OFF-AIRWAY ROUTE, THAT WOULD INCREASE THE MINIMUM OBSTACLE CLEARANCE ALTITUDE.
   - 1.5. THE SURFACE OF A TAKEOFF AND LANDING AREA OF A PUBLIC-USE AIRPORT OR ANY IMAGINARY SURFACE AS ESTABLISHED BY FAR PART 77. HOWEVER, NO PART OF THE TAKEOFF OR LANDING AREA ITSELF WILL BE CONSIDERED TO BE AN OBSTRUCTION.
2. CHAPTER 333 OF TITLE XXV - SECTIONS 01 THROUGH 135 OF THE 2018 FLORIDA STATUTES CONTAINS FURTHER INFORMATION REGARDING THE PROTECTION OF LAND USE WITHIN AIRPORT AIRSPACE.
3. IMAGINARY SURFACES ARE AS SHOWN ON THIS SHEET FOR SEBRING REGIONAL AIRPORT (SE). THESE SURFACES ARE DEPICTED BASED UPON EXISTING AND ULTIMATE AIRPORT DEVELOPMENT.
4. ALL ELEVATIONS SHOWN IN FEET ABOVE MEAN SEA LEVEL (AMSL) AND BASED UPON NAVD 88 UNLESS OTHERWISE NOTED.

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SHEET TITLE
AIRPORT AIRSPACE - 2

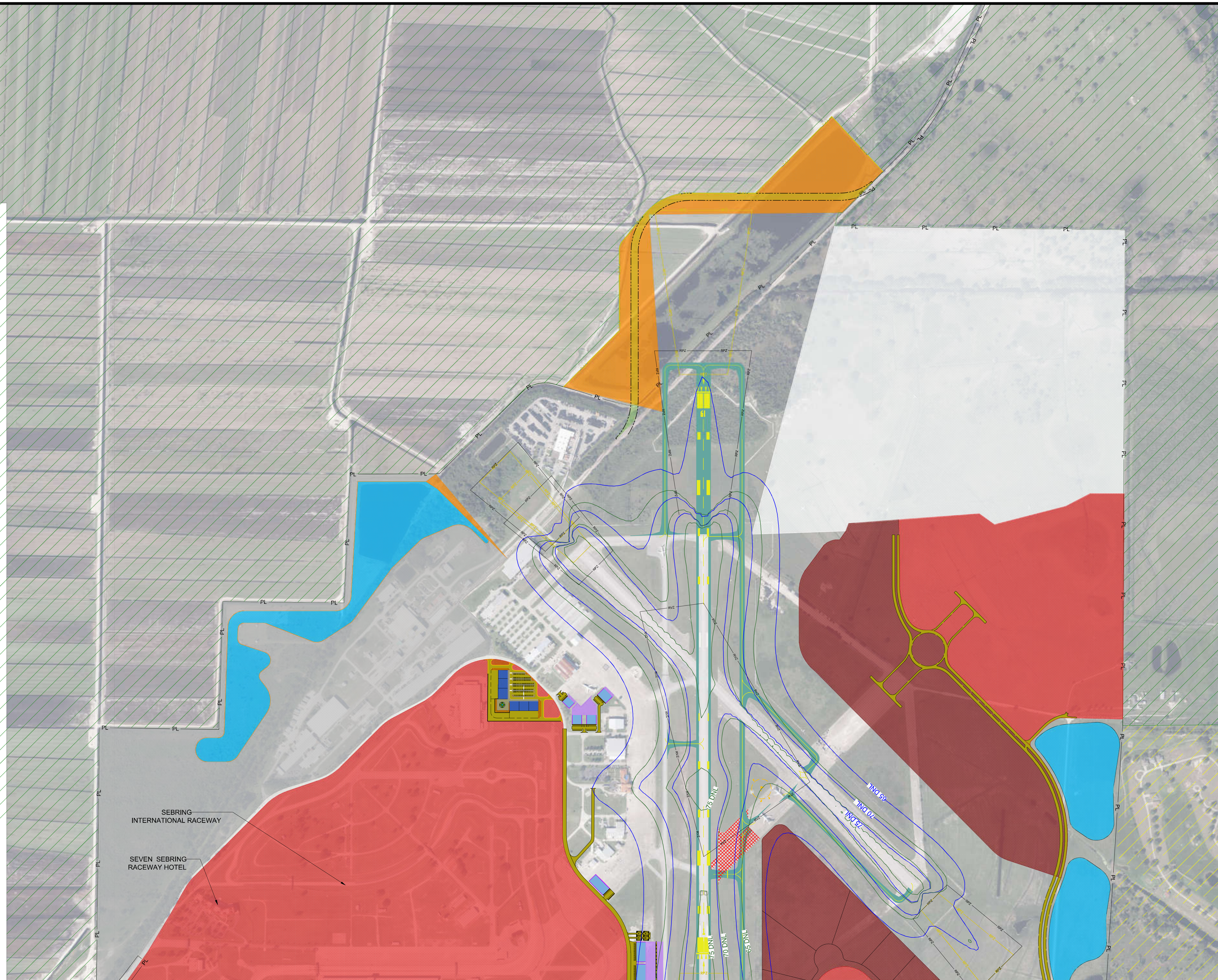
PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING
MULTIMODAL LOGISTICS CENTER

REVISIONS
DATE | DESCRIPTION

JOB NO.: 100055323
DRAWN: KAK, CMH
DESIGN: KAK, CMH
CHECKED: PH
DATE: JULY 2020

SHEET 17 OF 22



DECLINATION 6° 21' W

DECEMBER 2019
ANNUAL RATE OF CHANGE
0° 5' W

0 500 1000 Feet

LEGEND		
EXISTING	FUTURE	DESCRIPTION
PL	FPL	PROPERTY LINE
RPZ	RPZ	RUNWAY PROTECTION XONE
RVZ	RVZ	RUNWAY VISIBILITY ZONE
N/A		TAXIWAYS AND RUNWAYS
N/A		APRONS
N/A		PUBLIC ROADS
N/A		PAVEMENT TO BE REMOVED
N/A		PLANNED COMMERCIAL DEVELOPMENT
		RAIL TRACKS
N/A		ON-AIRPORT BUILDINGS
N/A		NON-AERONAUTICAL LAND
		NOISE CONTOUR

ON-AIRPORT LAND USE

- AIRFIELD
- AVIATION SUPPORT
- COMMERCIAL
- COMMERCIAL / INDUSTRIAL
- INDUSTRIAL
- UNDEVELOPED
- DRAINAGE

CITY OF SEBRING ZONING

- AGRICULTURE
- RESIDENTIAL

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SHEET TITLE
LAND USE PLAN - NORTH

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING MULTIMODAL LOGISTICS CENTER

REVISIONS	
DATE	DESCRIPTION

JOB NO.: 100055323
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CHECKED: PH
DATE: JULY 2020

SHEET 18 OF 22

DECLINATION 6° 21' W

DECEMBER 2019
ANNUAL RATE OF CHANGE
0° 5' W

0 500 1000 Feet

LEGEND

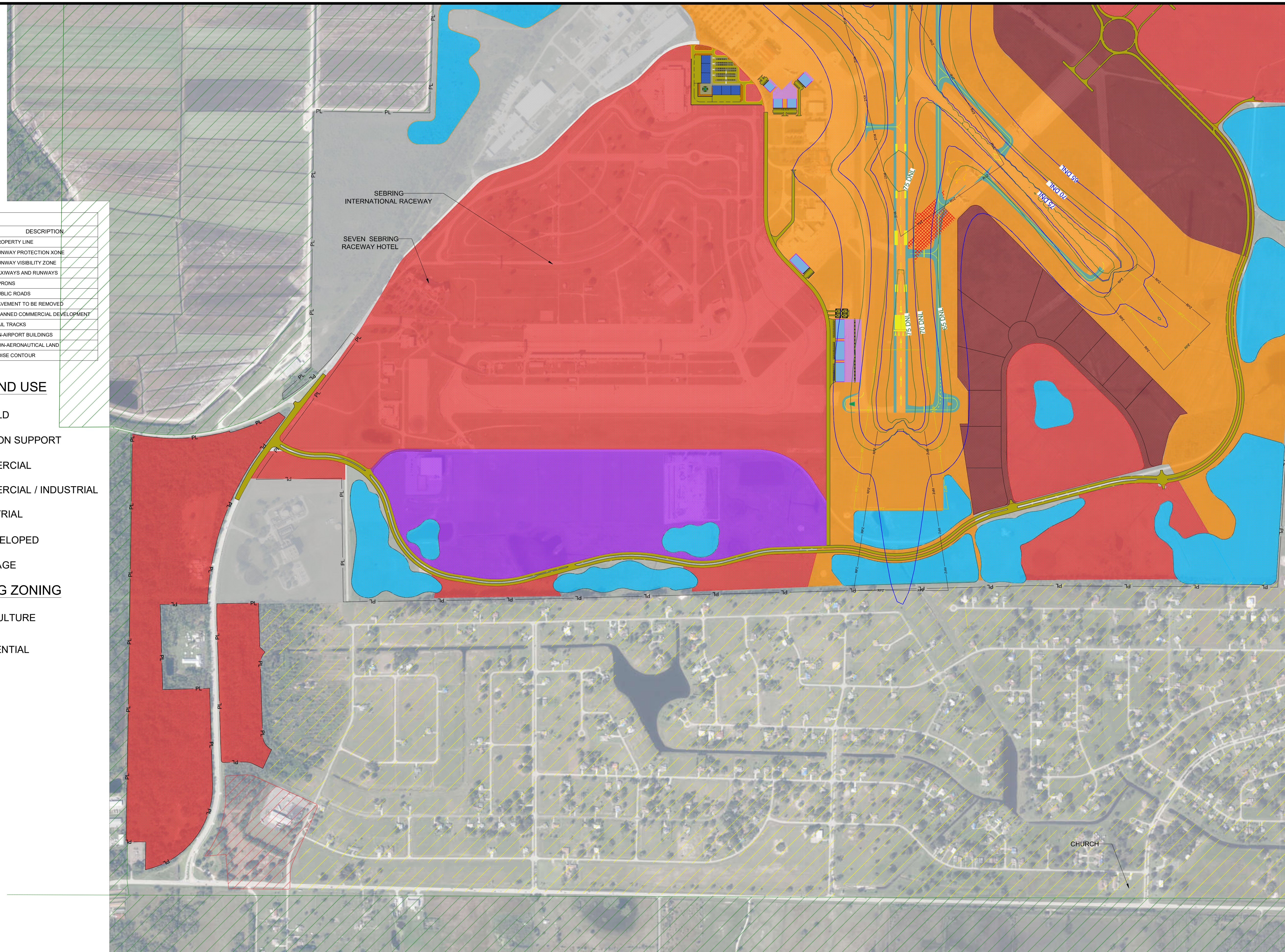
EXISTING	FUTURE	DESCRIPTION
PL	FPL	PROPERTY LINE
RPZ	RPZ	RUNWAY PROTECTION ZONE
RVZ	RVZ	RUNWAY VISIBILITY ZONE
N/A		TAXIWAYS AND RUNWAYS
N/A		APRONS
N/A		PUBLIC ROADS
N/A		PAVEMENT TO BE REMOVED
N/A		PLANNED COMMERCIAL DEVELOPMENT
		RAIL TRACKS
N/A		ON-AIRPORT BUILDINGS
N/A		NON-AERONAUTICAL LAND
		NOISE CONTOUR

ON-AIRPORT LAND USE

- AIRFIELD
- AVIATION SUPPORT
- COMMERCIAL
- COMMERCIAL / INDUSTRIAL
- INDUSTRIAL
- UNDEVELOPED
- DRAINAGE

CITY OF SEBRING ZONING

- AGRICULTURE
- RESIDENTIAL



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SHEET TITLE
LAND USE PLAN - SOUTH

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

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MULTIMODAL LOGISTICS CENTER

REVISIONS
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JOB NO.: 100055323
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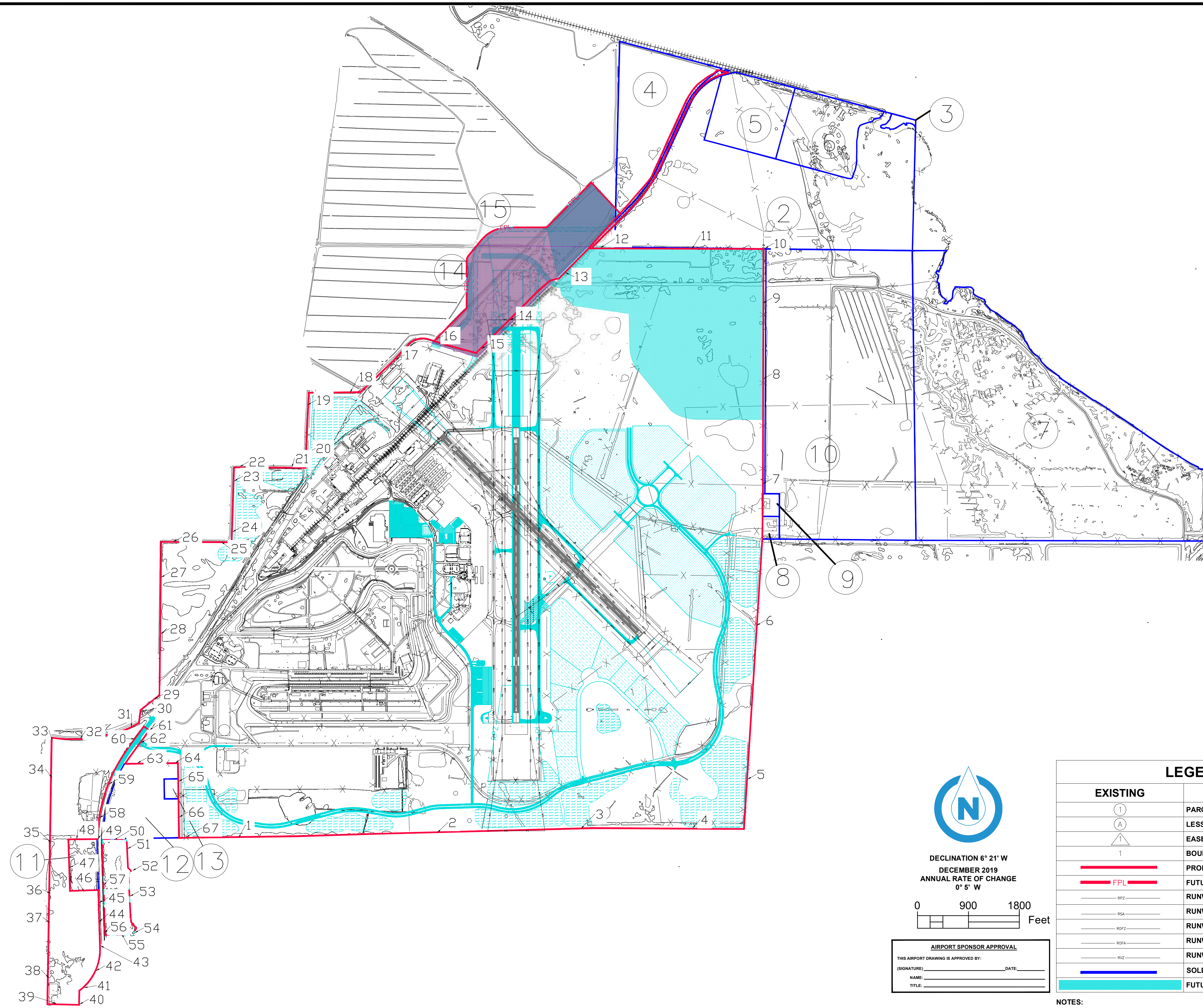
SHEET 19 OF 22



AIRPORT SPONSOR APPROVAL

THIS AIRPORT DRAWING IS APPROVED BY:

(SIGNATURE) ______________________ DATE: __________

NAME: ______________________

TITLE: ______________________

LEGEND

EXISTING	DESCRIPTION
(1)	PARCEL ID
(A)	LESS OUT PARCEL ID
△1	EASEMENT ID
1	BOUNDARY ID
	PROPERTY BOUNDARY LINE
FPL	FUTURE BOUNDARY LINE
RPZ	RUNWAY PROTECTION ZONE (RPZ)
RSA	RUNWAY SAFETY AREA (RSA)
ROFZ	RUNWAY OBJECT FREE ZONE (ROFZ)
ROFA	RUNWAY OBJECT FREE AREA (ROFA)
RVZ	RUNWAY VISUAL ZONE (RVZ)
	SOLD PROPERTY LINE
	FUTURE DEVELOPMENT

NOTES:
1. SEE SHEET 2 FOR PROPERTY BOUNDARY AND PARCEL DETAILS
2. PROPERTY SOLD BOUNDARIES/ACREAGE ARE NOT EXACT
3. SEE SHEET 3 FOR LESS OUT PARCEL CALL-OUT DETAILS

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SHEET TITLE
EXHIBIT "A" AIRPORT PROPERTY INVENTORY MAP

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING MULTIMODAL LOGISTICS CENTER

REVISIONS		
	DATE	DESCRIPTION

JOB NO.: 100055323
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DATE: JULY 2020

SHEET 20 OF 22

AIRPORT PROPERTY DATA TABLES

PROPERTY BOUNDARY DESCRIPTION	
NUMBER	DESCRIPTION
1	N89° 10' 33.05"E 2041.881
2	N88° 33' 23.87"E 1792.713
3	N88° 28' 45.50"E 1942.733
4	S89° 39' 24.69"E 2649.563
5	N03° 36' 55.60"E 5127.905
6	N03° 36' 55.60"E 5127.905
7	N00° 08' 14.28"E 4322.917
8	N00° 08' 14.28"E 4322.917
9	N00° 08' 14.28"E 4322.917
10	N89° 48' 28.53"E 3087.549
11	N89° 48' 28.53"E 3087.549
12	N89° 48' 28.53"E 3087.549
13	S44° 42' 46.68"W 746.372
14	S45° 07' 47.16"W 947.096
15	S45° 07' 47.16"W 947.096
16	N72° 55' 29.10"W 322.228
17	S46° 28' 10.57"W 789.841
18	S89° 23' 08.00"W 910.528
19	S02° 29' 37.00"W 1324.790
20	S02° 29' 37.00"W 1324.790
21	N89° 39' 57.00"W 1262.880
22	N89° 39' 57.00"W 1262.880
23	S01° 44' 38.00"W 1323.730
24	S01° 44' 38.00"W 1323.730
25	N89° 38' 29.00"W 1245.580
26	N89° 38' 29.00"W 1245.580
27	S00° 35' 44.73"W 2708.044
28	S00° 35' 44.73"W 2708.044
29	S52° 03' 42.94"W 426.003
30	S06° 43' 21.33"W 228.843
31	L=563.657, R=2378.781
32	S89° 04' 22.92"W 101.392
33	S00° 54' 13.40"W 4704.537
34	S00° 54' 13.40"W 4704.537
35	S00° 54' 13.40"W 4704.537
36	S00° 54' 13.40"W 4704.537
37	S00° 54' 13.40"W 4704.537
38	S00° 54' 13.40"W 4704.537
39	S88° 41' 09.31"E 557.356
40	S88° 41' 09.31"E 557.356
41	L=541.243, R=903.853
42	L=541.243, R=903.853
43	L=332.231, R=908.200
44	N10° 45' 37.68"W 1022.220
45	N10° 45' 37.68"W 1022.220
46	S88° 16' 41.00"W 500.00
47	N10° 45' 37.68"W 1022.220
48	N89° 12' 56.00"E 505.884
49	N89° 12' 56.00"E 505.884
50	N89° 51' 04.78"W 427.297
51	N02° 49' 31.46"W 509.562
52	L=113.786, R=160.242
53	N02° 53' 19.89"W 733.992
54	N24° 01' 14.59"E 209.814
55	N88° 09' 50.69"E 235.570
56	S01° 50' 09.32"E 1516.490
57	S01° 50' 09.32"E 1516.490
58	L=1257.997, R=2914.794
59	L=1257.997, R=2914.794
60	N36° 20' 38.74"E 441.588
61	S53° 49' 15.00"E 117.380
62	S36° 10' 45.00"W 161.484
63	N89° 10'' 33.05"E 936.942
64	N89° 10' 33.05"E 936.942
65	S00° 49' 26.95"E 1320.562
66	S00° 49' 26.95"E 1320.562
67	N89° 10' 33.05"E 2041.881

CURRENT PROPERTY											
PARCEL NUMBER	FAA/AIP GRANT	S-T-R	GRANTOR	GRANTEE	BOOK	PAGE	DATE	CURRENT ACREAGE	INTEREST	INSTRUMENT OF CONVEYANCE	PURPOSE OF ACQUISITION
1	NONE	33-34-30	United States of America	City of Sebring	23	559	2/24/1947	2,134.19	Fee Simple	Cancellation of Lease and Quit Claim	Airport Development

AIRPORT PROPERTY SOLD								
			AIRPORT SALE			FAA DEED OF RELEASE		
PARCEL NUMBER	HIGHLANDS COUNTY PROPERTY APPRAISER'S NUMBER	CURRENT OWNER	BOOK	PAGE	DATE	BOOK	PAGE	DATE
2	C-33-34-30-A00-0020-0000	Sebring Ranches of Highlands County, LLC	116	46	6/8/1949	N/A	N/A	N/A
3	C-33-34-30-A00-0030-0000	Sebring Ranches of Highlands County, LLC	116	46	6/8/1949	N/A	N/A	N/A
4	C-33-34-30-A00-0040-0000	Star Farms Corp	116	46	6/8/1949	N/A	N/A	N/A
5	C-33-34-30-A00-0050-0000	Sebring Ranches of Highlands County, LLC	116	46	6/8/1949	N/A	N/A	N/A
6	C-33-34-30-A00-0060-0000	Sebring Ranches of Highlands County, LLC	116	46	6/8/1949	N/A	N/A	N/A
7	C-03-35-30-A00-0010-0000	Sebring Ranches of Highlands County, LLC	116	46	6/8/1949	N/A	N/A	N/A
8	C-04-35-30-A00-0030-0000	Larry Wesley Davis Jr.	116	46	6/8/1949	N/A	N/A	N/A
9	C-04-35-30-A00-0020-0000	LW Jr. and Stephanie T Davis	116	46	6/8/1949	N/A	N/A	N/A
10	C-04-35-30-A00-0040-0000	Sebring Ranches of Highlands County, LLC	116	46	6/8/1949	N/A	N/A	N/A
11	C-18-35-30-A00-0040-0000	Humane Society of Highlands County	211	127	N/A	2	227	1/26/1956
12	C-07-35-30-A00-0040-0000	Southern Salvage Inc.	685	678	5/1/1981	685	675	3/16/1981
13	C-07-35-30-A00-0050-0000	Spring Lake Improvement District	685	678	5/1/1981	685	675	3/16/1981

PROPERTY TO BE ACQUIRED					
PARCEL NUMBER	HIGHLANDS COUNTY PROPERTY APPRAISER'S NUMBER	CURRENT PROPERTY OWNER	CURRENT FULL ACREAGE	ACERAGE AMOUNT TO BE AQUIRED	PURPOSE OF ACQUISITION
14	C-05-35-30-A00-0010-0000	Star Farms Corp	190.98	54.86	Airport Development
15	C-32-34-30-A00-0020-0000	Star Farms Corp	518.41	27.63	Airport Development

	EASEMENTS						
Document Number	GRANTOR	GRANTEE	OFFICIAL RECORD (O.R.) BOOK	PAGE	DATE	INSTRUMENT OF CONVEYANCE	PURPOSE OF ACQUISITION
	Sebring Airport Authority	South Florida Water Management District	1367	1769	5/1/1997	Deed of Conservation Easement	Perpetual Conservation
	Sebring Airport Authority	Wesley and Mae Ella Davis	Plat Book 15	15	7/22/1987	Easement Agreement	Access
49	Sebring Airport Authority	Wesley and Mae Ella Davis	984	529	7/23/1987	S Easement Agreement	Access
50	Sebring Airport Authority	Wesley and Mae Ella Davis	984	538	2/4/1988	Supplemental Southern Easement Agreement	Access
51	Sebring International Raceway Inc.	Sebring Airport Authority	2075	1116	6/12/2007	Leasehold Easement	Easement
53 & 54	Sebring Airport Authority	City of Sebring	2169	618	12/8/2008	Utility Easement	Utilities
56	Sebring Airport Authority	FLorida Power Corporation	2215	1067	11/12/2009	Distribution Easement	Utilities
57	Sebring Airport Authority	Florida Power Corporation	2222	1869	1/14/2010	Distribution Easement	Utilities
58	Sebring Airport Authority	CenturyLink Embarq Florida Inc.	2444	1187	9/16/2014	Cable Easement	Utilities
59	Sebring Airport Authority	City of Sebring	2505	62	11/25/2015	Utility Easement	Utilities
109	Sebring Airport Authority	Spring Lake Improvement District	560	372	7/29/1977	Maintenance and Drainage Agreement	Maintenance and Drainage
111	Sebring Airport Authority	Sebring Utilities Commission	704	712	11/9/1981	Easement	Utilities
114	Sebring Airport Authority	Spring Lake Improvement District	2712	663	9/12/2019	Easement Agreement	Access and Utilities

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SHEET TITLE
AIRPORT PROPERTY DATA TABLES

PROJECT
AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT
SEBRING
MULTIMODAL LOGISTICS CENTER

REVISIONS
DATE | DESCRIPTION

JOB NO.: 100055323
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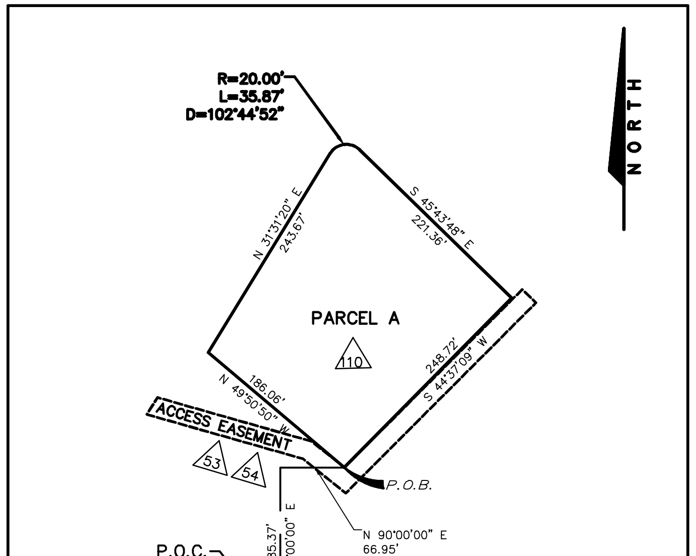

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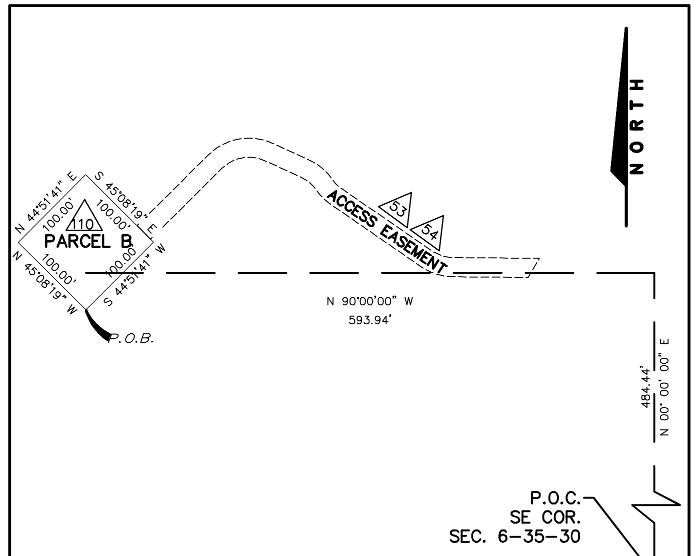

DETAIL B
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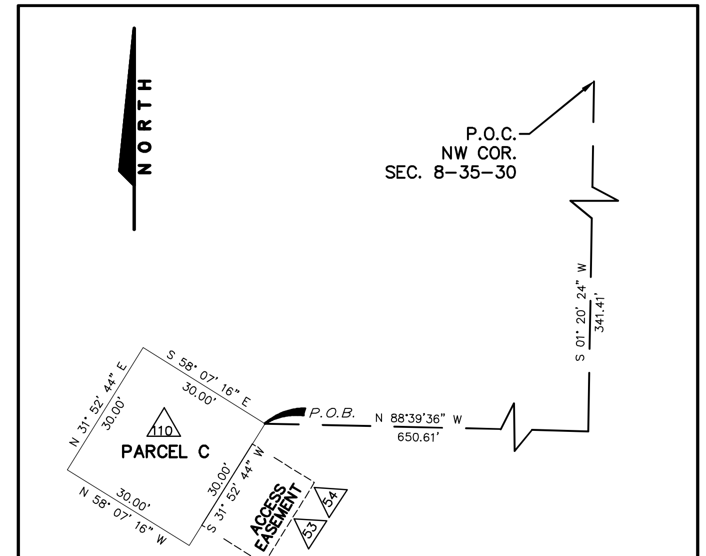

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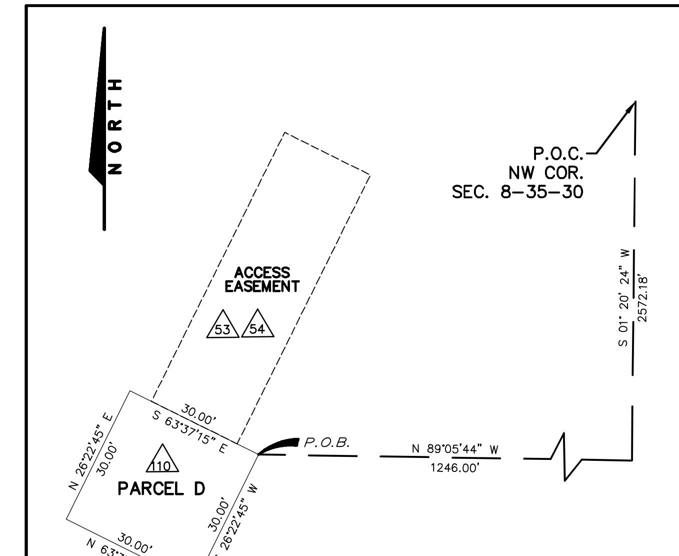

DETAIL D
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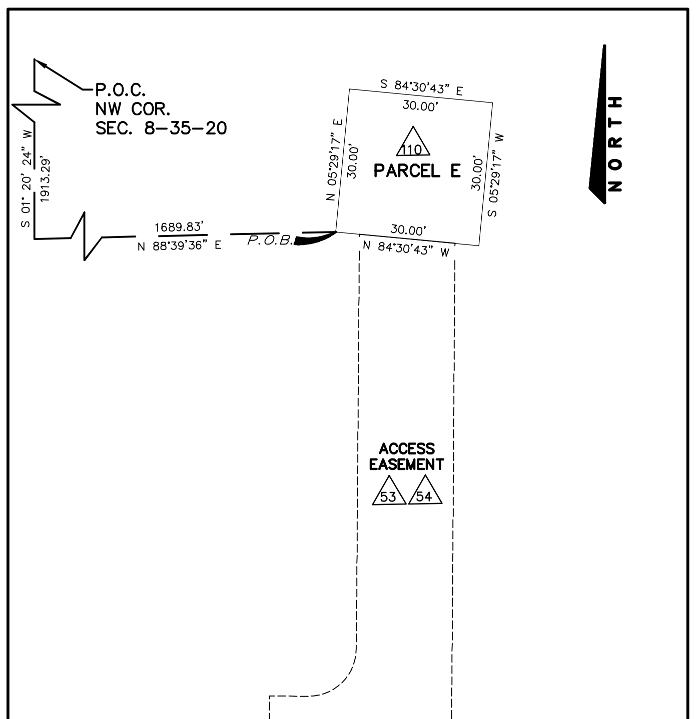
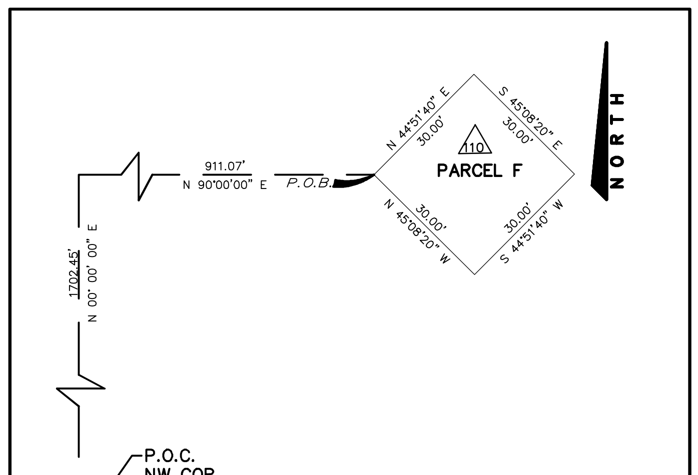


DETAIL E
1" = 20'



DETAIL F
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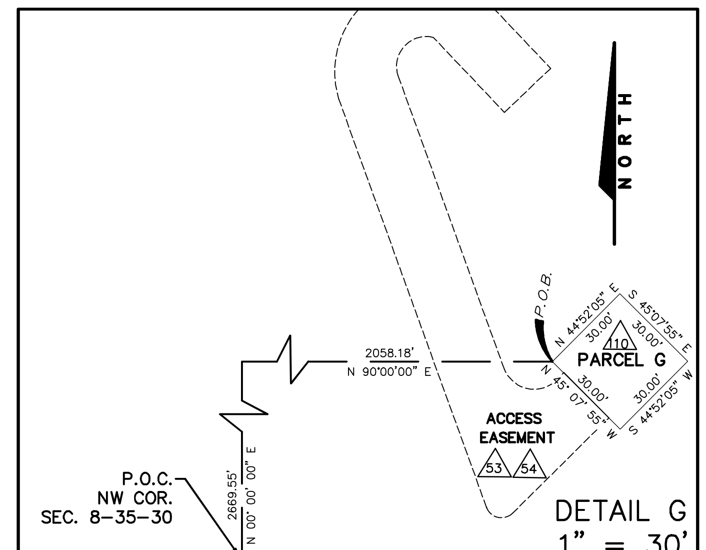
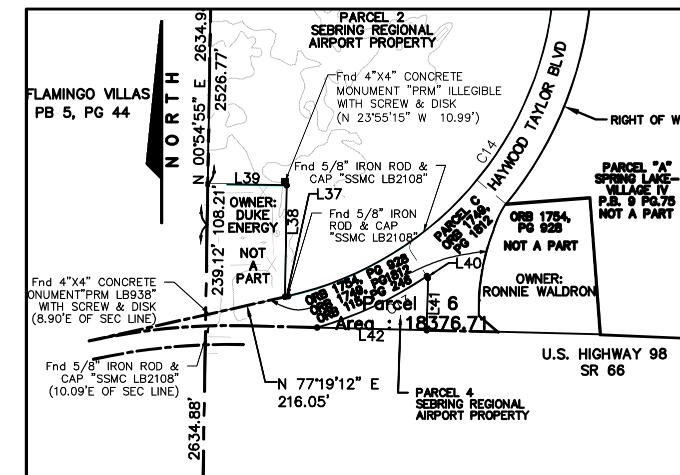
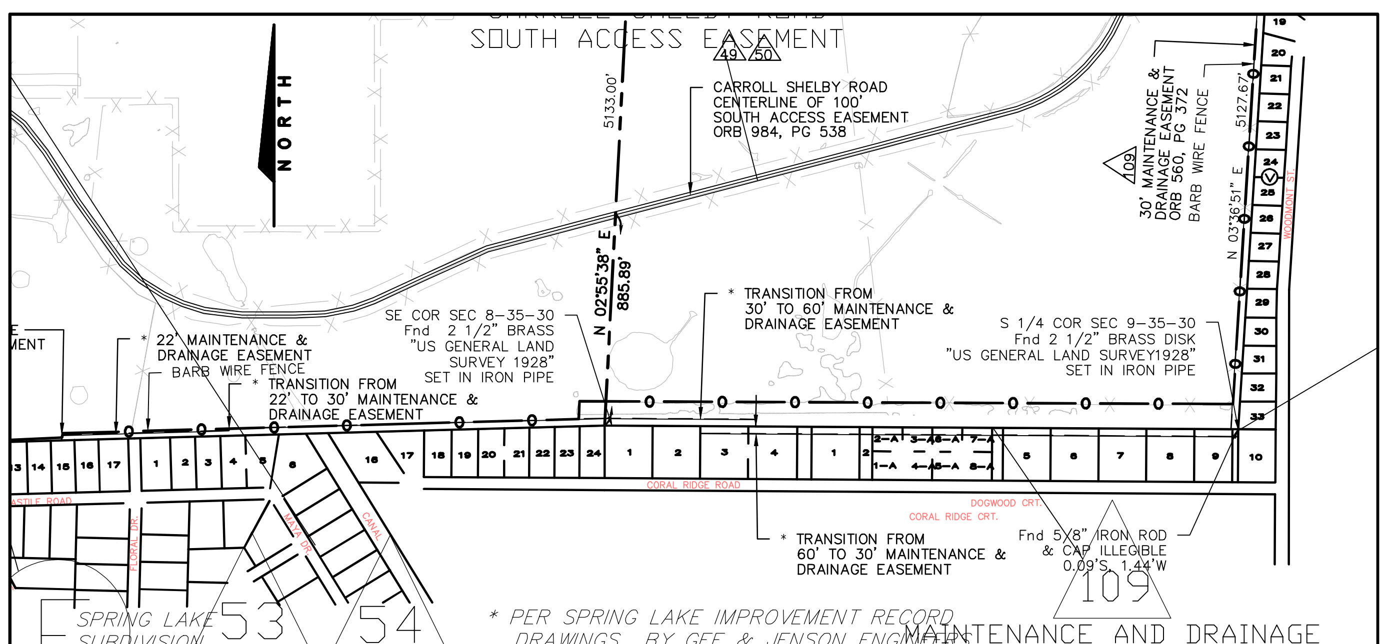


DETAIL G
1" = 30'



DETAIL H
1" = 250'



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SHEET TITLE: AIRPORT PROPERTY DETAIL PANELS

PROJECT: AIRPORT LAYOUT PLAN
SEBRING REGIONAL AIRPORT
SEBRING, FLORIDA

CLIENT: SEBRING MULTIMODAL LOGISTICS CENTER

REVISIONS | DATE | DESCRIPTION

JOB NO.: 100055323
DATE: JULY 2020
SHEET 22 OF 22

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Capital Improvement Program

SEBRING
MULTIMODAL LOGISTICS CENTER

7. Capital Improvement Program

7.1. Introduction

The analyses conducted in previous chapters evaluated airport development needs based on safety, forecasted aviation activity, and operational efficiency. However, an important element of the master planning process is the application of basic economic, financial, and management rationale to each development item so that the feasibility of implementation can be assured. The purpose of this chapter is to provide cost estimates for phased development throughout the planning period and summarize capital needs at Sebring Regional Airport (SEF).

7.2. Sources of Funding

Financing for capital improvements comes from several sources. Funding sources for the Airport's capital improvements include, but are not limited to, airport generated funds, local funds, grants from the Florida Department of Transportation (FDOT), and Federal grants from FAA through the Airport Improvement Program (AIP). Airport generated funds typically come from taxes, lease payments, fees, investment income and forms of debt financing. The following paragraphs summarizes the key sources of funding. It is important to note that these funding sources are not meant to be all inclusive. Additional funding sources may be available and should be reviewed on a case-by-case basis.

7.2.1. Federal Funding

7.2.1.1. Airport Improvement Program

The AIP provides grants to public agencies for airport development and planning projects at public-use airports that are a part of the National Plan of Integrated Airport Systems (NPIAS). The AIP is an evolution of the airport development and planning grant program which originated in 1946 with the Federal-Aid Airport Program (FAAP). In 1970, the Planning Grant Program (PGP) and Airport Development Aid Program (ADAP) replaced the FAAP with the introduction of the Airport and Airway Trust Fund. In 1982, the Airport Improvement Program (AIP) came into existence with the passage of the Airport and Airway Improvement Act of 1982 (P.L. 97-248), which was later repealed by Congress and re-codified as Title 49 USC § 47101 (the 'Act'), et seq. (P.L. 103-272).

AIP funding is appropriated by Congress on an annual basis and can be used for airport development and planning projects such as the construction/rehabilitation/reconstruction of runways, taxiways, aprons, lighting, signage, buildings, airport master plans, environmental analysis, etc. that support the development of a safe and efficient nationwide system of public-use airports. The funds obligated for the AIP are drawn from the Airport and Airway Trust Fund (the 'trust fund'), which is supported by a variety of user fees and fuel taxes. The AIP is one of five major sources of airport capital development funding. Small airports are more dependent on AIP grants than large or medium-sized airports. Since passage of the Act, AIP has been reauthorized several times, most recently with the passage of the FAA Reauthorization Act of 2018, which extends the FAA's funding and authorities through Fiscal Year 2023.

AIP grants provide a large portion of funding needed for airport development and planning projects. At large and medium hub airports, AIP grants cover 75 percent of eligible costs (or 80 percent for noise program implementation). For small hub and non-hub primary, reliever, and general aviation airports, AIP grants cover 90 to 95 percent of eligible costs. In rare occasions, additional AIP related grant programs have been known to cover up to 100 percent of eligible costs based on specific legislative requirements.

The AIP statue is a permissive statute rather than a mandatory or prohibitory one. This means that the statute states all actions or items that are eligible for funding. Any action or item not explicitly stated, is not eligible for funding. Being a permissive statute means that an airport is not required to do all or some of the items or actions listed, rather, provided the FAA determines than an item or action is justified, the airport is eligible to do such item of action. **Table 7-1** provides examples of eligible versus ineligible AIP projects.

AIP funding is primarily broken down into two categories: Entitlements; and, Discretionary. Each category of funding if further broken down into sub-categories and/or set-asides. Each funding type carries specific rules on the types of projects it can be used for and the types of airports for which it is eligible. Not all funding types are available at all airports. Table 4-3 of the AIP Handbook (FAA Order 5100.38) outlines the types of funding available based on the type of airport, while Table 4-5 defines the types of projects that each fund type is eligible for. Title 49 USC § 47120 requires that an airports entitlement funding be used on the highest priority project before discretionary funding can be used. The following sections provides further details about each category of funding available.

Table 7-1 - Eligible and Ineligible AIP Projects

Eligible Projects	Ineligible Projects
Runway construction/rehabilitation/reconstruction	Maintenance1
Taxiway construction/rehabilitation/reconstruction	Industrial Park Development
Apron construction/rehabilitation/reconstruction	Fuel Farms1
Airfield lighting, signage, and marking	Landscaping
Land acquisition	Aircraft hangars[1]
Airport Weather Observation Stations (AWOS)	Office/Equipment
NAVAIDs such as REILs and PAPIs	Marketing plans
Planning studies such as Airport Master Plans	Training
Environmental studies	Improvements for commercial enterprises
Safety area improvements	
Access roads only located on airport property	
Removing, lowering, moving, marking, and lighting hazards	
Glycol recovery trucks/glycol vacuum trucks[2]	

Notes:

[1]Revenue producing aeronautical facilities such as fuel farms and hangars owned by the sponsor can be funded with AIP, provided they are not a nonprimary airport. Only nonprimary entitlement funding is used, and the airport has satisfied the airfield needs requirements for revenue producing aeronautical support facilities.

[2]To be eligible, the vehicles must be owned and operated by the sponsor and meet the Buy American Preference specified in the ALP grant.

Source: Airport Improvement Program Handbook, FAA Order 5100.38D, Change 1

Prepared by: Atkins, 2020.

7.2.1.2. Discretionary Funding

Discretionary funding is made up of multiple set-asides and remaining amounts based on specific legislative calculations as outlined in Title 49 USC § 47117. Discretionary set-asides and remaining discretionary funding includes:

- Noise & Environmental Set-Aside
- Military Airport Program (MAP) Set-Aside
- Reliver Set-Aside
- Capacity/Safety/Security/Noise (C/S/S/N)
- Pure Discretionary
- Discretionary from Converted Entitlements/Appointments
- Small Airport Fund

Each type of discretionary funding is determined based on a specific calculation, except for the discretionary from converted entitlements/apportionments. Furthermore, each type of discretionary funding, except for pure discretionary and that converted from entitlements/apportionments, has specific funding purposes and is only available for funding of specific projects and/or at specific types of airports.

Discretionary funding is available to all public-use airports in the NPIAS and all projects seeking discretionary funding compete based on the national priority ranking (NPR) of the project, along with the additional justification provided by the sponsor and FAA Airports District Office (ADO). Projects with a higher NPR, such as rehabilitation, reconstruction, and safety projects, are more likely to receive discretionary funding in any given year. However, that is not to say that other projects will not receive discretionary funding. It is highly encouraged for sponsors to submit all needs as the FAA will fund as many projects as possible from the list of candidate projects, and total discretionary funding available for any given year is not known until the end of the year.

7.2.1.3. Entitlement Funding

Entitlement funding is broken down into multiple types and is primarily based on an airport's categorization. Entitlement funding types include:

- Passenger Entitlements
- Cargo Entitlements
- Nonprimary Entitlements
- State Apportionment
- Alaska Supplemental

Sebring Regional Airport (SEF) currently receives $150,000 of nonprimary entitlements every fiscal year (FY). In addition, LAL is eligible to receive state apportionment funding which is administered by the FAA Orlando ADO in cooperation with the Florida Department of Transportation (FDOT).

7.2.2. State Funding

The FDOT annually funds a state-sponsored airport development program supported by state-wide aviation fuel taxes. The program generates over $100 million per year to assist publicly-owned and operated Florida airports. The FDOT will participate in projects not funded with FAA monies on a 50-50 basis for airports, depending upon the nature and eligibility requirements of the projects. The state will also participate with federal and local agencies on a project with 90 percent Federal, five percent State, and five percent local share basis. Typically, projects funded through this aviation development program have been developed on a pay-as-you-go basis.

FDOT also provides interest free loans for 75 percent of the cost of the airport land purchases for both commercial service and GA airports. These loans are to be repaid when federal funds become available or in 10 years, whichever comes first.

FDOT has developed a computer program in conjunction with the FAA, the Joint Automated Capital Improvement Program (JACIP), as a tool to assist airports in coordinating their capital improvement program with the FAA and FDOT. FDOT uses the projects included in the JACIP to prioritize projects into the FDOT Work Program. The Work Program includes five years of projects that have been approved for funding if funds are approved by the legislature for the current year.

7.2.3. Local Funding

Local share funding can come through many sources. The following three are examples of local funding options.

- **Debt Financing**: This option involves borrowing money against the available credit for the Airport Authority. The debt may become a bond issue, where municipal bonds are sold to cover the cost of capital construction. These bonds generally fall into two categories – general obligation bonds and revenue bonds. General obligation bonds do not rely upon any revenue generated by the project whereas revenue bonds depend upon the ability of the project to generate money to repay the debt.

- **Private Enterprise**: Private investors are a potential source of funds for revenue-producing developments at the Airport. Tenants and/or investors may finance the purchase of existing facilities or the construction of new facilities from which they derive income. While direct revenues to the Airport are usually limited to the purchase or lease charges for the land underlying the facilities, the local sponsor does not need to obtain its own funding for these improvements. Additionally, the increased activity resulting from airport improvements often increases the number of based aircraft or operations, which in turn generates additional revenue associated with fuel sales and other aviation services. Examples of private investment at airports include buildings for fixed based operators, fuel facilities, hangars (bulk and T-hangars), aviation-related commercial development, and non-aviation commercial development.
- **City/County Appropriations from the General Fund**: Similar to Federal appropriations, City/County appropriations are from the local government that may or may not be the owner of the airport. As the City/County where the airport is located will likely be greatest beneficiary of the development project, it is essential to gain support form the local government. This support can in some instances include the local share of AIP grants.
- **Airport Revenues**: Airport revenues are required to stay on airport and cannot be diverted off-airport. All revenues collected from leases, fuel sales, landing fees, etc., can be used by the airport as the local share of AIP grants.

7.3. Project Phasing

This section addresses a phased schedule for implementing proposed development throughout the short-, medium-, and long-term planning periods. The schedule represents a prioritized capital improvement plan (CIP) to meet forecast milestones in aviation demand and/or economic development initiatives. Projects that appear in the short-term are of greatest importance and have the least tolerance for delay. Additionally, some projects include in the short-term may be a prerequisite for other planned improvements. The development phasing for the Airport has been divided into three planning period as follows:

- Short-Term: 2020-2025
- Medium-Term: 2026-2030
- Long-Term: 2031-2040

The phasing of individual projects should undergo an annual review to determine the need for changes based upon variation in forecast demand, available funding, economic conditions, and/or other factors that influence airport development. It should be noted that other projects not foreseen in this report may be identified in the future and would necessitate changes in the phasing of projects and the overall CIP. Although the projects in the CIP have an implementation year assigned, this is only a recommendation tied to current assumptions and priorities. The Airport should review the goals, objectives, and priorities shown in the plan and the CIP annually and re-evaluated the CIP based on any changes in current conditions and the goals, objectives, and priorities sated in the plan. An annual review is necessary to maintain the viability of the Airport Master Plan and the CIP.

7.3.1. Cost Estimates

Project cost estimates were developed for each project identified in the preferred development plan. The cost estimates provided are order-of-magnitude and all costs have been escalated to their programmed year. Estimated quantities of major items, such as pavement or fill material, were used in conjunction with unit cost values to determine a construction cost. A final project cost was then determined by adding set percentages of the construction cost for mobilization, safety, security, traffic control, drainage (where applicable), and engineering services for construction and design phases. Additionally, a contingency amount of 20 percent of the estimated construction cost was added to account for items that are currently unknown. While an escalation factor was included, actual construction costs may vary based upon inflation, variations in labor, and changes in the type or cost of materials used, as well as other unforeseeable economic factors. Federal grant assistance eligibility requirements may vary annually. It is highly recommended that an annual review of the estimated project costs be conducted as part of the annual CIP review.

7.4. Capital Improvement Plan

The Airport's proposed CIP is shown with projects grouped in the short- (**Table 7-2**), medium- (**Table 7-3**), and long-term (**Table 7-4**) planning periods. A summary of the full CIP is provided in **Table 7-5**. Individual CIP project sheets are provided in **Appendix E** and contain project descriptions, detailed cost estimates, and other information. Projects which included a blend of AIP eligible and in-eligible enhancements had the respective funding divided accordingly among federal, state, and local shares. Primarily, drainage enhancements at the Airport are proposed to be completed at the same time as hangar development. As appropriate, the drainage enhancement cost under the specific project was divided accordingly among the three funding sources. The remaining costs for the development were split between state and local funding sources due to the AIP in-eligibility of the project.

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Table 7-2 - Short-Term Capital Improvement Plan (Federal FY 2020-2024)

Project	Federal Fiscal Year	Project Description	Project Cost ($)	Funding ($)		
				Federal	State	Local
A1	2021	Taxiway A4 Construction	775,700	698,130	38,785	38,785
A2	2022	Taxiway C Excess Pavement Removal	1,383,000	1,244,700	69,150	69,150
L1	2022	Construct Conventional Hangars on Northern Apron Area	11,568,700	1,675,350	4,946,675	4,946,675
A3	2023	Runway 14-32 South Partial Parallel Taxiway	3,532,500	3,179,250	176,625	176,625
L2	2024	Construct Stormwater Drainage Improvements - 'Priority A'	3,194,200	2,874,780	159,710	159,710
		Total	**20,454,100**	**9,672,210**	**5,390,945**	**5,390,945**

Source: Montgomery Consulting Group Inc., Atkins 2020

Table 7-3 - Medium-Term Capital Improvement Plan (Federal FY 2025-2030)

Project	Federal Fiscal Year	Project Description	Project Cost ($)	Funding ($)		
				Federal	State	Local
A4	2021	Runway 1-19 Enhancements[1]	54,424,800	48,580,110	2,698,895	3,145,795[1]
L3	2025	Construct Hayword Taylor (1 of 2) & Authority Lane Extension	3,879,100	3,491,190	193,955	193,955
L4	2026	Construct Conventional Hangar on Southern Apron Area	5,364,800	-	2,682,400	2,682,400
L5	2027	Construct Conventional Hangars on Taxiway A	19,444,000	356,040	9,543,980	9,543,980
A5	2029	Runway 1-19 East Full Parallel Taxiway	18,149,100	16,334,190	907,455	907,455
L6	2029	Construct Hayword Taylor Extension (2 of 2)	1,791,700	1,612,530	89,585	89,585
AMPU	2029	Airport Master Plan Update	374,700	337,230	18,735	18,735
		Total	**99,869,100**	**67,910,310**	**15,979,395**	**15,979,395**

Source: Montgomery Consulting Group Inc., Atkins 2020

Notes: [1]Runway Extension Justification Study and Environmental Assessment sub-projects total costs allocated to local share

Table 7-4 - Long-Term Capital Improvement Plan (Federal FY 2020-2025)

Project	Federal Fiscal Year	Project Description	Project Cost ($)	Funding ($)		
				Federal	State	Local
A6	2031	Runway 14-32 North Partial Parallel Taxiway	3,977,900	3,580,110	198,895	198,895
L7	2031	Construct Carroll Shelby Road Addition	97,159,800	87,443,820	4,857,990	4,857,990
		Total	**101,137,700**	**91,023,930**	**5,056,885**	**5,056,885**

Source: Montgomery Consulting Group Inc., Atkins 2020

Table 7-5 - Capital Improvement Plan Summary

Full Program Overview	Project Cost ($)	Funding ($)		
		Federal	State	Local
Short-Term Total	20,454,100	9,672,210	5,390,945	5,390,945
Medium-Term Total	99,869,100	67,910,310	15,979,395	15,979,395
Long-Term Total	101,137,700	91,023,930	5,056,885	5,056,885
Full Program Total	221,460,900	168,606,450	26,427,225	26,427,225

Source: Montgomery Consulting Group Inc., Atkins 2020

Notes: 1 In addition to the specified projects under the Runway 1-19 enhancements, the cost estimation for the rail realignment, canal realignment, and necessary land acquisition must be completed at the appropriate time.

Public Involvement Program

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8. Public Involvement Program

The Public Involvement Program (PIP) aims to generate public awareness of the Airport Master Plan Update ('the project') and to prompt public input. Generating public input will ensure the planning effort meets the stakeholder's needs. The level of public involvement in airport planning is proportional to the complexity of the planning study and to the degree of public interest. The PIP process for the Airport involved public awareness through press releases, information via website and public presentations, and a feedback process to encourage information sharing between stakeholders and the planning team throughout relevant milestones of the project.

Copies of advertisements and handouts are available in **Appendix F** as the official record of the PIP. The project team utilized a dynamic/interactive public forum. The selection of the specific PIP platform depended heavily on the complexities associated with the Airport, the expected public interest in the master plan, and budget considerations.

8.1. Airport Board of Directors

The Airport Board of Directors, comprised of six (6) members, serves as the decision-making entity for the Airport. The project team made presentations to the Airport Board of Directors on March 28, 2018 and April 18, 2019.

8.2. Public Information

8.2.1. On-Line Project Updates

Project updates have been provided on the Airport website via monthly Director's Reports, which cover all aspects of development and activity at the Airport. Director's Reports can be found at https://sebring-airport.com/airport-authority/directors-reports/. The public has the opportunity at any time to provide comment or submit questions to the Airport at https://sebring-airport.com/contact/.

8.2.2. Media Announcement

Media announcements are important components of the PIP to inform the public of various project milestones, meetings, and circulate project information. A Public Notice was printed in the Highlands News-Sun, a newspaper printed and circulated in Sebring, Florida. The Public Notice ran on February 1, 2020 and February 8, 2020 announcing the Public Meeting for the Master Plan. A copy of the Affidavit of Publication is provided in **Appendix F**.

8.2.3. Public Meeting

The project team facilitated a public outreach event open to all interested community members. The meeting was held from 2:30 p.m. to 4:30 p.m. on February 20, 2020 at the Airport Terminal Building, 128 Authority Lane, Sebring, Florida. The purpose of the meeting was to inform the public of project progress, present the project alternatives, to solicit input, and gather information for alternatives refinement. Members of the project team were on hand throughout the meeting to answer questions and provide information. Comment cards were available for public input.

Seven people attended the Public Meeting and no comment cards were collected after the event.

Appendices

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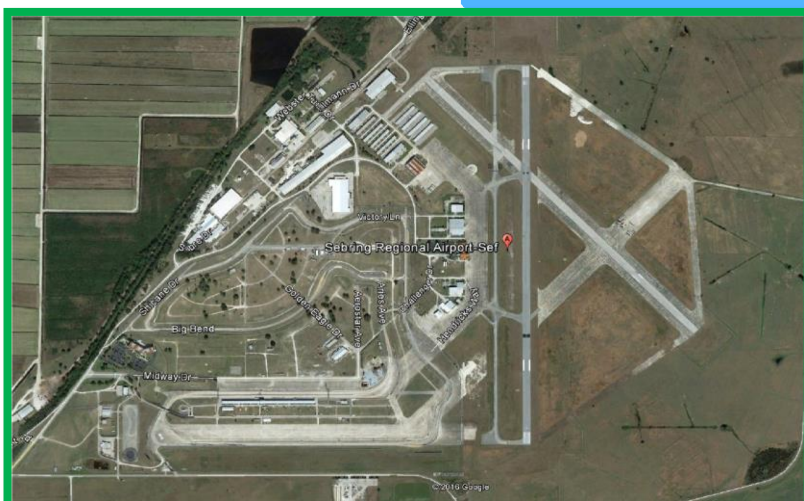
Appendix A. 2017 FDOT PCND Evaluation

FLORIDA DEPARTMENT OF TRANSPORTATION
Aviation and Spaceports Office

Statewide Pavement Classification Number (PCN) Development Program

PCN EVALUATION REPORT



SEBRING REGIONAL AIRPORT
(SEF)

April 2017

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EXECUTIVE SUMMARY

Introduction

The Florida Department of Transportation (FDOT) Aviation and Spaceports Office is providing statewide Pavement Classification Number Development (PCND) evaluations for runway pavements at Florida's public-use airports. These evaluations are to be conducted within approximately three years, from the execution of this agreement to June 30, 2018, and will be broken into three sub-phases. This element of the project, Phase 2b, started on July 7, 2016, and is expected to be completed by March 17, 2017. Phase 2c will follow a similar timeframe. The consultant will perform the Pavement Classification Number (PCN) calculations for approximately one-third of the total participating airports in Florida during each phase. Thirty-one airports are scheduled to be evaluated and completed by the end of Phase 2b.

CDM Smith Inc. (CDM) retained RDM International, Inc. (RDM) to perform the PCN evaluation at Sebring Regional Airport (SEF), located in Sebring, Florida. The Federal Aviation Administration (FAA) Advisory Circular 150/5335-5C, "Standardized Method of Reporting Airport Pavement Strength – PCN," contains the standards for reporting gross weight and PCN data. Runway 1-19 and Runway 14-32 were included in this evaluation, which included the following tasks:

- Geotechnical Investigation – Review of prior records for existing pavement structures if available, or conduct pavement cores.
- Nondestructive Testing (NDT) – Perform NDT on existing runway pavement.
- Traffic Analysis – Analyze traffic information provided by the airport or develop from various websites.
- PCN and Allowable Load Computation – Calculate the PCN and allowable load based on the guidelines in FAA Advisory Circular 150/5335-5C.
- Development of PCN Report – Include the process and findings of the evaluation.

Pavement Composition

Runway 1-19

Runway 1-19 is 5,234 feet long and 100 feet wide; it is an asphalt concrete (AC) surfaced runway. The pavement composition and thickness data were obtained from record drawings provided by the airport authority. These drawings indicate that Runway 1-19 is composed of 4.0 inches of AC on 12.0 inches of a recycled crushed concrete base course, on compacted subgrade.

The existing pavement structure was converted to a standard evaluation section with a total thickness of approximately 17.1 inches, consisting of the AC surface, aggregate base, and subbase. The Subgrade California Bearing Ratio (CBR) used for this evaluation is 15%.

Runway 14-32

Runway 14-32 is 4,990 feet long and 100 feet wide; it is an asphalt concrete (AC) surfaced runway. The pavement composition and thickness data were obtained from record drawings provided by the airport authority. These drawings indicate that Runway 14-32 is composed of 3.0 inches of AC on 6.0 inches of a rubblized Portland cement concrete (PCC) base course.

The existing pavement structure was converted to a standard evaluation section with a total thickness of approximately 9.0 inches, consisting of the AC surface, aggregate base, and subbase. The Subgrade California Bearing Ratio (CBR) used for this evaluation is 11%.

Traffic Analysis

The traffic data, in terms of total aircraft operations, was provided by the airport. Evaluation traffic was developed based on information from www.airnav.com and www.flightaware.com, along with operational data provided by the airport. Further, prior to evaluation, the traffic information data in terms of aircraft type, frequency, and departure weight was verified with the airport authority. After consultation with the airport authority, additional dual-wheel aircraft were included in the traffic mix.

PCN and Allowable Load Computations

Based on the engineering analysis using the FAA’s FAARFIELD and COMFAA programs, the following information may be published in the FAA’s Form 5010, “Airport Master Record.” The allowable gross aircraft weights and runway PCN data are shown in Table ES-1.

Table ES-1 PCN and Allowable Load Results (in kips)

Form 5010 Reporting Field	Runway 1-19	Runway 14-32
#35 S Gear	87	30
#36 D Gear	135	45
#37 DT Gear	n/a	n/a
#38 DDT Gear	n/a	n/a
#39 PCN	*32/F/A/X/T	*9/F/B/Y/T

*PCN Reporting Format: PCN# / Pavement Type / Subgrade Category / Allowable Tire Pressure / Determination Method

Guidance for PCN Use

The airport can allow the operation of aircraft with Aircraft Classification Number (ACN) values equal to or less than the reported PCNs without limitations. If an occasional overload occurs, the aircraft in question should not have an ACN value greater than 10% of the reported PCN, with the caveat that overload movements should not exceed approximately 5% of total annual aircraft movements. However, normally overload aircraft should not be allowed if the pavements have already exhibited signs of distress, or if it is suspected that the subgrade is weakened by water. The occasional use for a dual-wheel aircraft may be limited to less than 100 departures per year. Note also that the traffic and pavement structure employed in the evaluation can have a substantial impact on the PCN results. If these inputs change significantly, the PCN should be re-evaluated.

SECTION 1.0 INTRODUCTION

RDM International, Inc. (RDM), under contract with CDM Smith Inc. (CDM), was tasked with performing a Pavement Classification Number (PCN) evaluation for Runway 1-19 and Runway 14-32 at Sebring Regional Airport (SEF), located in Sebring, Florida.

1.1 ACN-PCN System

The International Civil Aviation Organization (ICAO) requires member states to publish information on pavement strengths using a standard methodology. ICAO has thus adopted the Aircraft Classification Number (ACN) and Pavement Classification Number (PCN) system. This system allows the user to express the effect of an individual aircraft on different pavements with a single unique number, which varies according to aircraft weight, gear configuration, pavement type, and subgrade strength.

The ACN expresses the relative effect of an aircraft on the runway pavement for a specified standard subgrade strength. Along with the ACN, the load-carrying capacity of a pavement can be expressed with a single unique number, the Pavement Classification Number (PCN), without specifying a particular aircraft or detailed information about the pavement structure. This method is designed so that a pavement with a particular PCN value can support an aircraft that has an ACN value equal to or less than the pavement's PCN.

As an ICAO member state, the United States is obligated to use this method for reporting pavement bearing strengths. FAA Advisory Circular 150/5335-5C, "Standardized Method of Reporting Airport Pavement Strength – PCN," provides detailed information on the ACN-PCN system and evaluation procedures.

1.1.1 Aircraft Classification Number (ACN)

The ACN is defined as "a number that expresses the relative effect of an aircraft at a given configuration on a pavement structure for a specified standard subgrade strength," as stated in FAA Advisory Circular 150/5335-5C. For flexible pavements, the aircraft's ACN is determined by the California Bearing Ratio (CBR) method for standard subgrade support categories. The pavement thickness required by an aircraft is computed at a loading frequency of 10,000 coverages. At the same frequency and the computed pavement thickness, the allowable load of a standard single wheel is evaluated at a standard tire pressure of 181 lbs. per square inch (psi). The ACN of the aircraft is defined as twice the obtained single-wheel load, expressed in thousands of kilograms.

For rigid pavements, the aircraft's ACN is determined by the Portland Cement Association (PCA) method, which uses a Westergard interior load solution for an elastic plate on a dense liquid foundation. The thickness of the concrete plate required by an aircraft is computed to cause a standard working stress of 399 psi, which is equivalent to 10,000 coverages. The same standard single wheel used for the flexible pavement evaluation is applied on the concrete plate. The allowable single-wheel load to cause the same working stress of 399 psi is then computed. The ACN is derived in the same manner for flexible pavements.

1.1.2 Pavement Classification Number (PCN)

FAA Advisory Circular 150/5335-5C defines the PCN as "a number that expresses the load-carrying capacity of a pavement for unrestricted operations." The PCN is essentially the ACN of an aircraft that a pavement structure can support. For a specific pavement structure, all aircraft in the forecast fleet mix are evaluated to obtain a critical aircraft that the pavement can support based on applicable design procedures. The ACN of that critical aircraft is then computed as the PCN.

Therefore, it is possible to compare the PCN with the ACN of any aircraft to evaluate the loading capacity of the existing pavement. If the PCN is equal to or greater than the ACN, the existing pavement can support those aircraft operations without limitation.

The ACN-PCN is a coded index with the following formats:

PCN Reporting Format

PCN Number	Pavement Type	Subgrade Strength	Tire Pressure	Determination Method
Numerical	R-Rigid	A	W	T-Technical
Value	F-Flexible	B	X	U-Using Aircraft
		C	Y	
		D	Z	

Subgrade Strength Code

Code	Category	Flexible Pavement CBR, %	Rigid Pavement k, psi/in
A	High	≥ 13	≥ 442
B	Medium	> 8 and <13	> 221 and < 442
C	Low	> 4 and ≤ 8	> 92 and ≤ 221
D	Ultralow	≤ 4	≤ 92

Tire Pressure Code

Code	Category	Pressure, psi
W	Unlimited	no limit
X	High	limited to 254
Y	Medium	limited to 181
Z	Low	limited to 73

It is necessary to analyze the existing pavement structure in terms of pavement materials, layer thicknesses, and subgrade strength for the PCN evaluation. The critical aircraft evaluation also requires traffic information in terms of aircraft types, operation frequencies, and weights from the airport's traffic forecast or actual experience.

SECTION 2.0 GEOTECHNICAL INVESTIGATION

The existing pavement structures for Runway 1-19 and Runway 14-32 at SEF were obtained from record drawings provided by the airport. These drawings provided adequate pavement structural data, so pavement cores or borings were not required.

2.1 Runway 1-19

Runway 1-19 is 5,234 feet long and 100 feet wide, and is an asphalt concrete (AC) surfaced runway.

The record drawings indicate that Runway 1-19 is composed of 4.0 inches of AC on 12.0 inches of a recycled crushed concrete base course, on compacted subgrade.

2.2 Runway 14-32

Runway 14-32 is 4,990 feet long and 100 feet wide, and is an asphalt concrete (AC) surfaced runway.

The record drawings indicate that Runway 14-32 is composed of 3.0 inches of AC on 6.0 inches of a rubblized Portland cement concrete (PCC) base course.

SECTION 3.0 NONDESTRUCTIVE TESTING

Nondestructive tests (NDT) were conducted on Runway 1-19 and Runway 14-32 on September 7, 2016. The purpose of the NDT is to estimate the pavement layers and subgrade engineering properties through the analysis of the load response data of the existing pavements. NDT data can also be used to segment the pavement into different strengths qualitatively, and verify the pavement structure from the geotechnical investigations.

3.1 Equipment Requirements

RDM's Heavy Weight Deflectometer (HWD) was used for the NDT testing program. Approximately 317 individual NDT test points were conducted on the existing pavements of Runway 1-19 and Runway 14-32. The equipment was designed to generate a dynamic load on the pavement surface and measure the resultant vertical response of the pavement system, including subgrade, base courses, and surface layers. The measured deflection data can be used through back-calculation procedures to estimate pavement materials and subgrade elastic moduli (E) as PCN evaluation inputs.

The NDT equipment, test procedures, and data reduction methods conformed to the requirements of FAA Advisory Circular 150/5370-11B, "Use of Nondestructive Testing Equipment in the Evaluation of Airport Pavement." RDM's HWD in operation is shown in Figure 3-1.

3.2 NDT Procedures

NDTs were conducted on 4 test lanes on each runway. The 2 center lane tests were conducted in the runway keel approximately 10 feet left and right of the Runway 1-19 centerline at approximately 50 feet with staggered longitudinal spacing. The 2 side lanes were approximately 42 feet left and right of the centerline, and NDTs were performed at 100 feet staggered spacing. For Runway 14-32, the keel was tested approximately 6 feet left and right of the centerline, and the 2 side lanes were at approximately 44 feet left and right of the centerline. The impulse load level was set at a nominal force amplitude of 20,000 lbs. on both runways. Deflections were recorded by sensors at the center of the loading plate and at 8-inch, 12-inch, 24-inch, 36-inch, 48-inch, and 60-inch offsets from the center of the loading plate.

NDT field data can be found in Appendix A.

Figure 3-1 HWD in Operation

3.3 Data Analysis

3.3.1 Impulse Stiffness Modulus (ISM)

As an index reflecting the overall strength of the pavement system, the Impulse Stiffness Modulus (ISM) in kips per inch was computed at each test point. The ISM was computed by dividing the impulse load by the response (deflection) at the loading plate. Because it reflects the influence of all pavement layers and subgrades, the computed ISM can be used to indicate variations in pavement strength along the runway. The ISM plots can be found in Appendix A.

For Runway 1-19, based on the consistent layer thicknesses provided by the airport, the variation in ISMs may be primarily attributed to the subgrade support and pavement material conditions. The average ISM values vary from 1,400 kips/in to 4,300 kips/in. The majority of the lower ISM values were obtained in the side sections.

For Runway 14-32, higher ISM values were obtained in the vicinity of the intersection area with Runway 1-19. The average ISM values vary from 848 kips/in to 4,079 kips/in.

3.3.2 Back-Calculation of Material Properties

Layered elastic back-calculation procedures were used for NDT data analysis. The computer program BAKFAA was used to back-calculate the elastic moduli of the pavement materials and subgrade.

The runway pavements were separated into varied sections based on the ISMs. The back-calculation results are summarized in Table 3-1 and Table 3-2.

Runway 1-19

The elastic moduli of the AC pavement range from approximately 691,400 psi to 1,157,200 psi. The recycled crushed concrete base material elastic moduli are generally greater than 230,000 psi in the side sections, and greater than 340,000 psi in the keel sections.

The average back-calculated subgrade elastic moduli range from 33,300 psi to 38,800 psi, with varied coefficients of variation (CV). The CV is generally less than 15%, which indicates consistent subgrade strength within each section.

Based on the FAA's design procedures, the design subgrade modulus should be one standard deviation from the average. The design moduli were computed as ranging from 28,950 psi to 35,600 psi. The CBR for PCN evaluation of the subgrade may be correlated to the moduli using E = 1500*CBR. The resulting CBRs range from 19.30% to 23.73%.

However, the above equation generally applies to fine-grained soils with CBR values up to 15%. Therefore, the computed CBRs in Table 3-1 may not be representative of the subgrade soils. To obtain a conservative estimate consistent with the subgrade soil, a lower value may be considered for the PCN evaluation, as will be discussed later in this section.

Runway 14-32

The elastic moduli of the AC pavement range from approximately 810,800 psi to 1,528,800 psi, while those for the rubblized PCC base material elastic range from 848,100 psi to 1,332,700 psi.

The average back-calculated subgrade elastic moduli range from 15,150 psi to 21,000 psi, with varied coefficients of variation (CV). The CV is generally less than 15%, which indicates consistent subgrade strength within each section.

Based on the FAA's design procedures, the design subgrade modulus should be one standard deviation from the average. The design moduli were computed as ranging from 13,170 psi to 18,900 psi. The CBR for PCN evaluation of the subgrade may be correlated to the moduli using E = 1500*CBR. The resulting CBRs range from 8.78% to 12.60%.

Table 3-1 Runway 1-19 Back-Calculation Summary

NDT Station, feet		Evaluation	Elastic Modulus (E), psi			Subgrade, E		Subgrade Design	
From	**To**	**Structure**	**AC**	**Base**	**Subgrade**	**Std. Dev.**	**CV**	**E, psi**	**CBR, %**
Runway 1-19, 0+00 at Runway 1 End, Keel									
0+00	17+50	4.0" AC / 12.0" Recycled Crushed Concrete Base	948,500	548,200	34,500	4,000	11.59%	30,500	20.33
17+50	30+25		912,200	677,800	36,950	3,250	8.80%	33,700	22.47
30+25	40+50		1,157,200	555,100	36,570	2,750	7.52%	33,820	22.55
40+50	52+34		942,600	342,400	38,800	3,200	8.25%	35,600	23.73
Runway 1-19,Side									
0+00	20+00	4.0" AC / 12.0" Recycled Crushed Concrete Base	1,077,900	487,000	33,300	4,350	13.06%	28,950	19.30
20+00	40+50		691,400	530,100	38,700	3,250	8.40%	35,450	23.63
40+50	52+34		712,300	239,500	35,000	4,350	12.43%	30,650	20.43

Table 3-2 Runway 14-32 Back-Calculation Summary

NDT Station, feet		Evaluation	Elastic Modulus (E), psi			Subgrade, E		Subgrade Design	
From	**To**	**Structure**	**AC**	**Base**	**Subgrade**	**Std. Dev.**	**CV**	**E, psi**	**CBR, %**
Runway 14-32, 0+00 at Runway 14 End, Keel									
0+00	17+00	3.0" AC / 6.0" Rubblized PCC Base	1,366,200	1,332,700	19,400	2,900	14.95%	16,500	11.00
17+00	36+50		1,224,800	1,041,300	21,000	2,100	10.00%	18,900	12.60
36+50	49+90		1,528,800	1,192,600	19,200	2,650	13.80%	16,550	11.03
Runway 14-32,Side									
0+00	17+00	3.0" AC / 6.0" Rubblized PCC Base	823,900	847,800	18,600	2,650	14.25%	15,950	10.63
17+00	36+50		1,182,300	1,136,800	17,900	2,250	12.57%	15,650	10.43
36+50	49+90		810,800	848,100	15,150	1,980	13.07%	13,170	8.78

3.4 Standard Section for Evaluation

For PCN evaluation, the weakest sections should generally be used to limit the pavement strength. Since full aircraft loadings occur at both runway ends, the first 1,000 feet of pavement at the runway ends are required to have the full pavement strength. Therefore, the weakest section can be selected from this area for PCN evaluation. For comparison purposes the middle portion of the runway may also be evaluated, especially for runways with displaced thresholds.

Based on guidance contained within the Advisory Circular, the existing AC pavements should be converted to a standard section composed of the AC surface, aggregate base, and subbase. The AC and aggregate base thicknesses for a standard section are 3 inches and 6 inches for single-wheel and dual-wheel aircraft, respectively. If the fleet mix includes aircraft with four or more wheels on the main gear, the standard AC is 5 inches and the aggregate base thickness is 8 inches. All remaining materials should be converted to subbase.

Based on the aircraft traffic discussed in Section 4.0, the standard section with 3 inches of AC and 6 inches of base is considered for both runways in this evaluation.

To convert the existing layer thicknesses to a standard section, the layer equivalency factor ranges in the Advisory Circular were applied. For example, one inch of AC material may be equivalent to 1.2 to 1.6 inches of aggregate base. For the existing pavement evaluation factors in the upper side of the range were considered, based on consistent and competent layer properties from the back-calculations.

Subgrade support strength in terms of CBR can have a great impact on PCN evaluation. The back-calculation results showed that all of the pavement sections of Runway 1-19 have a correlated CBR greater than 19%. Since the correlation may not be applicable for the subgrade soil type, using these high CBR values may not provide a conservative estimate and may overestimate pavement strength. Using subgrade CBRs greater than 20% is also not recommended for pavement design, according to the FAA’s published design procedures. The CBR values used for the PCN computation for various runway pavement sections are depicted in Table 3-3.

Table 3-3 Pavement Structures for PCN Evaluation

NDT Station, feet		**Evaluation**	**Evaluation**	**Subgrade**
From	To	**Structure**	**Thickness, inches**	**CBR, %**
Runway 1-19, 0+00 at Runway 1 End				
0+00	17+50	4.0" AC / 12.0" Recycled Crushed Concrete Base	17.40	15.00
17+50	40+50		17.40	15.00
40+50	52+34		17.10	15.00
Runway 14-32, 0+00 at Runway 14 End				
0+00	17+00	3.0" AC / 6.0" Rubblized PCC Base	9.00	11.00
17+00	36+50		9.00	12.60
36+50	49+90		9.00	11.03

SECTION 4.0 EVALUATION TRAFFIC

According to the airport, total aircraft operations in the past year were approximately 54,020. Assuming equal departures and arrivals, the annual departures are 27,010.

Detailed air traffic information found on www.airnav.com and www.flightaware.com was used to develop the evaluation traffic. These websites also suggest that the majority of the aircraft are Cessna 172, Piper Warrior, or similar. These aircraft have single-wheel landing gear with gross weights varying from 3,000 lbs. to 15,000 lbs. After consultation with the airport authority, additional dual-wheel aircraft were also included. The evaluation traffic is summarized in Table 4-1. Prior to evaluation, the traffic information data in terms of aircraft type, frequency, and departure weight was verified with the airport authority.

The ACN values for the aircraft are also provided in Table 4-1 for a flexible pavement structure, with subgrade strength categories "A" and "B." The US Army Engineer Research and Development Center developed an online tool, available at https://transportation.erdc.dren.mil/ which quickly computes the ACN of most commercial and military aircraft.

Table 4-1 Pavement Evaluation Traffic

Aircraft	Departure Weight, lbs.	Annual Operations	Annual Departures			ACN		Notes
			Airport	RW 1-19	RW 14-32	F/A	F/B	
SnglWhl-5	3,000	18,250	9,125	5,475	3,650	1	1	Cessna,Piper or similar
SnglWhl-5	7,000	14,600	7,300	4,380	2,920	2	3	
SnglWhl-10	10,000	7,300	3,650	2,190	1,460	4	5	Cessna 500 Citation I or similar
SnglWhl-15	12,500	7,300	3,650	2,190	1,460	2	3	
SnglWhl-15	15,000	2,190	1,095	657	438	3	4	
DualWhl-20	20,000	2,190	1,095	657	438	3	4	
DualWhl-30	30,000	2,190	1,095	657	438	6	7	Gulfstream G150
B-727-100	120,000	832	416	416	0	28	28	Reduced Weight
B-737-100	100,000	832	416	416	0	22	23	Reduced Weight

SECTION 5.0 EVALUATION RESULTS

For PCN evaluation, the combined traffic is converted to the equivalent traffic of a critical aircraft. This is necessary since the procedure used to calculate an ACN allows only one aircraft at a time. By combining all of the aircraft in the traffic mix into an equivalent critical aircraft, it becomes possible to calculate a PCN that includes the effects of all traffic. Once a critical aircraft is determined, all other aircraft are converted to the selected aircraft. Based on Advisory Circular 150/5335-5C, the highest ACN can generally be considered for reporting pavement strength. The computations can be performed using the computer software COMFAA, developed by the FAA.

To obtain the critical aircraft allowable weight, the cumulative damage factor (CDF) concept is adopted in the Advisory Circular. The sum of the CDF from all aircraft in the fleet mix indicates whether the pavement can support the evaluated traffic during a 20-year life span. If the CDF is less than or equal to one, the existing pavement is considered structurally adequate. Otherwise, the existing pavement may not have adequate strength.

However, using the total CDF from the COMFAA evaluations can sometimes yield different results and conclusions from the current design and evaluation procedures prescribed in FAA's Advisory Circular 150/5320-6F, "Airport Pavement Design and Evaluation." The computer software FAARFIELD can be used for the computations, following Advisory Circular 150/5320-6F procedures. Although Advisory Circular 150/5320-6F also uses the CDF concept to evaluate existing pavement's structural capability, the total CDF from the fleet mix is different from the total CDF obtained from the COMFAA program. While COMFAA evaluates a standard pavement section to compute the CDF, FAARFIELD evaluates the actual in-situ pavement structure. This difference in evaluation procedures can result in different CDF values. Therefore, it is necessary to perform evaluation using Advisory Circular 150/5320-6F and the FAARFIELD program methods to cross-check the COMFAA results, and to select a reasonable PCN from the COMFAA evaluation.

The structural conditions of Runway 1-19 and Runway 14-32 were evaluated using FAARFIELD. The remaining structural life was also estimated. From a pavement maintenance point of view, if the remaining life is greater than 10 years, the existing structure is considered structurally adequate. In that case, structural strengthening may not be necessary in the near-term. Otherwise, strengthening may be considered to prolong the life of the pavement based upon aircraft use.

5.1 Analysis of Computation Results

Runway 1-19

As discussed in Section 3.0, three pavement sections were evaluated for Runway 1-19 using FAARFIELD. The computations indicated that Runway 1-19 is structurally adequate for the evaluation traffic and is capable of supporting heavier aircraft than those used in the evaluation. To evaluate the effect of potentially heavier aircraft, the Gulfstream V aircraft was chosen at a departure weight of 90,900 lbs. with 3,000 annual departures. The FAARFIELD computations showed that Runway 1-19 is structurally adequate after the inclusion of the Gulfstream V or similar aircraft.

COMFAA computations provided a total CDF value of much lower than 1 for the evaluation traffic, even after the inclusion of the Gulfstream V aircraft. To be compatible with the FAA's procedures, a total CDF of close to 0.15 was obtained after the traffic was increased by a factor of 10. The PCN for the B727-100 was selected as the controlling PCN.

The PCNs for the three analyzed sections are shown in Table 5-1. COMFAA computation outputs are included in Appendix B.

Table 5-1 Runway 1-19 PCN Results

NDT Station, feet		Evaluation	Evaluation	Subgrade	PCN
From	To	**Structure**	**Thickness, inches**	**CBR, %**	
Runway 1-19, 0+00 at Runway 1 End					
0+00	17+50	4.0" AC / 12.0" Recycled Crushed Concrete Base	17.40	15.00	33/F/A/X/T
17+50	40+50		17.40	15.00	33/F/A/X/T
40+50	52+34		17.10	15.00	32/F/A/X/T

As discussed above, runway strength is generally represented by the weakest pavement section at the two runway ends due to departure aircraft weights. Therefore, the PCN for Runway 1-19 is:

PCN = 32/F/A/X/T.

Runway 14-32

For Runway 14-32, three pavement sections were evaluated using FAARFIELD. The computation results indicated that Runway 14-32 is structurally adequate for the evaluation traffic.

COMFAA computations provided a total CDF value of much lower than 1 for the evaluation traffic. To be compatible with the FAA's procedures, a total CDF of close to 0.15 was obtained after the annual departures of Dual Wheel-30 aircraft such as the Falcon 2000EX were increased to 1200. The PCN for the Dual Wheel-30 was selected as the controlling PCN.

Even though the FAARFIELD computation shows that Runway 14-32 is capable of supporting heavier aircraft than those used in the evaluation, the aircraft tire pressure must be restricted to 181 psi due to the thin AC pavement.

The PCNs for the three analyzed sections are shown in Table 5-2. COMFAA computation outputs are included in Appendix B.

Table 5-2 Runway 14-32 PCN Results

NDT Station, feet		Evaluation	Evaluation	Subgrade	PCN
From	To	Structure	Thickness, inches	CBR, %	
Runway 14-32, 0+00 at Runway 14 End					
0+00	17+00	3.0" AC / 6.0" Rubblized PCC Base	9.00	11.00	9/F/B/Y/T
17+00	36+50		9.00	12.60	11/F/B/Y/T
36+50	49+90		9.00	11.03	9/F/B/Y/T

As discussed above, runway strength is generally represented by the weakest pavement section at the two runway ends due to departure aircraft weights. Therefore, the PCN for Runway 14-32 is:

PCN = 9/F/B/Y/T.

5.2 Runway Strength Reporting

Based on the discussions above, the PCNs and allowable gross weights for standard gear configurations for Runway 1-19 and Runway 14-32 at SEF can be reported as shown in Table 5-3. This information should be published in the FAA's Form 5010, "Airport Master Record."

Table 5-3 PCN and Allowable Load Results (in kips)

Form 5010 Reporting Field	Runway 1-19	Runway 14-32
#35 S Gear	87	30
#36 D Gear	135	45
#37 DT Gear	n/a	n/a
#38 DDT Gear	n/a	n/a
#39 PCN	*32/F/A/X/T	*9/F/B/Y/T

*PCN Reporting Format: PCN# / Pavement Type / Subgrade Category / Allowable Tire Pressure / Determination Method

SECTION 6.0 GUIDANCE FOR UTILIZING PCN RESULTS

Generally, the ACN-PCN system can be used by an airport to determine aircraft operational requests. When the ACN of an aircraft in question is equal to or less than the pavement's PCN, that aircraft can be allowed to use the facility without limitations.

During the lifetime of a pavement, the assigned PCN may be exceeded from occasional overweight aircraft use. For flexible pavements, occasional use by aircraft with ACN not exceeding 10% of the PCN may be allowed. According to FAA Advisory Circular 150/5335-5C, the total annual occasional use should not exceed 5% of the total annual aircraft operations. This may be equated to 500 total coverages. Depending on the aircraft in question, the 500 coverages may be equated to approximately 100 annual departures of dual-wheel aircraft. However, normally overloaded aircraft should not be allowed if the pavements have already exhibited signs of distress, or if it is suspected that the subgrade is weakened by water.

For Runway 1-19, occasional use of aircraft with ACNs greater than "32" but less than "35" (1.1*32) may be allowed. Light aircraft, as considered in the PCN evaluations, may be allowed to operate without restrictions.

For Runway 14-32, occasional use of aircraft with ACNs greater than "9" but less than "10" (1.1*9) may be allowed. Light aircraft, as considered in the PCN evaluations, may be allowed to operate without restrictions.

As the sensitivity analysis indicated, the evaluated traffic and pavement structures can have a great impact on the computed PCN. Reevaluation should be performed if there are significant changes in pavement structures due to rehabilitation, aircraft fleet mix changes, or runway usage changes.

APPENDIX A NONDESTRUCTIVE TESTING DATA

Sebring Regional Airport

Runway 1-19

NDT Field Data

NDT No.	Lane No.	NDT Station Distance	Offset	Force (kip)	Displacement Sensors (mils) d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM (kips/in)	Remarks
0+00 at Runway 1 End														
1	1	200	42' L	20	10.79	8.67	7.18	4.76	3.60	2.82	2.03	82.4	1,854	
2	1	401	42' L	20	9.93	8.17	6.82	4.72	3.72	3.02	2.23	82.1	2,013	
3	1	600	42' L	20	10.37	7.90	6.42	4.20	3.25	2.57	1.61	83.1	1,929	
4	1	800	42' L	20	9.01	7.58	6.26	4.51	3.63	2.96	2.74	83.1	2,220	
5	1	1003	42' L	20	9.65	7.77	6.20	4.24	3.16	2.53	2.51	84.4	2,072	
6	1	1200	42' L	20	10.20	8.19	6.56	4.35	3.32	2.62	2.61	84.7	1,961	
7	1	1401	42' L	20	9.02	8.16	6.62	4.35	3.53	2.93	2.73	84.0	2,218	
8	1	1600	42' L	20	9.86	7.86	6.43	4.36	3.50	2.83	2.00	85.4	2,029	
9	1	1800	42' L	20	5.71	4.66	4.05	3.33	2.94	2.56	2.17	84.7	3,500	TWA2
10	1	2000	42' L	20	8.38	6.06	5.00	3.73	3.10	2.58	1.31	85.0	2,387	
11	1	2200	42' L	20	7.64	5.63	4.75	3.58	3.12	2.59	2.08	84.4	2,619	
12	1	2401	42' L	20	6.90	5.05	4.30	3.38	2.83	2.36	2.06	85.4	2,899	
13	1	2600	42' L	20	5.96	4.57	4.00	3.21	2.76	2.35	1.31	86.0	3,354	
14	1	2800	42' L	20	6.21	4.68	4.08	3.25	2.88	2.28	1.80	85.7	3,220	
15	1	3000	42' L	20	7.25	5.68	4.89	3.71	3.04	2.50	1.75	85.7	2,759	
16	1	3200	42' L	20	7.95	6.17	5.12	3.79	3.18	2.43	1.34	85.7	2,517	
17	1	3401	42' L	20	8.94	6.87	5.77	4.30	3.49	2.89	2.43	85.4	2,236	
18	1	3602	42' L	20	8.79	7.20	6.03	4.34	3.32	2.62	2.08	86.0	2,276	
19	1	3802	42' L	20	5.97	5.03	4.25	3.24	2.63	2.10	2.03	87.3	3,349	RW 14-32
20	1	4000	42' L	20	8.18	6.53	5.50	3.97	3.24	2.55	1.80	86.0	2,444	
21	1	4201	42' L	20	11.82	9.28	7.07	4.32	3.13	2.45	1.79	85.4	1,693	
22	1	4400	42' L	20	12.42	10.15	8.17	5.04	3.70	2.94	2.81	86.4	1,610	
23	1	4600	42' L	20	12.90	10.20	8.40	5.24	3.98	3.21	2.08	87.3	1,550	
24	1	4801	42' L	20	10.48	8.28	6.59	4.11	3.15	2.63	1.81	86.4	1,908	
25	1	5000	42' L	20	11.34	8.60	6.93	4.41	3.55	2.82	1.84	86.7	1,764	
26	1	5197	42' L	20	9.97	7.96	6.35	4.05	3.32	2.69	2.22	85.7	2,005	TWA4
27	2	25	10' L	20	8.33	6.47	5.24	3.60	2.80	2.24	1.76	82.4	2,402	TWA1
28	2	125	10' L	20	10.94	8.92	7.04	4.59	3.33	2.63	2.31	82.4	1,828	
29	2	227	10' L	20	9.50	7.46	6.17	4.15	3.25	2.65	1.80	85.0	2,106	
30	2	326	10' L	20	8.96	7.09	5.98	4.16	3.30	2.68	2.08	86.0	2,232	
31	2	426	10' L	20	7.42	5.43	4.56	3.42	2.89	2.44	1.28	87.0	2,694	
32	2	526	10' L	20	7.46	5.81	4.88	3.59	2.95	2.43	1.86	88.0	2,681	
33	2	626	10' L	20	7.70	6.04	4.98	3.57	2.84	2.30	1.70	88.0	2,599	
34	2	727	10' L	20	7.71	6.53	5.49	4.00	3.31	2.74	1.99	86.7	2,593	
35	2	826	10' L	20	7.78	6.33	5.40	3.97	3.27	2.71	2.26	88.7	2,570	
36	2	926	10' L	20	9.60	7.52	6.19	4.20	3.36	2.76	1.73	87.3	2,083	
37	2	1025	10' L	20	7.63	7.30	6.15	4.46	3.61	2.96	2.52	87.3	2,620	
38	2	1125	10' L	20	8.37	6.95	5.87	4.32	3.48	2.91	1.84	87.7	2,389	
39	2	1225	10' L	20	8.68	7.19	5.95	4.26	3.37	2.76	2.36	88.7	2,303	
40	2	1325	10' L	20	8.14	6.43	5.45	4.05	3.41	2.79	1.88	88.7	2,458	
41	2	1426	10' L	20	8.23	6.53	5.48	4.07	3.40	2.89	2.73	87.3	2,430	
42	2	1527	10' L	20	7.59	5.90	5.00	3.87	3.20	2.69	2.03	87.7	2,635	
43	2	1626	10' L	20	9.61	7.55	6.34	4.53	3.73	3.16	2.20	88.3	2,082	
44	2	1726	10' L	20	8.25	6.73	5.78	4.34	3.62	2.91	1.37	89.0	2,424	TWA2
45	2	1826	10' L	20	5.98	4.81	4.26	3.46	3.04	2.57	2.11	88.0	3,345	
46	2	1925	10' L	20	6.06	4.79	4.08	3.21	2.78	2.29	1.80	89.6	3,298	
47	2	2026	10' L	20	5.51	4.39	3.82	3.13	2.72	2.36	1.52	90.0	3,629	

Sebring Regional Airport

Runway 1-19

NDT Field Data

NDT No.	Lane No.	NDT Station Distance	Offset	Force (kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM (kips/in)	Remarks
0+00 at Runway 1 End														
48	2	2125	10' L	20	6.68	5.47	4.66	3.66	3.07	2.58	1.42	88.3	2,993	
49	2	2225	10' L	20	5.17	4.36	3.89	3.27	2.86	2.47	1.81	90.0	3,866	
50	2	2325	10' L	20	5.36	4.35	3.78	3.19	2.79	2.43	1.89	89.6	3,732	
51	2	2425	10' L	20	5.54	4.73	4.14	3.36	2.90	2.47	1.49	89.6	3,612	
52	2	2525	10' L	20	5.01	3.99	3.53	2.96	2.64	2.29	1.63	89.3	3,988	
53	2	2626	10' L	20	4.62	3.65	3.24	2.79	2.54	2.20	1.79	89.3	4,326	
54	2	2726	10' L	20	5.03	4.42	3.93	3.27	2.90	2.47	2.37	89.6	3,973	
55	2	2826	10' L	20	5.81	4.83	4.27	3.50	3.02	2.59	1.45	90.3	3,442	
56	2	2929	10' L	20	5.57	4.55	4.05	3.37	2.96	2.45	2.27	89.3	3,592	
57	2	3026	10' L	20	6.71	5.54	4.81	3.78	3.18	2.66	2.06	89.6	2,981	
58	2	3127	10' L	20	6.93	6.30	5.50	4.17	3.40	2.78	1.53	88.3	2,888	
59	2	3225	10' L	20	6.64	5.93	5.21	4.00	3.29	2.72	1.74	91.0	3,010	
60	2	3328	10' L	20	6.96	5.58	4.83	3.74	3.05	2.50	2.29	89.3	2,875	
61	2	3427	10' L	20	7.66	6.18	5.26	3.93	3.28	2.71	1.38	90.0	2,611	
62	2	3526	10' L	20	7.24	5.81	5.05	3.75	3.07	2.48	1.62	90.3	2,762	
63	2	3625	10' L	20	7.10	6.12	5.23	3.91	3.15	2.56	1.72	92.0	2,816	
64	2	3725	10' L	20	6.78	5.73	4.99	3.78	3.05	2.48	1.52	92.9	2,948	RW 14-32
65	2	3826	10' L	20	6.86	6.28	5.33	3.94	3.43	2.41	1.66	92.0	2,917	RW 14-32
66	2	3926	10' L	20	7.92	6.50	5.44	3.73	2.87	2.22	1.14	92.0	2,526	
67	2	4025	10' L	20	6.07	5.25	4.50	3.39	2.82	2.32	1.34	92.3	3,292	
68	2	4125	10' L	20	7.38	6.41	5.30	3.57	2.81	2.27	1.86	92.0	2,711	
69	2	4226	10' L	20	8.34	6.87	5.51	3.52	2.66	2.12	1.68	93.6	2,400	
70	2	4328	10' L	20	10.67	8.59	6.91	4.33	3.23	2.60	1.48	93.3	1,875	
71	2	4425	10' L	20	9.59	8.26	6.74	4.30	3.25	2.65	2.34	92.6	2,086	
72	2	4528	10' L	20	10.37	8.09	6.54	4.15	3.23	2.63	2.39	93.9	1,929	
73	2	4626	10' L	20	10.64	8.79	7.13	4.41	3.33	2.71	2.06	92.9	1,880	
74	2	4725	10' L	20	10.03	7.82	6.38	4.15	3.19	2.57	2.13	94.6	1,995	
75	2	4825	10' L	20	8.48	7.43	5.91	3.81	3.00	2.49	1.73	94.6	2,360	
76	2	4924	10' L	20	8.66	6.94	5.58	3.73	2.90	2.33	1.68	93.9	2,310	
77	2	5024	10' L	20	8.81	8.06	6.38	4.19	3.22	2.56	1.99	94.6	2,271	
78	2	5124	10' L	20	10.85	8.61	6.80	4.34	3.33	2.64	2.41	94.6	1,844	
79	2	5201	10' L	20	8.09	6.80	5.53	3.70	3.04	2.52	1.75	94.6	2,473	TWA4
80	3	50	10' R	20	8.92	7.21	6.10	4.51	3.47	2.72	2.63	89.3	2,242	TWA1
81	3	152	10' R	20	9.41	8.00	6.42	4.46	3.31	2.59	2.11	89.0	2,125	
82	3	251	10' R	20	7.98	6.23	5.30	3.85	3.06	2.46	2.00	91.6	2,505	
83	3	352	10' R	20	5.75	5.38	4.63	3.54	2.86	2.34	1.78	93.6	3,479	
84	3	450	10' R	20	6.74	5.26	4.57	3.57	3.01	2.52	2.45	94.6	2,965	
85	3	551	10' R	20	6.54	5.43	4.72	3.61	2.96	2.43	1.74	92.9	3,058	
86	3	650	10' R	20	6.38	5.11	4.37	3.40	2.81	2.33	1.89	93.6	3,133	
87	3	753	10' R	20	6.72	5.58	4.88	3.88	3.26	2.71	2.34	93.3	2,977	
88	3	855	10' R	20	7.66	6.69	5.64	4.11	3.35	2.78	2.08	93.3	2,611	
89	3	951	10' R	20	6.59	6.26	5.36	4.07	3.36	2.78	1.75	95.3	3,034	
90	3	1051	10' R	20	7.93	6.69	5.53	4.16	3.42	2.78	1.84	95.6	2,521	
91	3	1151	10' R	20	8.03	6.37	5.44	4.22	3.53	2.99	2.84	94.3	2,491	
92	3	1250	10' R	20	6.88	6.12	5.43	4.23	3.48	2.87	2.25	94.6	2,907	
93	3	1351	10' R	20	6.99	5.85	5.14	4.06	3.35	2.71	2.41	94.9	2,861	
94	3	1449	10' R	20	7.34	5.83	5.07	3.99	3.37	2.84	2.09	95.6	2,724	

Sebring Regional Airport

Runway 1-19

NDT Field Data

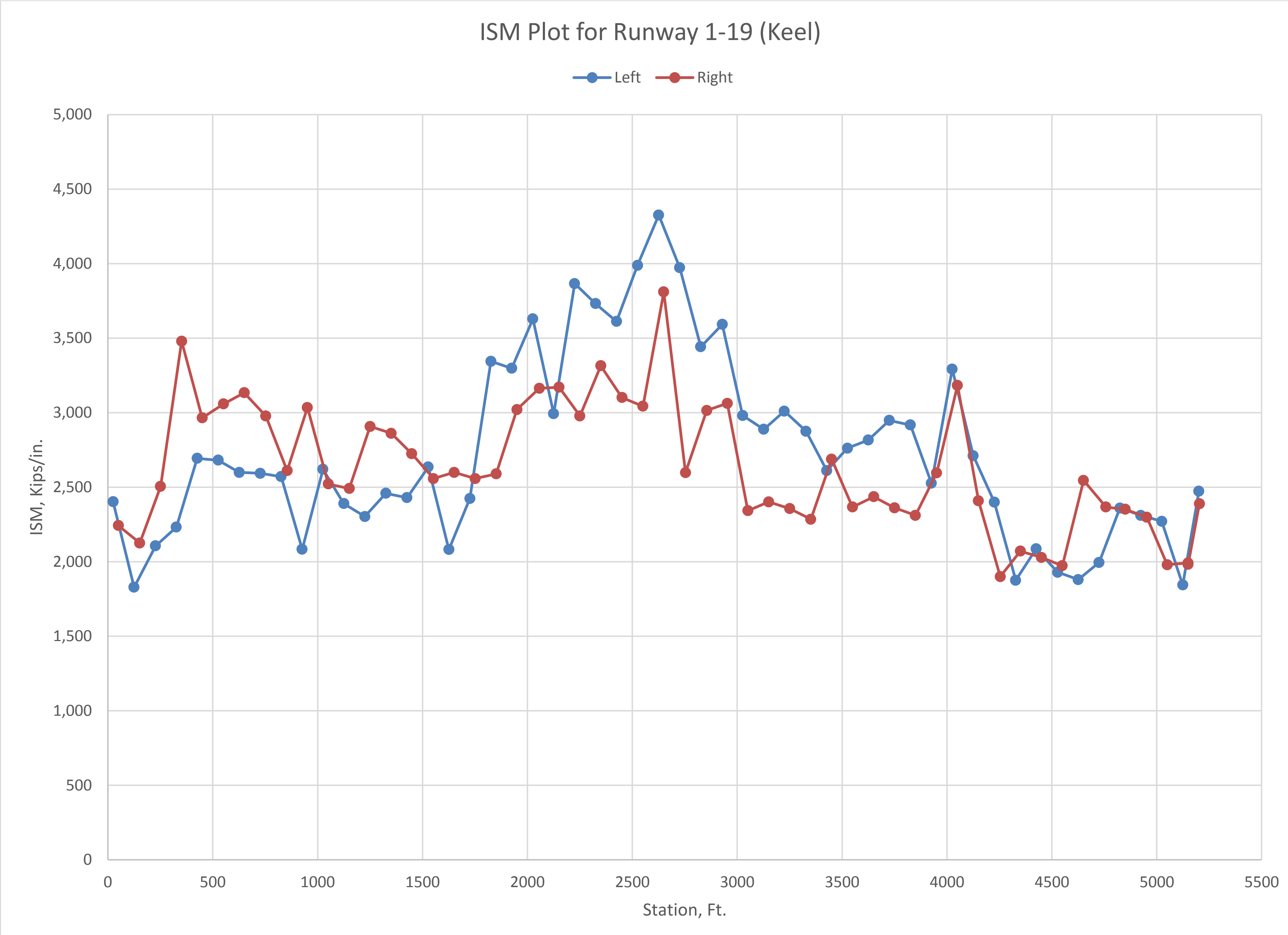
NDT	Lane	NDT Station		Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	**No.**	**Distance**	**Offset**	**(kip)**	**d1 (0)**	**d2 (8")**	**d3 (12")**	**d4 (24")**	**d5 (36")**	**d6 (48")**	**d7 (60")**	**Temp (F)**	**(kips/in)**	**Remarks**
0+00 at Runway 1 End														
95	3	1552	10' R	20	7.82	6.41	5.42	4.06	3.33	2.78	2.16	94.6	2,557	
96	3	1651	10' R	20	7.70	6.36	5.44	4.14	3.48	2.93	2.41	95.3	2,599	
97	3	1751	10' R	20	7.82	7.06	6.04	4.52	3.70	3.10	2.58	95.6	2,558	TWA2
98	3	1851	10' R	20	7.72	6.18	5.27	3.93	3.26	2.73	1.57	95.3	2,589	
99	3	1950	10' R	20	6.62	5.01	4.26	3.33	2.87	2.46	1.57	99.9	3,021	
100	3	2057	10' R	20	6.32	4.77	4.07	3.23	2.80	2.38	1.95	100.5	3,163	
101	3	2151	10' R	20	6.31	5.20	4.37	3.41	2.96	2.52	2.35	98.5	3,170	
102	3	2250	10' R	20	6.72	5.29	4.39	3.36	2.91	2.49	2.08	99.5	2,978	
103	3	2350	10' R	20	6.03	4.75	4.10	3.36	2.96	2.56	2.32	99.5	3,315	
104	3	2451	10' R	20	6.45	5.06	4.16	3.25	2.79	2.36	1.68	99.5	3,101	
105	3	2551	10' R	20	6.57	5.29	4.48	3.46	2.98	2.53	2.27	98.2	3,043	
106	3	2650	10' R	20	5.25	4.47	3.87	3.19	2.75	2.38	2.01	99.5	3,810	
107	3	2754	10' R	20	7.70	5.69	4.70	3.58	3.05	2.60	2.16	98.2	2,597	
108	3	2855	10' R	20	6.63	5.52	4.70	3.49	2.84	2.33	1.60	99.5	3,015	
109	3	2953	10' R	20	6.53	5.19	4.43	3.40	2.85	2.40	1.76	99.9	3,063	
110	3	3051	10' R	20	8.54	6.81	5.71	4.10	3.29	2.66	2.04	100.2	2,342	
111	3	3150	10' R	20	8.33	6.46	5.37	4.01	3.31	2.71	2.19	100.2	2,401	
112	3	3251	10' R	20	8.49	6.71	5.68	4.20	3.46	2.86	1.57	98.2	2,356	
113	3	3351	10' R	20	8.75	6.90	5.74	3.99	3.20	2.65	2.11	98.5	2,285	
114	3	3450	10' R	20	7.44	5.99	5.14	3.78	2.99	2.38	1.56	100.2	2,688	
115	3	3550	10' R	20	8.45	7.12	6.13	4.42	3.40	2.65	2.12	101.2	2,367	
116	3	3651	10' R	20	8.21	6.54	5.69	4.25	3.35	2.62	2.04	100.2	2,436	
117	3	3750	10' R	20	8.47	6.78	5.80	4.25	3.40	2.71	2.16	100.5	2,361	RW 14-32
118	3	3850	10' R	20	8.65	6.95	5.83	4.20	3.20	2.46	1.89	100.9	2,311	
119	3	3951	10' R	20	7.70	6.16	5.27	3.85	2.94	2.28	1.92	101.5	2,596	
120	3	4050	10' R	20	6.28	5.24	4.55	3.43	2.79	2.26	2.03	100.2	3,184	
121	3	4150	10' R	20	8.30	7.01	5.49	3.44	2.64	2.11	1.23	101.5	2,409	
122	3	4254	10' R	20	10.53	7.95	6.32	3.99	2.98	2.39	1.70	101.2	1,900	
123	3	4350	10' R	20	9.66	7.48	6.12	4.21	3.28	2.65	1.13	101.8	2,071	
124	3	4451	10' R	20	9.86	7.39	5.91	3.96	3.20	2.62	2.00	99.9	2,028	
125	3	4550	10' R	20	10.14	8.03	6.47	4.38	3.53	2.94	2.66	101.8	1,973	
126	3	4651	10' R	20	7.86	6.06	5.15	3.88	3.19	2.62	1.90	100.9	2,545	
127	3	4758	10' R	20	8.45	6.41	5.24	3.65	2.97	2.47	2.00	101.5	2,367	
128	3	4850	10' R	20	8.50	6.52	5.21	3.54	2.81	2.33	2.25	101.8	2,352	
129	3	4953	10' R	20	8.70	6.55	5.37	3.63	2.91	2.43	1.92	102.8	2,299	
130	3	5050	10' R	20	10.10	7.46	5.98	3.95	3.15	2.59	2.01	101.8	1,979	
131	3	5150	10' R	20	10.04	7.84	6.27	4.07	3.22	2.64	0.97	101.2	1,992	
132	3	5150	10' R	20	10.09	7.77	6.13	4.07	3.25	2.64	2.49	101.5	1,982	
133	3	5204	10' R	20	8.37	6.25	4.99	3.51	2.89	2.42	1.46	101.5	2,389	TWA4
134	4	175	42' R	20	8.52	6.32	5.32	3.91	3.16	2.52	1.35	97.2	2,347	
135	4	375	42' R	20	7.48	6.20	5.20	3.83	3.13	2.50	1.17	97.2	2,672	
136	4	576	42' R	20	8.13	6.40	5.59	4.42	3.63	2.95	2.44	98.2	2,459	
137	4	775	42' R	20	9.67	7.72	6.70	5.12	4.18	3.47	1.91	99.2	2,067	
138	4	976	42' R	20	10.30	8.21	7.05	5.12	3.98	3.15	2.50	99.5	1,942	
139	4	1182	42' R	20	7.93	6.50	5.68	4.43	3.68	3.02	2.51	99.9	2,521	
140	4	1376	42' R	20	8.16	6.57	5.81	4.57	3.75	3.08	2.45	101.2	2,450	
141	4	1575	42' R	20	8.52	6.48	5.47	4.07	3.41	2.86	2.29	102.5	2,348	

Sebring Regional Airport

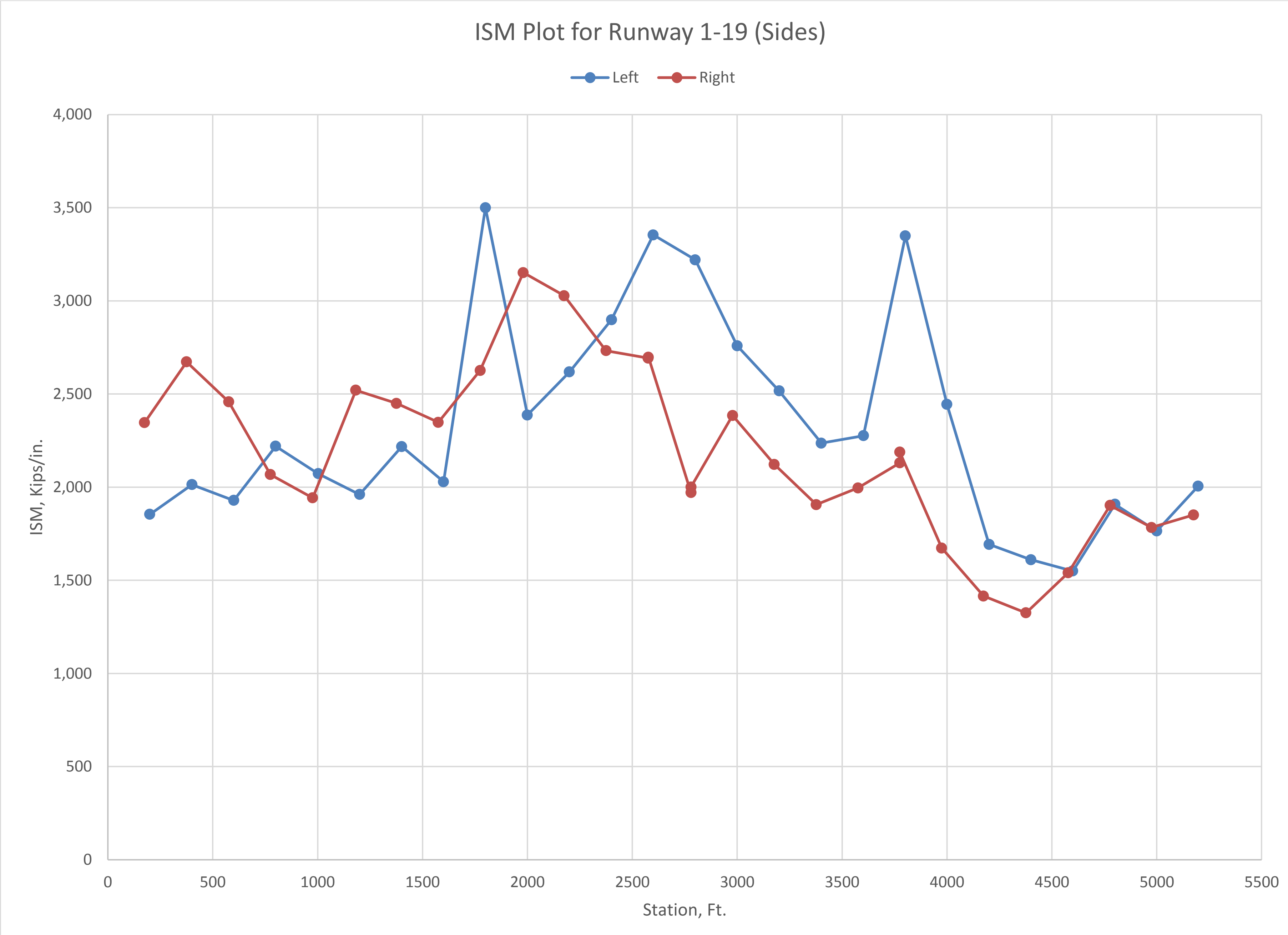
Runway 1-19

NDT Field Data

NDT No.	Lane No.	NDT Station Distance	NDT Station Offset	Force (kip)	Displacement Sensors (mils) d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM (kips/in)	Remarks
0+00 at Runway 1 End														
142	4	1775	42' R	20	7.62	6.14	5.32	4.10	3.52	3.03	2.55	100.5	2,626	
143	4	1980	42' R	20	6.35	4.38	3.66	2.97	2.56	2.13	1.72	101.5	3,152	
144	4	2175	42' R	20	6.61	5.08	4.32	3.39	2.76	2.26	1.88	104.5	3,028	
145	4	2375	42' R	20	7.32	5.81	4.82	3.72	3.17	2.68	1.31	101.8	2,733	
146	4	2575	42' R	20	7.43	5.41	4.62	3.63	3.09	2.61	0.60	103.2	2,693	
147	4	2577	42' R	20	7.41	5.38	4.56	3.64	3.09	2.60	1.97	102.8	2,698	
148	4	2780	42' R	20	10.15	7.40	5.80	3.95	3.28	2.69	0.98	103.8	1,971	
149	4	2780	42' R	20	10.00	7.58	5.94	4.01	3.31	2.70	1.83	104.5	2,001	
150	4	2978	42' R	20	8.39	6.41	5.28	3.78	3.09	2.52	1.33	104.5	2,385	
151	4	3177	42' R	20	9.42	7.19	5.95	4.35	3.54	2.88	2.14	105.1	2,122	
152	4	3377	42' R	20	10.49	7.59	6.14	4.39	3.49	2.79	2.22	105.1	1,906	
153	4	3576	42' R	20	10.02	7.68	6.40	4.37	3.21	2.46	1.75	103.2	1,996	
154	4	3775	42' R	20	9.39	6.91	5.67	4.07	3.19	2.53	0.72	102.5	2,130	RW 14-32
155	4	3775	42' R	20	9.14	6.81	5.58	3.98	3.17	2.53	1.82	102.2	2,188	RW 14-32
156	4	3975	42' R	20	11.95	8.96	7.27	4.78	3.47	2.55	1.93	103.5	1,673	
157	4	4174	42' R	20	14.13	9.83	7.40	4.29	3.09	2.34	1.68	97.2	1,416	
158	4	4377	42' R	20	15.09	12.09	9.72	6.23	4.62	3.65	1.92	104.2	1,326	
159	4	4578	42' R	20	12.98	9.84	7.74	4.86	3.80	3.09	1.92	101.8	1,541	
160	4	4778	42' R	20	10.51	7.82	6.12	3.90	3.11	2.60	2.17	101.2	1,902	
161	4	4975	42' R	20	11.21	8.38	6.69	4.41	3.54	2.86	1.80	99.9	1,784	
162	4	5176	42' R	20	10.80	8.60	6.93	4.36	3.33	2.69	2.43	95.3	1,851	TWA4



ISM Plot for Runway 1-19 (Keel)
Left
Right
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
ISM, Kips/in.
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
Station, Ft.



ISM Plot for Runway 1-19 (Sides)
Left
Right
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
ISM, Kips/in.
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
Station, Ft.

Sebring Regional Airport

Runway 14-32

NDT Field Data

NDT No.	Lane No.	NDT Station Distance	Offset	Force (kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM (kips/in)	Remarks
0+00 at Runway 14 End														
1	1	200	44' L	20	15.57	14.38	13.43	9.73	6.87	4.74	2.82	102.2	1,284	
2	1	400	44' L	20	12.75	11.12	10.30	7.91	5.85	4.15	2.66	101.8	1,569	
3	1	600	44' L	20	18.02	17.15	16.25	12.32	8.59	5.71	3.56	101.2	1,110	
4	1	800	44' L	20	17.62	15.31	13.53	9.51	6.61	4.51	1.77	100.2	1,135	
5	1	1000	44' L	20	16.28	14.12	12.84	9.61	7.17	5.31	2.27	100.5	1,229	
6	1	1200	44' L	20	10.63	10.32	9.69	7.49	5.52	3.96	2.15	100.9	1,882	
7	1	1400	44' L	20	11.59	10.90	10.19	7.17	5.00	3.26	2.06	98.2	1,726	
8	1	1601	44' L	20	19.29	16.17	14.74	10.50	7.57	5.44	0.22	100.9	1,037	
9	1	1601	44' L	20	18.74	15.99	14.59	10.41	7.53	5.46	2.48	100.5	1,067	
10	1	1800	44' L	20	9.30	7.27	6.25	4.42	3.31	2.42	1.67	102.5	2,151	RW 1-19
11	1	2000	44' L	20	23.57	20.49	18.21	12.26	8.08	5.06	3.41	101.5	848	
12	1	2200	44' L	20	14.79	13.55	12.80	10.26	8.12	6.18	2.55	100.9	1,352	
13	1	2400	44' L	20	13.57	12.75	12.00	9.47	7.17	5.13	2.58	101.5	1,474	
14	1	2600	44' L	20	12.94	11.89	11.19	9.02	7.01	5.10	1.37	102.2	1,545	
15	1	2800	44' L	20	13.36	12.52	11.80	9.50	7.72	5.97	4.50	100.9	1,497	
16	1	3000	44' L	20	15.07	13.89	13.15	10.38	8.04	5.95	2.53	101.2	1,327	
17	1	3202	44' L	20	14.90	13.79	12.89	10.15	7.64	5.64	3.31	102.5	1,342	
18	1	3402	44' L	20	13.31	12.06	11.16	8.35	6.14	4.41	2.75	101.8	1,503	
19	1	3601	44' L	20	13.12	11.98	11.28	8.97	6.84	4.99	3.24	103.5	1,524	
20	1	3800	44' L	20	14.54	13.11	12.37	9.70	7.50	5.73	2.97	103.5	1,375	
21	1	4000	44' L	20	13.81	12.58	11.77	9.24	7.15	5.28	3.29	104.2	1,449	
22	1	4200	44' L	20	17.31	15.54	14.47	11.26	8.54	6.26	2.32	103.5	1,156	
23	1	4400	44' L	20	18.67	17.42	16.22	12.84	9.98	7.47	4.45	103.8	1,071	
24	1	4600	44' L	20	21.43	19.54	18.25	13.84	10.00	7.40	6.31	102.5	933	
25	1	4800	44' L	20	19.27	17.22	15.90	11.88	8.86	6.56	4.20	104.2	1,038	
26	1	4966	44' L	20	16.70	15.62	14.02	10.21	6.79	5.15	3.63	104.5	1,197	
27	2	25	6' L	20	13.91	12.66	11.18	7.74	5.61	4.05	2.39	104.2	1,438	
28	2	125	6' L	20	14.29	11.53	10.48	8.01	5.99	4.37	3.09	106.1	1,399	
29	2	225	6' L	20	10.55	9.45	8.74	6.81	5.15	3.80	2.43	105.8	1,896	
30	2	326	6' L	20	9.96	8.76	8.21	6.68	5.35	4.14	3.01	104.2	2,008	
31	2	426	6' L	20	11.37	9.33	8.56	6.73	5.20	3.98	1.14	105.8	1,759	
32	2	525	6' L	20	11.73	11.25	10.83	9.49	7.72	5.83	4.29	106.1	1,705	
33	2	625	6' L	20	11.22	10.40	10.21	9.49	8.55	7.37	6.72	106.1	1,783	
34	2	725	6' L	20	13.96	13.50	13.23	10.65	7.95	5.70	2.87	105.5	1,432	
35	2	825	6' L	20	9.83	9.43	9.05	7.56	5.94	4.34	3.28	106.1	2,034	
36	2	925	6' L	20	11.13	9.77	9.00	7.23	5.79	4.26	4.06	104.8	1,797	
37	2	1025	6' L	20	13.15	11.93	11.35	9.31	7.06	5.22	2.98	105.8	1,521	
38	2	1126	6' L	20	10.18	8.97	8.48	7.10	5.77	4.52	4.41	106.1	1,965	
39	2	1225	6' L	20	9.72	8.29	7.77	6.35	4.97	3.62	1.85	105.1	2,058	
40	2	1326	6' L	20	12.35	10.63	9.71	7.52	5.77	4.28	3.80	106.8	1,619	
41	2	1425	6' L	20	10.05	8.71	8.16	6.60	5.00	3.63	2.18	105.5	1,989	
42	2	1525	6' L	20	14.35	13.61	13.34	11.99	10.03	7.74	6.08	105.8	1,394	
43	2	1626	6' L	20	13.11	11.39	10.65	8.47	6.50	4.88	2.93	106.1	1,525	
44	2	1725	6' L	20	12.65	11.28	10.37	8.10	6.10	4.42	2.72	107.8	1,581	
45	2	1825	6' L	20	7.69	6.22	5.32	3.89	3.03	2.38	2.09	108.1	2,600	RW 1-19
46	2	1926	6' L	20	8.45	6.30	5.32	3.90	3.14	2.53	1.63	109.4	2,367	RW 1-19
47	2	2025	6' L	20	12.52	10.75	9.96	7.79	5.99	4.47	2.23	105.5	1,597	

Sebring Regional Airport

Runway 14-32

NDT Field Data

NDT No.	Lane No.	NDT Station Distance	Offset	Force (kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM (kips/in)	Remarks
0+00 at Runway 14 End														
48	2	2126	6' L	20	11.56	10.28	9.52	7.63	5.94	4.54	2.47	105.8	1,730	
49	2	2226	6' L	20	10.64	9.33	8.64	6.98	5.46	4.12	1.88	107.1	1,879	
50	2	2326	6' L	20	10.29	9.40	8.82	7.33	5.92	4.59	2.10	105.1	1,944	
51	2	2424	6' L	20	10.97	10.15	9.34	7.76	6.24	4.93	1.59	106.5	1,823	
52	2	2525	6' L	20	4.90	4.19	3.96	3.64	3.38	3.05	1.97	105.1	4,079	
53	2	2625	6' L	20	10.83	9.88	9.21	7.48	6.03	4.74	3.60	101.8	1,847	
54	2	2727	6' L	20	10.67	9.64	9.01	7.34	5.91	4.63	2.31	105.8	1,874	
55	2	2827	6' L	20	10.51	9.55	8.98	7.54	6.10	4.76	3.07	105.5	1,903	
56	2	2925	6' L	20	12.73	10.90	9.97	7.62	5.76	4.36	1.65	107.1	1,572	
57	2	3025	6' L	20	9.81	8.65	7.97	6.48	5.20	4.18	3.26	106.8	2,039	
58	2	3128	6' L	20	11.03	9.93	9.21	7.48	5.88	4.53	1.72	106.8	1,813	
59	2	3227	6' L	20	9.50	8.25	7.71	6.50	5.31	4.19	3.14	107.4	2,106	
60	2	3325	6' L	20	8.53	7.48	6.98	5.89	4.87	3.95	3.05	107.4	2,345	
61	2	3426	6' L	20	8.64	7.62	7.18	6.10	5.05	4.05	2.71	108.8	2,314	
62	2	3526	6' L	20	9.83	8.44	7.77	6.33	4.95	3.72	2.32	109.4	2,035	
63	2	3627	6' L	20	9.49	8.41	7.88	6.55	5.30	4.20	3.14	108.4	2,107	
64	2	3725	6' L	20	13.75	12.37	11.53	9.33	7.18	5.51	1.84	109.4	1,455	
65	2	3825	6' L	20	11.53	10.25	9.50	7.71	6.19	4.87	3.77	109.4	1,734	
66	2	3925	6' L	20	11.21	10.07	9.39	7.57	5.95	4.58	1.02	109.4	1,783	
67	2	4025	6' L	20	10.65	9.56	8.90	7.19	5.67	4.35	2.84	110.4	1,877	
68	2	4125	6' L	20	9.25	8.29	7.78	6.36	4.99	3.83	2.32	110.7	2,161	
69	2	4227	6' L	20	12.21	11.13	10.30	8.35	6.57	5.07	4.77	109.4	1,638	
70	2	4326	6' L	20	16.45	14.56	13.22	10.22	7.63	5.58	2.99	111.4	1,216	
71	2	4426	6' L	20	12.90	11.33	10.50	8.43	6.62	5.03	3.30	110.4	1,550	
72	2	4525	6' L	20	14.59	12.58	11.66	9.04	6.74	5.04	1.67	109.8	1,371	
73	2	4625	6' L	20	14.47	12.46	11.48	8.92	6.78	5.06	4.12	111.7	1,382	
74	2	4728	6' L	20	16.24	14.67	13.66	10.57	7.93	5.87	1.88	108.1	1,231	
75	2	4826	6' L	20	12.32	10.65	9.99	8.00	6.27	4.89	3.81	112.4	1,624	
76	2	4925	6' L	20	13.04	11.51	10.63	8.20	6.23	4.60	3.09	106.1	1,534	
77	2	4970	6' L	20	12.70	10.78	9.88	7.34	5.55	4.09	2.32	107.1	1,574	
78	3	50	6' R	20	12.43	10.88	9.80	7.42	5.48	4.06	2.92	106.8	1,610	
79	3	150	6' R	20	11.34	10.53	9.95	8.23	6.35	4.71	2.36	107.1	1,764	
80	3	250	6' R	20	12.00	11.35	10.77	8.63	6.52	4.70	2.80	101.5	1,666	
81	3	350	6' R	20	10.03	7.88	7.36	5.97	4.67	3.58	2.43	104.8	1,993	
82	3	450	6' R	20	12.22	10.83	10.00	8.07	6.05	4.43	3.44	104.2	1,637	
83	3	554	6' R	20	12.52	10.83	9.84	7.49	5.66	4.21	2.87	104.8	1,598	
84	3	651	6' R	20	13.80	12.40	11.31	8.57	6.33	4.62	3.00	103.2	1,449	
85	3	751	6' R	20	16.30	15.62	15.06	13.18	10.45	7.84	5.05	105.1	1,227	
86	3	851	6' R	20	12.90	10.95	10.05	7.50	5.47	3.93	2.35	105.1	1,550	
87	3	950	6' R	20	11.18	9.99	9.41	7.97	6.44	4.90	2.22	105.8	1,789	
88	3	1051	6' R	20	14.77	13.35	12.05	9.17	6.78	5.04	2.50	104.8	1,354	
89	3	1151	6' R	20	14.18	12.68	11.67	9.23	7.12	5.13	3.39	105.8	1,410	
90	3	1255	6' R	20	10.39	9.27	8.62	6.90	5.28	3.77	2.08	105.1	1,925	
91	3	1351	6' R	20	9.84	8.89	8.38	7.07	5.47	4.01	2.83	105.8	2,033	
92	3	1450	6' R	20	10.00	8.52	8.06	6.89	5.64	4.32	0.23	108.8	2,001	
93	3	1450	6' R	20	9.68	8.55	8.00	6.90	5.68	4.34	2.96	107.1	2,066	
94	3	1551	6' R	20	15.69	14.26	13.73	11.07	8.31	5.95	2.90	104.5	1,275	

Sebring Regional Airport

Runway 14-32

NDT Field Data

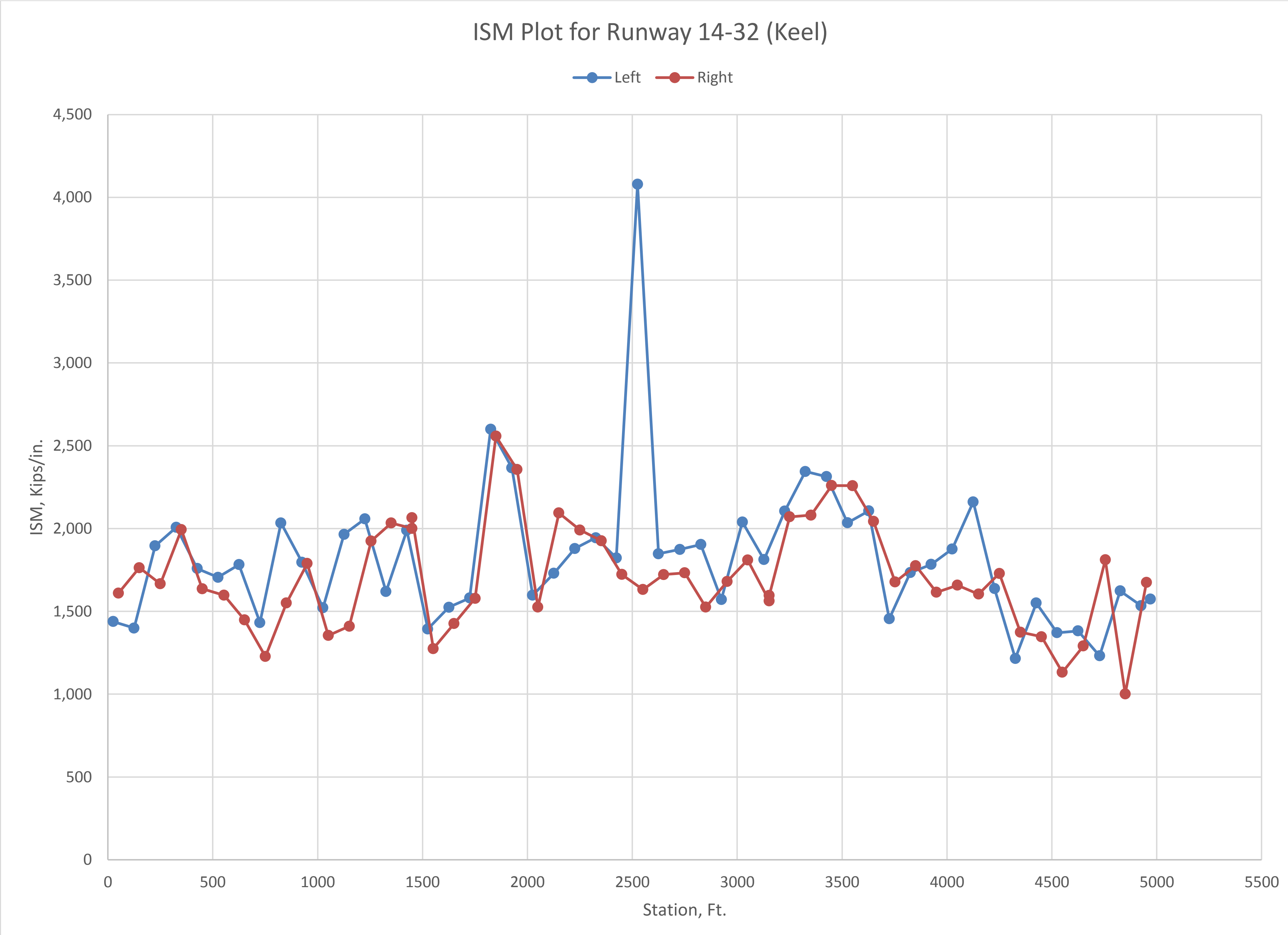
NDT No.	Lane No.	NDT Station Distance	NDT Station Offset	Force (kip)	Displacement Sensors (mils) d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM (kips/in)	Remarks
0+00 at Runway 14 End														
95	3	1650	6' R	20	14.02	12.55	11.53	8.77	6.58	4.82	2.42	105.1	1,426	
96	3	1751	6' R	20	12.67	11.32	10.58	8.38	6.41	4.61	2.93	104.8	1,578	
97	3	1850	6' R	20	7.82	6.31	5.63	4.38	3.44	2.68	1.94	106.5	2,558	RW 1-19
98	3	1951	6' R	20	8.49	6.63	5.53	3.89	2.98	2.36	1.06	107.4	2,356	RW 1-19
99	3	2050	6' R	20	13.11	10.81	10.06	8.06	6.06	4.46	2.65	104.2	1,525	
100	3	2150	6' R	20	9.55	8.22	7.75	6.47	5.25	4.12	2.87	104.5	2,094	
101	3	2250	6' R	20	10.04	8.90	8.37	6.98	5.53	4.18	2.81	105.5	1,991	
102	3	2352	6' R	20	10.38	8.95	8.42	6.93	5.37	4.05	2.40	104.8	1,927	
103	3	2450	6' R	20	11.61	10.29	9.64	7.58	5.53	3.73	1.79	105.5	1,723	
104	3	2551	6' R	20	12.26	10.87	10.16	8.23	6.49	5.00	3.50	104.2	1,632	
105	3	2650	6' R	20	11.61	10.49	9.80	7.96	6.17	4.68	2.92	102.8	1,722	
106	3	2750	6' R	20	11.54	10.35	9.74	7.96	6.27	4.75	2.55	101.8	1,732	
107	3	2850	6' R	20	13.11	11.46	10.82	8.88	7.03	5.36	2.87	102.8	1,525	
108	3	2952	6' R	20	11.90	10.90	10.25	8.49	6.71	5.13	3.27	104.2	1,680	
109	3	3050	6' R	20	11.05	9.45	8.81	7.04	5.50	4.29	3.65	105.8	1,810	
110	3	3153	6' R	20	12.80	10.77	9.97	7.93	5.97	4.42	0.91	105.1	1,563	
111	3	3153	6' R	20	12.53	10.71	9.94	7.91	5.98	4.45	2.63	103.2	1,597	
112	3	3250	6' R	20	9.66	8.71	8.11	7.11	5.91	4.72	2.88	103.8	2,071	
113	3	3352	6' R	20	9.61	8.29	7.74	6.49	5.29	4.14	3.54	104.2	2,081	
114	3	3450	6' R	20	8.85	7.55	7.09	6.10	5.02	3.94	2.60	103.2	2,260	
115	3	3550	6' R	20	8.85	7.31	6.80	5.70	4.54	3.51	2.56	103.5	2,259	
116	3	3650	6' R	20	9.79	8.33	7.82	6.68	5.52	4.46	3.38	103.2	2,043	
117	3	3753	6' R	20	11.92	10.61	10.03	8.36	6.69	5.24	2.22	103.5	1,677	
118	3	3851	6' R	20	11.26	9.50	8.85	7.23	5.76	4.58	2.27	104.2	1,776	
119	3	3950	6' R	20	12.38	10.44	9.58	7.59	5.86	4.52	2.76	105.8	1,615	
120	3	4050	6' R	20	12.06	10.97	10.18	8.10	6.17	4.59	1.81	105.1	1,658	
121	3	4151	6' R	20	12.47	10.51	9.65	7.20	5.21	3.81	1.66	103.8	1,604	
122	3	4250	6' R	20	11.57	9.96	9.38	7.66	5.99	4.56	1.73	104.2	1,729	
123	3	4350	6' R	20	14.55	13.60	12.57	9.78	7.40	5.51	2.84	103.8	1,374	
124	3	4451	6' R	20	14.85	12.86	11.80	9.21	7.05	5.25	4.47	102.8	1,346	
125	3	4550	6' R	20	17.66	16.68	15.58	11.87	8.61	6.03	4.91	104.2	1,132	
126	3	4650	6' R	20	15.50	13.93	13.04	10.27	7.96	5.91	2.95	104.8	1,291	
127	3	4755	6' R	20	11.04	9.88	9.24	7.57	5.99	4.64	3.57	103.5	1,811	
128	3	4850	6' R	20	19.96	16.22	14.50	10.47	7.45	5.34	2.37	104.2	1,002	
129	3	4951	6' R	20	11.95	11.03	9.95	7.51	5.47	3.99	2.05	99.5	1,674	
130	4	175	44' R	20	17.27	16.27	15.42	11.85	8.79	6.25	2.76	107.8	1,158	
131	4	376	44' R	20	12.63	10.98	10.23	7.89	5.87	4.28	0.69	110.1	1,583	
132	4	376	44' R	20	12.35	11.09	10.39	8.03	5.91	4.33	1.18	108.8	1,620	
133	4	576	44' R	20	14.51	13.48	12.69	9.74	7.06	5.09	1.57	111.7	1,378	
134	4	775	44' R	20	15.57	13.96	13.14	10.15	7.61	5.54	3.14	110.7	1,285	
135	4	976	44' R	20	15.00	14.61	14.09	10.66	7.64	5.24	2.94	110.7	1,334	
136	4	1176	44' R	20	14.88	14.04	13.12	10.44	7.93	5.86	3.91	106.8	1,344	
137	4	1377	44' R	20	12.39	10.52	9.67	7.34	5.26	3.63	2.59	108.1	1,614	TWA
138	4	1574	44' R	20	12.88	11.82	11.11	8.79	6.75	4.84	1.65	107.1	1,553	
139	4	1776	44' R	20	13.51	11.43	10.53	8.09	5.99	4.37	1.87	108.4	1,480	
140	4	1981	44' R	20	8.02	6.15	5.18	3.79	3.06	2.42	1.48	107.1	2,492	
141	4	2176	44' R	20	13.27	11.46	10.92	8.60	6.52	4.70	2.73	107.4	1,507	

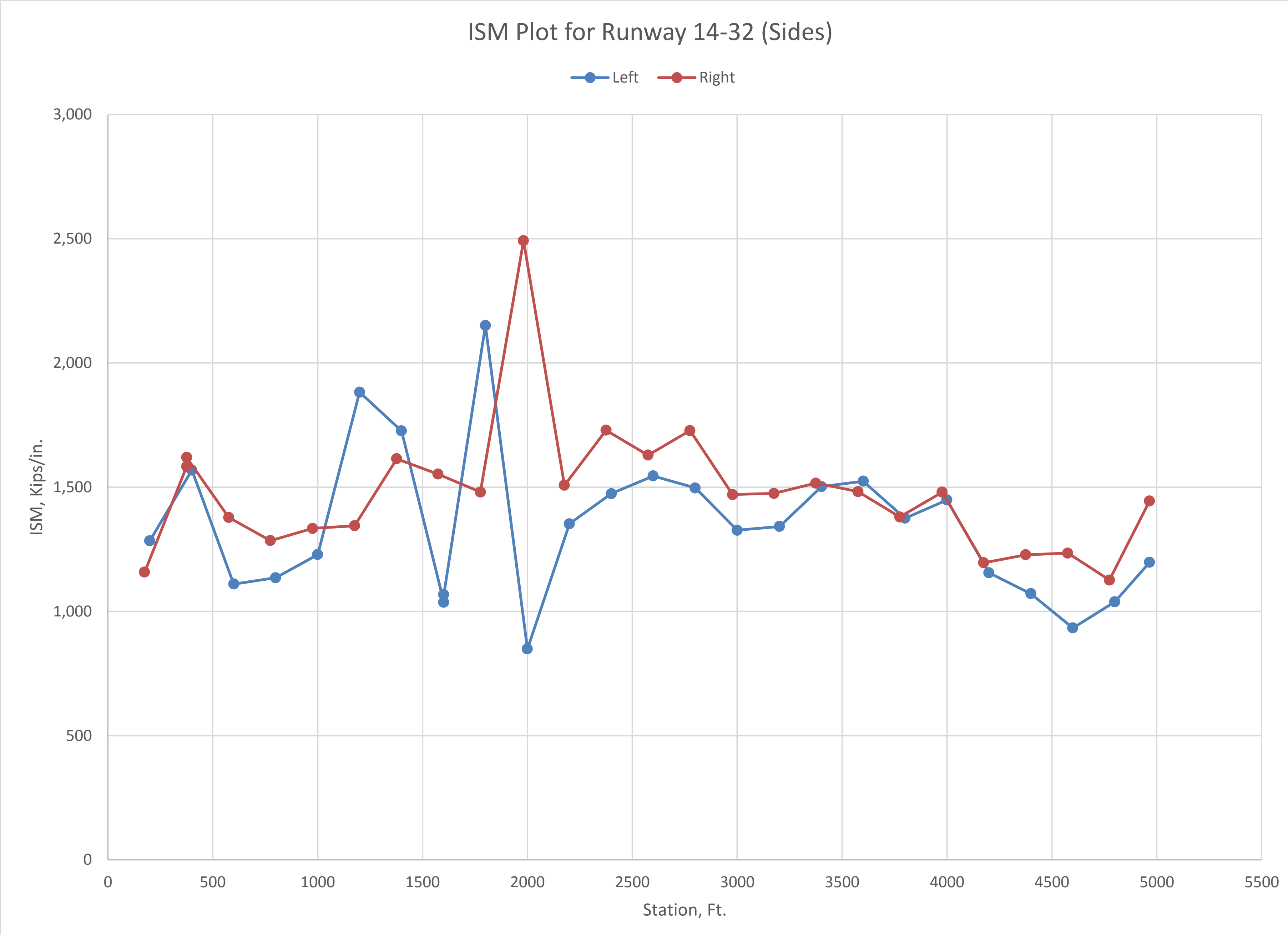
Sebring Regional Airport

Runway 14-32

NDT Field Data

NDT No.	Lane No.	NDT Station Distance	NDT Station Offset	Force (kip)	Displacement Sensors (mils) d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM (kips/in)	Remarks
0+00 at Runway 14 End														
142	4	2375	44' R	20	11.57	10.42	9.76	7.80	5.94	4.33	2.53	110.1	1,729	
143	4	2575	44' R	20	12.28	11.16	10.54	8.46	6.59	4.83	2.21	109.8	1,629	
144	4	2775	44' R	20	11.58	10.63	10.03	8.19	6.40	4.79	2.19	108.4	1,728	
145	4	2978	44' R	20	13.60	12.37	11.59	9.22	7.11	5.35	2.14	108.4	1,470	
146	4	3175	44' R	20	13.56	12.51	11.89	9.92	7.97	5.96	3.08	108.4	1,475	
147	4	3375	44' R	20	13.19	12.46	11.91	9.86	7.93	6.23	3.07	106.5	1,516	
148	4	3576	44' R	20	13.49	11.76	11.03	8.67	6.59	4.93	3.29	109.8	1,482	
149	4	3775	44' R	20	14.49	13.01	12.39	10.36	8.36	6.48	2.49	110.1	1,380	
150	4	3977	44' R	20	13.51	12.05	11.27	8.92	6.78	4.97	2.87	110.4	1,480	
151	4	4175	44' R	20	16.73	15.02	13.97	10.83	8.11	5.90	5.44	109.1	1,196	
152	4	4375	44' R	20	16.29	14.90	13.95	11.05	8.66	6.51	3.57	108.1	1,228	
153	4	4576	44' R	20	16.20	14.63	13.93	11.04	8.48	6.23	2.46	108.1	1,235	
154	4	4775	44' R	20	17.76	16.05	14.98	11.48	8.51	6.23	4.05	108.8	1,126	
155	4	4966	44' R	20	13.85	12.96	11.97	8.86	6.14	4.59	1.95	106.8	1,445	


ISM Plot for Runway 14-32 (Keel)
Left
Right
ISM, Kips/in.
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
Station, Ft.


ISM Plot for Runway 14-32 (Sides)
Left
Right
3,000
2,500
2,000
1,500
1,000
500
0
ISM, Kips/in.
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
Station, Ft.

APPENDIX B COMFAA OUTPUTS

PCN Results Flexible 4-17-2017 12;21;36

This file name = PCN Results Flexible 4-17-2017 12;21;36.txt
Library file name = C:\1 Florida Reports\SEF Airport\SEF RW 1-19-New Traffic-1.Ext
Units = English

Evaluation pavement type is flexible and design procedure is CBR.
Alpha Values are those approved by the ICAO in 2007.

CBR = 15.00 (Subgrade Category is A(15))
Evaluation pavement thickness = 17.10 in
Pass to Traffic Cycle (PtoTC) Ratio = 10.00 (non-standard)
Maximum number of wheels per gear = 2
Maximum number of gears per aircraft = 2

No aircraft have 4 or more wheels per gear. The FAA recommends a reference section assuming 3 inches of HMA and 6 inches of crushed aggregate for equivalent thickness calculations.

Results Table 1. Input Traffic Data

No.	Aircraft Name	Gross Weight	Percent Gross Wt	Tire Press	Annual Deps	20-yr Coverages	6D Thick
1	Gulfstream-G-V	90,900	95.00	188.0	3,000	143,044	15.81
2	B737-100	100,000	91.90	157.0	416	20,680	13.07
3	B727-100C Alternate	120,000	95.30	165.0	416	21,819	14.71
4	Single Wheel 2	3,000	100.00	30.0	5,475	127,583	2.37
5	Single Wheel 5	7,000	100.00	45.0	4,380	127,047	4.72
6	Single Wheel 10	10,000	100.00	50.0	2,190	71,915	5.88
7	Single Wheel 12.5	12,500	95.00	50.0	2,190	55,575	4.47
8	Single Wheel 15	15,000	95.00	50.0	657	18,248	4.58
9	Dual Wheel 20	20,000	95.00	65.0	657	25,699	5.05
10	Dual Wheel 30	30,000	95.00	85.0	657	27,214	6.69

Results Table 2. PCN Values

No.	Aircraft Name	Critical Aircraft Total Equiv. Covs.	Thickness for Total Equiv. Covs.	Maximum Allowable Gross Weight	ACN Thick at Max. Allowable Gross Weight	CDF	PCN on A(15)
1	Gulfstream-G-V	179,347	15.96	101,461	14.61	0.1336	29.9
2	B737-100	>5,000,000	16.43	106,904	13.02	0.0004	23.8
3	B727-100C Alternate	109,225	15.94	135,164	15.06	0.0334	31.7
4	Single Wheel 2	>5,000,000	4.09	52,438	8.54	0.0000	10.2
5	Single Wheel 5	>5,000,000	8.13	30,989	8.55	0.0000	10.2
6	Single Wheel 10	>5,000,000	10.42	26,917	8.55	0.0000	10.2
7	Single Wheel 12.5	>5,000,000	8.03	56,667	8.55	0.0000	10.2
8	Single Wheel 15	>5,000,000	8.80	56,667	8.55	0.0000	10.2
9	Dual Wheel 20	>5,000,000	8.21	64,721	10.79	0.0000	16.3
10	Dual Wheel 30	>5,000,000	10.56	61,829	10.49	0.0000	15.4
					Total CDF =	0.1674	

Results Table 3. Flexible ACN at Indicated Gross Weight and Strength

No.	Aircraft Name	Gross Weight	% GW on Main Gear	Tire Pressure	ACN Thick	ACN on A(15)
1	Gulfstream-G-V	90,900	95.00	188.0	13.57	25.8
2	B737-100	100,000	91.90	157.0	12.49	21.9

3	B727-100C Alternate	120,000	95.30	165.0	14.06	27.7
4	Single Wheel 2	3,000	100.00	30.0	2.04	0.6
5	Single Wheel 5	7,000	100.00	45.0	4.06	2.3
6	Single Wheel 10	10,000	100.00	50.0	5.21	3.8
7	Single Wheel 12.5	12,500	95.00	50.0	4.02	2.3
8	Single Wheel 15	15,000	95.00	50.0	4.40	2.7
9	Dual Wheel 20	20,000	95.00	65.0	4.79	3.2
10	Dual Wheel 30	30,000	95.00	85.0	6.30	5.6

Results Table 4. Summary Output for Copy and Paste Into the Support Spread Sheet

```
Num,Plane,GWin,ACNin,ADout,6Dt,COV20yr,COVtoF,CDFt,GWcdf,PCNcdf,EVALt,SUBcode,KorCBR,PtoTC,FlexOrRig
1,Gulfstream-G-V,90900.000,25.8,30000,15.81,1.43044E+005,1.07107E+006,15.96,101461.485,29.9,17.1,A,15.00,10.00,F
2,B737-100,100000.000,21.9,4160,13.07,2.06797E+004,4.65432E+007,16.43,106903.895,23.8,17.1,A,15.00,10.00,F
3,B727-100C Alternate,120000.000,27.7,4160,14.71,2.18194E+004,6.52303E+005,15.94,135164.363,31.7,17.1,A,15.00,10.00,F
4,Single Wheel 2,3000.000,0.6,54750,2.37,1.27583E+005,1.01423E+304,4.09,52438.278,10.2,17.1,A,15.00,10.00,F
5,Single Wheel 5,7000.000,2.3,43800,4.72,1.27047E+005,1.01423E+304,8.13,30989.216,10.2,17.1,A,15.00,10.00,F
6,Single Wheel 10,10000.000,3.8,21900,5.88,7.19152E+004,1.01423E+304,10.42,26916.542,10.2,17.1,A,15.00,10.00,F
7,Single Wheel 12.5,12500.000,2.3,21900,4.47,5.55750E+004,1.01423E+304,8.03,56666.607,10.2,17.1,A,15.00,10.00,F
8,Single Wheel 15,15000.000,2.7,6570,4.58,1.82484E+004,1.30880E+277,8.80,56666.606,10.2,17.1,A,15.00,10.00,F
9,Dual Wheel 20,20000.000,3.2,6570,5.05,2.56990E+004,1.01423E+304,8.21,64721.285,16.3,17.1,A,15.00,10.00,F
10,Dual Wheel 30,30000.000,5.6,6570,6.69,2.72143E+004,2.61980E+177,10.56,61828.735,15.4,17.1,A,15.00,10.00,F
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PCN Results Flexible 4-17-2017 12;22;00

This file name = PCN Results Flexible 4-17-2017 12;22;00.txt
Library file name = C:\1 Florida Reports\SEF Airport\SEF RW 1-19-New Traffic-1.Ext
Units = English

Evaluation pavement type is flexible and design procedure is CBR.
Alpha Values are those approved by the ICAO in 2007.

CBR = 15.00 (Subgrade Category is A(15))
Evaluation pavement thickness = 17.40 in
Pass to Traffic Cycle (PtoTC) Ratio = 10.00 (non-standard)
Maximum number of wheels per gear = 2
Maximum number of gears per aircraft = 2

No aircraft have 4 or more wheels per gear. The FAA recommends a reference section assuming 3 inches of HMA and 6 inches of crushed aggregate for equivalent thickness calculations.

Results Table 1. Input Traffic Data

No.	Aircraft Name	Gross Weight	Percent Gross Wt	Tire Press	Annual Deps	20-yr Coverages	6D Thick
1	Gulfstream-G-V	90,900	95.00	188.0	3,000	143,044	15.81
2	B737-100	100,000	91.90	157.0	416	20,680	13.07
3	B727-100C Alternate	120,000	95.30	165.0	416	21,819	14.71
4	Single Wheel 2	3,000	100.00	30.0	5,475	127,583	2.37
5	Single Wheel 5	7,000	100.00	45.0	4,380	127,047	4.72
6	Single Wheel 10	10,000	100.00	50.0	2,190	71,915	5.88
7	Single Wheel 12.5	12,500	95.00	50.0	2,190	55,575	4.47
8	Single Wheel 15	15,000	95.00	50.0	657	18,248	4.58
9	Dual Wheel 20	20,000	95.00	65.0	657	25,699	5.05
10	Dual Wheel 30	30,000	95.00	85.0	657	27,214	6.69

Results Table 2. PCN Values

No.	Aircraft Name	Critical Aircraft Total Equiv. Covs.	Thickness for Total Equiv. Covs.	Maximum Allowable Gross Weight	ACN Thick at Max. Allowable Gross Weight	CDF	PCN on A(15)
1	Gulfstream-G-V	179,939	15.96	104,354	14.88	0.0777	31.0
2	B737-100	>5,000,000	16.58	108,455	13.14	0.0002	24.2
3	B727-100C Alternate	107,365	15.93	139,322	15.33	0.0199	32.9
4	Single Wheel 2	>5,000,000	4.09	54,294	8.69	0.0000	10.6
5	Single Wheel 5	>5,000,000	8.13	32,086	8.70	0.0000	10.6
6	Single Wheel 10	>5,000,000	10.42	27,869	8.70	0.0000	10.6
7	Single Wheel 12.5	>5,000,000	8.03	58,672	8.70	0.0000	10.6
8	Single Wheel 15	>5,000,000	8.80	58,672	8.70	0.0000	10.6
9	Dual Wheel 20	>5,000,000	8.21	66,698	10.98	0.0000	16.9
10	Dual Wheel 30	>5,000,000	10.56	63,682	10.71	0.0000	16.1
					Total CDF =	0.0977	

Results Table 3. Flexible ACN at Indicated Gross Weight and Strength

No.	Aircraft Name	Gross Weight	% GW on Main Gear	Tire Pressure	ACN Thick	ACN on A(15)
1	Gulfstream-G-V	90,900	95.00	188.0	13.57	25.8
2	B737-100	100,000	91.90	157.0	12.49	21.9

3	B727-100C Alternate	120,000	95.30	165.0	14.06	27.7
4	Single Wheel 2	3,000	100.00	30.0	2.04	0.6
5	Single Wheel 5	7,000	100.00	45.0	4.06	2.3
6	Single Wheel 10	10,000	100.00	50.0	5.21	3.8
7	Single Wheel 12.5	12,500	95.00	50.0	4.02	2.3
8	Single Wheel 15	15,000	95.00	50.0	4.40	2.7
9	Dual Wheel 20	20,000	95.00	65.0	4.79	3.2
10	Dual Wheel 30	30,000	95.00	85.0	6.30	5.6

Results Table 4. Summary Output for Copy and Paste Into the Support Spread Sheet

```
Num,Plane,GWin,ACNin,ADout,6Dt,COV20yr,COVtoF,CDFt,GWcdf,PCNcdf,EVALt,SUBcode,KorCBR,PtoTC,FlexOrRig
1,Gulfstream-G-V,90900.000,25.8,30000,15.81,1.43044E+005,1.84191E+006,15.96,104354.362,31.0,17.4,A,15.00,10.00,F
2,B737-100,100000.000,21.9,4160,13.07,2.06797E+004,1.16682E+008,16.58,108454.589,24.2,17.4,A,15.00,10.00,F
3,B727-100C Alternate,120000.000,27.7,4160,14.71,2.18194E+004,1.09902E+006,15.93,139321.836,32.9,17.4,A,15.00,10.00,F
4,Single Wheel 2,3000.000,0.6,54750,2.37,1.27583E+005,1.01423E+304,4.09,54294.331,10.6,17.4,A,15.00,10.00,F
5,Single Wheel 5,7000.000,2.3,43800,4.72,1.27047E+005,1.01423E+304,8.13,32086.095,10.6,17.4,A,15.00,10.00,F
6,Single Wheel 10,10000.000,3.8,21900,5.88,7.19152E+004,1.01423E+304,10.42,27869.214,10.6,17.4,A,15.00,10.00,F
7,Single Wheel 12.5,12500.000,2.3,21900,4.47,5.55750E+004,1.01423E+304,8.03,58672.351,10.6,17.4,A,15.00,10.00,F
8,Single Wheel 15,15000.000,2.7,6570,4.58,1.82484E+004,1.56454E+293,8.80,58672.349,10.6,17.4,A,15.00,10.00,F
9,Dual Wheel 20,20000.000,3.2,6570,5.05,2.56990E+004,1.01423E+304,8.21,66697.867,16.9,17.4,A,15.00,10.00,F
10,Dual Wheel 30,30000.000,5.6,6570,6.69,2.72143E+004,4.80700E+200,10.56,63682.391,16.1,17.4,A,15.00,10.00,F
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PCN Results Flexible 1-28-2017 21;41;58

This file name = PCN Results Flexible 1-28-2017 21;41;58.txt
Library file name = C:\1 Florida Reports\SEF Airport\SEF RW 14-32.Ext
Units = English

Evaluation pavement type is flexible and design procedure is CBR.
Alpha Values are those approved by the ICAO in 2007.

CBR = 11.00 (Subgrade Category is B(10))
Evaluation pavement thickness = 9.00 in
Pass to Traffic Cycle (PtoTC) Ratio = 1.00
Maximum number of wheels per gear = 2
Maximum number of gears per aircraft = 2

No aircraft have 4 or more wheels per gear. The FAA recommends a reference section assuming 3 inches of HMA and 6 inches of crushed aggregate for equivalent thickness calculations.

Results Table 1. Input Traffic Data

No.	Aircraft Name	Gross Weight	Percent Gross Wt	Tire Press	Annual Deps	20-yr Coverages	6D Thick
1	Single Wheel 2	3,000	100.00	30.0	3,650	8,506	2.94
2	Single Wheel 5	7,000	100.00	45.0	2,920	8,470	5.54
3	Single Wheel 10	10,000	100.00	50.0	1,460	4,794	6.67
4	Single Wheel 12.5	12,500	95.00	50.0	1,460	3,705	5.04
5	Single Wheel 15	15,000	95.00	50.0	438	1,217	5.01
6	Dual Wheel 20	20,000	95.00	65.0	438	1,713	5.62
7	Dual Wheel 30	30,000	95.00	85.0	1,200	4,971	7.86

Results Table 2. PCN Values

No.	Aircraft Name	Critical Aircraft Total Equiv. Covs.	Thickness for Total Equiv. Covs.	Maximum Allowable Gross Weight	ACN Thick at Max. Allowable Gross Weight	CDF	PCN on B(10)
1	Single Wheel 2	>5,000,000	5.96	6,852	4.92	0.0000	2.1
2	Single Wheel 5	>5,000,000	8.67	7,542	6.39	0.0000	3.5
3	Single Wheel 10	148,560	8.25	11,894	8.45	0.0045	6.1
4	Single Wheel 12.5	>5,000,000	8.72	13,305	6.16	0.0000	3.2
5	Single Wheel 15	>5,000,000	8.58	16,521	6.86	0.0000	4.0
6	Dual Wheel 20	3,601,788	8.53	21,531	7.43	0.0001	4.7
7	Dual Wheel 30	5,139	7.88	36,545	10.20	0.1350	8.9
					Total CDF =	0.1396	

Results Table 3. Flexible ACN at Indicated Gross Weight and Strength

No.	Aircraft Name	Gross Weight	% GW on Main Gear	Tire Pressure	ACN Thick	ACN on B(10)
1	Single Wheel 2	3,000	100.00	30.0	3.26	0.9
2	Single Wheel 5	7,000	100.00	45.0	6.16	3.2
3	Single Wheel 10	10,000	100.00	50.0	7.75	5.1
4	Single Wheel 12.5	12,500	95.00	50.0	5.97	3.0
5	Single Wheel 15	15,000	95.00	50.0	6.54	3.7
6	Dual Wheel 20	20,000	95.00	65.0	7.06	4.3

7 Dual Wheel 30	30,000	95.00	85.0	8.94	6.9

Results Table 4. Summary Output for Copy and Paste Into the Support Spread Sheet

```
Num,Plane,GWin,ACNin,ADout,6Dt,COV20yr,COVtoF,CDFt,GWcdf,PCNcdf,EVALt,SUBcode,KorCBR,PtoTC,FlexOrRig
1,Single Wheel 2,3000.000,0.9,3650,2.94,8.50555E+003,1.01423E+304,5.96,6852.076,2.1,9.0,B,11.00,1.00,F
2,Single Wheel 5,7000.000,3.2,2920,5.54,8.46983E+003,6.19248E+009,8.67,7542.117,3.5,9.0,B,11.00,1.00,F
3,Single Wheel 10,10000.000,5.1,1460,6.67,4.79435E+003,1.06448E+006,8.25,11894.178,6.1,9.0,B,11.00,1.00,F
4,Single Wheel 12.5,12500.000,3.0,1460,5.04,3.70500E+003,5.13170E+010,8.72,13305.213,3.2,9.0,B,11.00,1.00,F
5,Single Wheel 15,15000.000,3.7,438,5.01,1.21656E+003,3.18759E+008,8.58,16520.810,4.0,9.0,B,11.00,1.00,F
6,Dual Wheel 20,20000.000,4.3,438,5.62,1.71326E+003,2.58079E+007,8.53,21530.901,4.7,9.0,B,11.00,1.00,F
7,Dual Wheel 30,30000.000,6.9,1200,7.86,4.97064E+003,3.68234E+004,7.88,36544.582,8.9,9.0,B,11.00,1.00,F
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PCN Results Flexible 1-28-2017 23;01;30

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Library file name = C:\1 Florida Reports\SEF Airport\SEF RW 14-32.Ext
Units = English

Evaluation pavement type is flexible and design procedure is CBR.
Alpha Values are those approved by the ICAO in 2007.

CBR = 11.03 (Subgrade Category is B(10))
Evaluation pavement thickness = 9.00 in
Pass to Traffic Cycle (PtoTC) Ratio = 1.00
Maximum number of wheels per gear = 2
Maximum number of gears per aircraft = 2

No aircraft have 4 or more wheels per gear. The FAA recommends a reference section assuming 3 inches of HMA and 6 inches of crushed aggregate for equivalent thickness calculations.

Results Table 1. Input Traffic Data

No.	Aircraft Name	Gross Weight	Percent Gross Wt	Tire Press	Annual Deps	20-yr Coverages	6D Thick
1	Single Wheel 2	3,000	100.00	30.0	3,650	8,506	2.94
2	Single Wheel 5	7,000	100.00	45.0	2,920	8,470	5.52
3	Single Wheel 10	10,000	100.00	50.0	1,460	4,794	6.66
4	Single Wheel 12.5	12,500	95.00	50.0	1,460	3,705	5.03
5	Single Wheel 15	15,000	95.00	50.0	438	1,217	4.99
6	Dual Wheel 20	20,000	95.00	65.0	438	1,713	5.61
7	Dual Wheel 30	30,000	95.00	85.0	1,200	4,971	7.85

Results Table 2. PCN Values

No.	Aircraft Name	Critical Aircraft Total Equiv. Covs.	Thickness for Total Equiv. Covs.	Maximum Allowable Gross Weight	ACN Thick at Max. Allowable Gross Weight	CDF	PCN on B(10)
1	Single Wheel 2	>5,000,000	5.94	6,881	4.93	0.0000	2.1
2	Single Wheel 5	>5,000,000	8.67	7,540	6.39	0.0000	3.5
3	Single Wheel 10	153,119	8.24	11,917	8.46	0.0042	6.1
4	Single Wheel 12.5	>5,000,000	8.72	13,310	6.16	0.0000	3.2
5	Single Wheel 15	>5,000,000	8.57	16,533	6.86	0.0000	4.0
6	Dual Wheel 20	3,879,417	8.53	21,559	7.44	0.0001	4.7
7	Dual Wheel 30	5,134	7.87	36,646	10.21	0.1308	8.9
					Total CDF =	0.1351	

Results Table 3. Flexible ACN at Indicated Gross Weight and Strength

No.	Aircraft Name	Gross Weight	% GW on Main Gear	Tire Pressure	ACN Thick	ACN on B(10)
1	Single Wheel 2	3,000	100.00	30.0	3.26	0.9
2	Single Wheel 5	7,000	100.00	45.0	6.16	3.2
3	Single Wheel 10	10,000	100.00	50.0	7.75	5.1
4	Single Wheel 12.5	12,500	95.00	50.0	5.97	3.0
5	Single Wheel 15	15,000	95.00	50.0	6.54	3.7
6	Dual Wheel 20	20,000	95.00	65.0	7.06	4.3
7	Dual Wheel 30	30,000	95.00	85.0	8.94	6.9

Results Table 4. Summary Output for Copy and Paste Into the Support Spread Sheet

```
Num,Plane,GWin,ACNin,ADout,6Dt,COV20yr,COVtoF,CDFt,GWcdf,PCNcdf,EVALt,SUBcode,KorCBR,PtoTC,FlexOrRig
1,Single Wheel 2,3000.000,0.9,3650,2.94,8.50555E+003,1.01423E+304,5.94,6880.947,2.1,9.0,B,11.03,1.00,F
2,Single Wheel 5,7000.000,3.2,2920,5.52,8.46983E+003,7.45804E+009,8.67,7539.966,3.5,9.0,B,11.03,1.00,F
3,Single Wheel 10,10000.000,5.1,1460,6.66,4.79435E+003,1.13365E+006,8.24,11917.395,6.1,9.0,B,11.03,1.00,F
4,Single Wheel 12.5,12500.000,3.0,1460,5.03,3.70500E+003,6.06292E+010,8.72,13310.187,3.2,9.0,B,11.03,1.00,F
5,Single Wheel 15,15000.000,3.7,438,4.99,1.21656E+003,3.56163E+008,8.57,16532.920,4.0,9.0,B,11.03,1.00,F
6,Dual Wheel 20,20000.000,4.3,438,5.61,1.71326E+003,2.87219E+007,8.53,21558.510,4.7,9.0,B,11.03,1.00,F
7,Dual Wheel 30,30000.000,6.9,1200,7.85,4.97064E+003,3.80092E+004,7.87,36645.544,8.9,9.0,B,11.03,1.00,F
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PCN Results Flexible 1-28-2017 23;01;48

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Library file name = C:\1 Florida Reports\SEF Airport\SEF RW 14-32.Ext
Units = English

Evaluation pavement type is flexible and design procedure is CBR.
Alpha Values are those approved by the ICAO in 2007.

CBR = 12.60 (Subgrade Category is B(10))
Evaluation pavement thickness = 9.00 in
Pass to Traffic Cycle (PtoTC) Ratio = 1.00
Maximum number of wheels per gear = 2
Maximum number of gears per aircraft = 2

No aircraft have 4 or more wheels per gear. The FAA recommends a reference section assuming 3 inches of HMA and 6 inches of crushed aggregate for equivalent thickness calculations.

Results Table 1. Input Traffic Data

No.	Aircraft Name	Gross Weight	Percent Gross Wt	Tire Press	Annual Deps	20-yr Coverages	6D Thick
1	Single Wheel 2	3,000	100.00	30.0	3,650	8,506	2.51
2	Single Wheel 5	7,000	100.00	45.0	2,920	8,470	4.85
3	Single Wheel 10	10,000	100.00	50.0	1,460	4,794	5.84
4	Single Wheel 12.5	12,500	95.00	50.0	1,460	3,705	4.41
5	Single Wheel 15	15,000	95.00	50.0	438	1,217	4.38
6	Dual Wheel 20	20,000	95.00	65.0	438	1,713	4.99
7	Dual Wheel 30	30,000	95.00	85.0	1,200	4,971	7.06

Results Table 2. PCN Values

No.	Aircraft Name	Critical Aircraft Total Equiv. Covs.	Thickness for Total Equiv. Covs.	Maximum Allowable Gross Weight	ACN Thick at Max. Allowable Gross Weight	CDF	PCN on B(10)
1	Single Wheel 2	>5,000,000	5.08	9,410	5.77	0.0000	2.8
2	Single Wheel 5	>5,000,000	8.71	7,476	6.36	0.0000	3.5
3	Single Wheel 10	801,508	7.79	13,361	8.95	0.0001	6.9
4	Single Wheel 12.5	>5,000,000	8.82	13,008	6.09	0.0000	3.2
5	Single Wheel 15	>5,000,000	8.48	16,877	6.94	0.0000	4.1
6	Dual Wheel 20	>5,000,000	8.59	21,188	7.35	0.0000	4.6
7	Dual Wheel 30	5,001	7.07	43,372	11.48	0.0113	11.3
					Total CDF =	0.0113	

Results Table 3. Flexible ACN at Indicated Gross Weight and Strength

No.	Aircraft Name	Gross Weight	% GW on Main Gear	Tire Pressure	ACN Thick	ACN on B(10)
1	Single Wheel 2	3,000	100.00	30.0	3.26	0.9
2	Single Wheel 5	7,000	100.00	45.0	6.16	3.2
3	Single Wheel 10	10,000	100.00	50.0	7.75	5.1
4	Single Wheel 12.5	12,500	95.00	50.0	5.97	3.0
5	Single Wheel 15	15,000	95.00	50.0	6.54	3.7
6	Dual Wheel 20	20,000	95.00	65.0	7.06	4.3

7 Dual Wheel 30	30,000	95.00	85.0	8.94	6.9

Results Table 4. Summary Output for Copy and Paste Into the Support Spread Sheet

```
Num,Plane,GWin,ACNin,ADout,6Dt,COV20yr,COVtoF,CDFt,GWcdf,PCNcdf,EVALt,SUBcode,KorCBR,PtoTC,FlexOrRig
1,Single Wheel 2,3000.000,0.9,3650,2.51,8.50555E+003,1.01423E+304,5.08,9409.782,2.8,9.0,B,12.60,1.00,F
2,Single Wheel 5,7000.000,3.2,2920,4.85,8.46983E+003,1.70674E+015,8.71,7476.111,3.5,9.0,B,12.60,1.00,F
3,Single Wheel 10,10000.000,5.1,1460,5.84,4.79435E+003,7.06741E+007,7.79,13361.476,6.9,9.0,B,12.60,1.00,F
4,Single Wheel 12.5,12500.000,3.0,1460,4.41,3.70500E+003,1.27648E+018,8.82,13008.340,3.2,9.0,B,12.60,1.00,F
5,Single Wheel 15,15000.000,3.7,438,4.38,1.21656E+003,1.45592E+012,8.48,16877.141,4.1,9.0,B,12.60,1.00,F
6,Dual Wheel 20,20000.000,4.3,438,4.99,1.71326E+003,5.18690E+011,8.59,21188.092,4.6,9.0,B,12.60,1.00,F
7,Dual Wheel 30,30000.000,6.9,1200,7.06,4.97064E+003,4.40931E+005,7.07,43371.756,11.3,9.0,B,12.60,1.00,F
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Appendix B. FAA Approval of Forecast of Aviation Activity

The forecast of aviation activity was submitted to the FAA for review and approval. The FAA issued approval of the forecast on March 1, 2018. **Figure A-1** is a copy of the FAA approval letter.

U.S. Department
of Transportation
**Federal Aviation
Administration**

ORLANDO AIRPORTS DISTRICT OFFICE
8427 South Park Circle, Suite 524
Orlando, Florida 32819
Phone: (407) 487-7220 Fax: (407) 487-7135

March 1, 2018

Mr. Mike Willingham
Airport Manager
Sebring Airport Authority
128 Authority Lane
Sebring, Florida 33870

Dear Mr. Willingham:

RE: Sebring Regional Airport (SEF)
Approval of Forecast of Aviation Activity for Airport Master Plan Update

This letter responds to your submittal of revised Aviation Activity Forecasts for the Sebring Regional Airport dated March 2018. The based aircraft forecast and operations forecast shown in Table 3-20 of the report are approved to be used in your on-going master planning efforts.

If you have any questions, please feel free to contact me at (407) 487-7231.

Sincerely,

Marisol C. Elliott

Marisol C. Elliott
Community Planner

cc: Wendy Sands, FDOT/1
Jonathan Hand, Atkins N.A.

Appendix C. 2013 Runway Extension Justification Report Update

Runway Extension Justification Report Update

Runway 01-19

Sebring Regional Airport

December 2013

U.S. Department
of Transportation
**Federal Aviation
Administration**

Airports District Office
5950 Hazeltine National Drive, Suite 400
Orlando, Florida 32822
407-812-6331

January 9, 2014

Mr. Mike Willingham
Executive Director
Sebring Regional Airport
128 Authority Lane
Sebring Florida 33870

RE: Sebring Regional Airport; Sebring, FL
Runway Extension Justification Report
Runway 01-19

Dear Mr. Willingham:

I am writing in response to the December 2013 update of the Runway Extension Justification Report for Runway 01-19 at Sebring Regional Airport.

The Federal Aviation Administration (FAA) has reviewed the report and based on the information provided have determined that the runway extension is justified. Therefore, FAA concurs in the extension of Runway 01-19 from 5,224 feet to 7,000 feet.

If you have any questions on need any additional information feel free to contact me directly at 407-812-6331, extension 123.

Sincerely,

Miguel A. Martinez
Program Manager

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Tables

Figures

Executive Summary

Sebring Regional Airport (SEF) has experienced an increased need from existing and potential users for a longer primary runway. The reasons for the increased need range from operational issues to safety issues. At the current runway length, high performance corporate and regional jet aircraft may be (and historically have been) subject to payload limitations or have opted not to use the Airport at all due to limited takeoff field lengths, resulting in the loss of potential economic impact.

An analysis of all surveys and letters received during the study survey period identified an additional 5 new operators and an additional 354 operations by jet and other non-jet aircraft if the runway was extended. Approximately 84 percent of respondents indicated that the current runway length limits their existing operations. All survey responses and letters received are included in Appendices B and C. Key operator responses include:

- Fountain Head Sales & Leasing Inc.
    - Typical Destination: Modesto CA or Gander Newfoundland
    - Typically stop in Tampa or Orlando to take on fuel for the trip
    - Letter from operator in Appendix B
- Schafer Transport Inc.
    - Typical Destination: Europe
    - Aircraft are forced to stop in Atlanta (ATL), Miami (MIA) or Orlando (MCO) to unload Cargo to truck SEF.
    - Letter from operator in Appendix B
- Aeroservicos Azteca SA-CU
    - Typical Destination: Monterey, Mexico
    - Takes a fuel payload reduction due Runway length
    - Stop in St. Petersburg for Fuel
- Downs Foods
    - “Short Runway Limits Fuel load, therefore reducing Range”
    - No specific fuel stop listed for typical stage lengths
- European Aviation Air Charter
    - Typical Destination : Bournemouth, UK
    - UK destinations not possible nonstop – No specific fuel stop listed
- Newman Racing
    - Typical Destination : White Plaines NY
    - “Warm Weather Reduces our allowable fuel load to the point where making our destination [HPN] is a problem”
    - No specific fuel stop listed
- MVA Aviation
    - Typical Destination: Europe
    - Must stop in Opa Locka for fuel
- J.P. Kotts & Co
    - Typical Destination: Houston (HOU)
    - Notes a reduced Stage Length due to Runway length available, does not mention a specific stop point in survey

Based on the aircraft user surveys, the majority of SEF’s surveyed fleet mix is over 12,500 pounds but less than 60,000 pounds. In order to accommodate 75% of the surveyed fleet at 90% useful load, a runway length of 6,700 feet would be necessary. This runway length is based on a dry, zero effective gradient runway scenario. However, Sebring airport receives on average 52.5 inches of rainfall per year, and many survey respondents stated that their operational abilities at SEF are affected by runway surfaces being contaminated by rainfall. Therefore adjustments have been made to compensate for runway contaminates.

At this time it is recommended that a **1,776** foot extension be added to Runway 01-19 to allow for **7,000** feet of usable pavement. The 7,000 feet of useable pavement will accommodate the existing as well as future operations at the Airport. By extending the existing runway length, SEF can reduce or eliminate load limitations experienced by current users, accommodate the forecast aircraft in the most recent AMPU, and market to larger aircraft users in the area that are currently constrained by the existing runway configuration.

1. BACKGROUND

In April of 2007, the *Runway Extension Justification Report for Runway 01-19 at Sebring Regional Airport* was prepared by Atkins (formerly PBSJ). In May 2008, a memorandum summarized findings of new survey data which provided additional operational information to supplement the May 2007 report. The project was approved by the Federal Aviation Administration's (FAA) Orlando Airports District Office which then triggered the development of the *Environmental Assessment (EA) for the Extension of Runway 01-19* in 2009 by URS.

The purpose of this report is to provide updated information on the need and potential users in support of extending Runway 01-19 at Sebring Regional Airport (SEF). Some of the information provided in this document can be found in the prior justification study but is repeated in this document in order to serve as a standalone update.

1.1. General Airport Information

SEF is located within the City of Sebring, Florida, in Highlands County. Sebring benefits from a relatively moderate climate. The mean minimum temperature is 62.5 degrees Fahrenheit (F) and the mean maximum temperature is 83.1 degrees F. On average, the hottest month is August, ranging from a median high temperature of 92.6 degrees F to a median low temperature of 74.1 degrees F. The coolest month is typically December, with a mean high temperature of 71.7 degrees F and a median low temperature of 51.3 degrees F. Average monthly precipitation for the area is 4.6 inches (in) and there are no recorded snowfalls.

SEF is currently designated as a general aviation (GA) airport primarily serving recreational flyers, corporate activity generally associated with the Sebring Raceway and Industrial Park, medical emergency service helicopter operations (AeroMed II), and military operations associated with a Department of Defense (DOD) refueling contract.

In 2012, SEF had 103,087 annual operations as reported in FAA's Terminal Area Forecast dated January 2013. The SEF airfield consists of two active paved runways and one closed runway, as shown in **Figure 1.** Runway 01-19, the primary runway, is situated in a north-south orientation. Runway 14-32 is used for crosswind operations and is situated in a northwest-southeast orientation. Neither runway is certified for air carrier use. Runway 04-22 is closed and partially demolished.

Runway 01-19 measures approximately 5,224 feet long and 100 feet wide and has medium intensity runway lights. Runway 14-32 is unlit and measures approximately 5,000 feet long and 100 feet wide. There is no air traffic control tower currently located at the Airport. There are four non precision GPS approaches at the Airport which provide approach guidance in ceilings as low as 375 feet, and visibility as low as 1 statute mile.

2. PROJECT JUSTIFICATION

SEF has experienced an increased need from existing and potential users for a longer runway at the Airport. The reasons for the increased need range from operational issues to safety issues. Based upon information obtained from the Sebring Airport Authority (SAA), SEF can accommodate the majority of GA aircraft on its current runway length with the exception of high performance corporate and regional jet aircraft. At the current runway length, these aircraft may be (and historically have been) subject to payload limitations or have opted not to use the Airport at all due to limited takeoff field lengths.

In addition, SEF potential economic impact has been lost due to the existing length of the runway. AVOCET wanted to relocate from Opa-Locka Airport and considered SEF as a base for their maintenance, repair, and overhaul (MRO) operation. In 2009, AVOCET brought 150 new jobs to the Orlando Sanford International Airport. A main reason for this decision was the length of runway at SEF. AVOCET expanded its operation with the opening of a 55,510 square foot hangar which again provides for new jobs and economic growth to the local area. This is a prime example of a missed opportunity for SEF.

NASCAR is now the owner of the Sebring International Raceway. The Airport can capitalize on new upcoming events that could be held at SEF if the runway was extended. In addition, the Indy Racing League has been contacted regarding new events and operational requirements. NASCAR has a specific fleet mix that can easily operate at Daytona Beach International given the provided lengths of runways. The smaller events at Daytona provide for an estimated 30 percent over normal operations. These events tend to attract the larger corporate jet aircraft for racing teams and spectators.

ATKINS

Seabring Reigonal Airport
Runway Extension
Justification Report

EXISTING AIRPORT LAYOUT

FIGURE 1

Plotted By: 24680
J:\AVServ\SEF - Sebring Regional Airport\SEF_Misc\RWY Extension Review - December 2011\CAD\Report_Figs.dwg Oct21,2013 - 9:08am

Currently, the runway extension project is shown on the FAA approved ALP prepared in 2004. The ALP shows extending the existing 5,224 feet long by 100 feet wide runway to 7,000 feet to meet the requirements of an Approach Category D, Airplane Design Group (ADG) IV runway.

2.1. Survey Information

Information gathered in the Runway 01-19 extension justification survey included the name of the company, company address, contact person, address, type of aircraft operated, and aircraft N number. Information also included the number of annual operations each respondent currently conducts, typical stage length, whether the current length (5,224 feet) restricted their current operations and how much additional runway length was needed to accommodate their aircraft and operations. All respondents surveyed identified whether or not they fly into the airport at this time and were asked to give an estimate as to how many annual operations they would conduct if Runway 01-19 were extended. A copy of the survey form appears in **Appendix A**. This same survey form was used in the 2007 Justification Study and Atkins re-verified approximately 75 percent of past respondent information.

Additionally, the Airport received several letters from transient aircraft operators and business owners that discussed their individual need for an extension to Runway 01-19. These letters can be found in **Appendix B**.

SEF has met with NASCAR officials and have also prepared letters for the Indy Racing League to respond to, and this information will also be found in Appendix B.

2.2. Survey Findings

An analysis of all surveys and letters received identified an additional 5 new operators and an additional 354 operations by jet and other non-jet aircraft if the runway was extended. It is important to note that the surveys reviewed and summarized in this calculation were obtained through March, 2013 and additional surveys are still being returned to the Airport as of this writing. Approximately 84 percent of respondents indicated that the current runway length limits their existing operations. The newly completed surveys received and the re-verified surveys of March 2007 can be found in **Appendix C.**

The responding aircraft operators were enthusiastic about the possibility of lengthening the runway at SEF. They currently do business, or plan to do business in the area on a regular basis. Some of the companies surveyed indicated that they could not use the airport simply because the runway could not accommodate their jet aircraft. Several respondents indicated that they could foresee initiating or increasing flights into the Airport if the runway was extended. It is important to note that some of the respondents indicated that they felt a longer runway would be needed in order for their operation to conduct safe and efficient operations at the Airport.

Many respondents indicated that they could not fly to their planned destinations due to load penalties because the current runway length limits the amount of fuel they are able to take on. As a result, some respondents indicated they may base their aircraft at other airports to avoid this increased operating cost and reduced convenience.

Respondents mentioned that the existing length restricts flying Part 135 without 80 percent exemption. Future charter operations also could not be started with larger aircraft given the length at SEF. Limiting Part 135 operations is a negative impact on SEF.

A safe, jet-capable runway will have a positive economic impact on the community by allowing current and additional corporate and recreational aircraft users to fly directly between Sebring and desired destinations with lesser penalties for fuel or loads. In addition, an extension to Runway 01-19 will allow the SAA to expand facilities and continue to aggressively market moderate to large aircraft such as the Global Express 5000 and Boeing 727.

2.3. User Survey Tabulation

The survey results have been tabulated and analyzed by Atkins. **Table 1** provides an overview of aircraft respondents by operator, type of aircraft, current operations, and total annual operations with runway extension.

Table 1. Sebring User Survey Summary of Results

Aircraft Owner/ Operator	Aircraft Type	Aircraft N Number	ARC	Existing RW Configuration Limits Ops	Total Annual Ops	Additional Annual Ops with Extension	Total Annual Ops. w/ Extension
Alan Jay Aviation	BE 400	N42AJ	B-I	Yes	230	0	230
Aeroservicios Azteca	Hawker 800	XA-UEH**	C-II	Yes	2	0	2
Air Trek Inc.	Cessna 500	N633AT,N511AT N492AT,N639AT	B-I	Yes	30	15	45
Bruce White	Citation Encore 560	Not Reported	B-II	Yes			
Catalina Aerospace	Lear 31	N127VL	B-I	No	10	0	10
	C340A	N30HB	B-I	Yes	5	0	5
CET	Citation Encore - Bravo	N908AS, N144HL	B-II	Yes	6	0	6
Conanicut Aviation	Falcon 900 – Hawker 700	N920DB, N209TS	C-II	No	6	0	6
Carlisle Air	Westwind	N140VJ	B-I	Yes	4	0	4
Dean Coastal LLC	Hawker	N999CY, N82CA	D-II	Yes	30	20	50
Downs Food	BE 400	N717DD	B-I	Yes	0	0	0
EEI	Citation V	N999EA	B-II	Yes	2	0	2
European Aviation Air Charter	Boeing 737-200*	G-CEAC**	C-III	Yes	20	20	40
Executive Jet Management	Falcon 2000	N149VB	B-II	Yes	0	0	0
Fair Wind Air Charter	Lear 55	N155BC	C-I	Yes	20	0	20
Flight Options	Beech Craft 400	N795TA	B-I	Yes	20	20	40
	HS-125	Not Reported	C-I	Yes	10	0	10
	Citation X	Not Reported	C-II	Yes	50	50	100
	EMB - 145	Not Reported					
	CE- 10	Not Reported					
	CE- 750	Not Reported					
	Hawker 800XP	Not Reported	B-I	Yes	0	0	0
Fountainhead Sales	Astra jet	N63US	C-II	Yes	12	0	12
Gary Jet Center	Cessna Conquest	N54G	B-II	No	250	0	250
Hendrick Motorsports	Saab 2000	Not Reported	C-III	Yes	0	5	5
Jet Choice	Falcon DA-10 Falcon 900	N710JC N790JC	B-II C-II	Yes Yes	4	3	7
JDI	Falcon 10	Not Reported	B-II	Yes	6	0	6
Jet Corp	Lear Jet 60	N658KS	C-I	Yes	0	0	0
Jet Direct	Lear Jet 31, 35, 55, 60	Not Reported	B-I, C-I	Yes	20	0	20
J.P. Knotts & Co.	Gulfstream - 450	N1JK	D-II	Yes	10	20	30
Kalitla Charters	Lear Jet 25	Not Reported	C-I	No	4	0	4
Lanmar Aviation	Citation 650	N650TS, N92RP, N3RP, N265	B-II	Yes	8	4	12
Lyon Aviation	Hawker 800	N70NE	C-II	Yes	1	0	1
MVA Aviation LTD	Global Express	VPBVG**	B-III	Yes	5	4	9
NetJets Aviation	All Cessnas	Not Reported	B-II	Yes	50	0	50
	BE-400A	Not Reported	B-I	Yes	20	0	20
Newman Racing	Sabre 65	N499NH	B-II	Yes	6	2	8
Peterson Holdings LLC	Citation CJ3	N525MP	B-II	No	10	0	10
PCI - LLC	Citation Jet	Not Reported	B-II	Yes	2	0	2
Penske Jet	Citation 650	N504RP	B-II	Yes	10	0	10
Presidential Aviation	G-IV	N842PA	D-II	Yes	10	5	15
Robertson Racing LLC	Cessna Citation	N53BB	B-I	Yes	24	0	24
Ruby Tuesday Inc.	Lear Jet 31	N154RT	B-I	Yes	1	0	1
Tavero Jet Charter	HS-800 A	N196MG	C-II	Yes	3	0	3
Tuckaire Inc.	Challenger 300	N42GJ	B-II	Yes	10	0	10
TK Stanley Inc.	Pilatus PC 12	Not Reported	A-II	No	0	0	0
Transportes Aereo Sierra Madre	Hawker Siddeley 125	XACHA**	C-I	Yes	2	8	10
USA Jet Airlines	Diamond DA 20	N877JG	A-II	Yes	10	20	30
TOTALS : REVALIDATED 2012, ORIGINAL SURVEY (2007)					**923**	**196**	**1119**

NEW SURVEY RESULTS							
Penske Jet Inc.	CRJ - 200	N500PR	B-III	Yes	20	0	20
MacNeil Automotive	Citation	Not Reported			0	8	8
Scuderiia Corsa Team	Falcon 50	Not Reported	B-II	Yes	0	4	4
Cape Clear	G-4	N22FRE	D-II	No	2	0	2
Spirit Jets LLC	LR-60	N551ST	C-I	Yes	3	0	3
Fant Aircraft Enterprises	LR-45	N22AX	C-I	No	4	0	4
Balla Air	Falcon 7X	N777BA	B-II	Yes	25	0	25
Executive Air Share	Embraer Phenom - 300	394AS	C-II	Yes	4	6	10
CG Aviation	LR35	N500CG	D-I	Yes	16	13	29
	C750		C-II	Yes	0	3	3
Schaefer Trans. Inc	Boeing 727	Not Reported	C-III	Yes	0	4	4
GAR Aviation, LTD	CL-600	N74GR	C-II	Yes	15	35	50
	C-501	N74HR	C-II	Yes	0	0	0
Flexjet	LR-40	N623FX	C-I	Yes	10	10	20
New Jet International	Global 5000	Not Reported	C-III	Yes	0	104	104
Schaefer Trans. Inc	Boeing 727	Not Reported	C-III	Yes	0	20	20
Volo Aviation	Gulfstream	Not Reported	N/R	Yes	0	24	24
Panorama Flight Service	Bombardier Challenger	Not Reported	N/R	Yes	0	24	24
Great Atlantic Aeroplane Corp.	Cessna 310	N6980A	B-I	No	200	0	200
			TOTAL NEW SURVEY		299	255	554
			GRAND TOTAL		1,222	451	1,673

** International aircraft / operator.

Source: Sebring Airport Management and Runway 19-36 Extension Survey, 2007 (Updated 2013).

3. RUNWAY EXTENSION ANALYSIS

3.1. Guidance

FAA Advisory Circular (AC) 150/5325-4B, *Runway Length Requirements for Airport Design*, states, *"Airport authorities working with airport designers and planners should validate future runway demand by identifying the critical design airplanes. In particular, it is recommended that the evaluation process assess and verify the airport's ultimate development plan for realistic changes that could result in future operational limitations to customers. In summary, the goal is to construct an available runway length for new runways or extensions to existing runways that is suitable for the forecasted critical design airplanes."* Federally funded projects require that critical design airplanes have at least 500 or more annual itinerant operations at the airport for an individual airplane or a family grouping of airplanes. The FAA states that under certain circumstances adjustments may be made to the 500 annual operations requirement.

In addition to the above mentioned runway lengthening criteria, AC 150/5325-4B paragraph 306 states, *"General Aviation (GA) airports have witnessed an increase use of their primary runway by scheduled airline service and privately owned business jets. Over the years business jets have proved themselves to be a tremendous asset to corporations by satisfying their executive needs for flexibility in scheduling, speed, and privacy. In response to these types of needs, GA airports that receive regular usage by large airplanes over 12,500 pounds maximum takeoff weight (MTOW), in addition to business jets, should provide a runway length comparable to non-GA airports. That is, the extension of an existing runway at a GA airport can be justified by the need to accommodate heavier airplanes on a frequent basis."*

In order to quantify and qualify the need for an extension to Runway 01-19, surveys were given to transient and based airport users which requested each respondent's type of usage and overall operational requirements. Letters were submitted by existing and potential airport users describing their runway needs. In addition, facility requirements from the previous AMPU were taken into account and existing design criteria was re-evaluated to determine if the current runway length is adequate for existing and forecast aircraft that may utilize the airport.

3.2. Fleet Mix and Critical Aircraft

Table 2 lists the aircraft fleet mix obtained in the Runway Extension Justification Survey by aircraft type, Airport Reference Code (ARC), Maximum Takeoff Weight (MTOW), and maximum range. The estimated annual operations by Airport Approach Category (ACC) and Airport Design Group (ADG) are presented in **Table 3**.

The surveys are compiled by ARC in **Table 3**. Using this analysis, only the ARC-BI yields more than 500 operations. Therefore, the predominant surveyed ARC for SEF is that of a B-I. However, existing ops by larger aircraft (B-II, B-III, C-II, C-III and D-II) that require additional runway length are steadily growing at SEF. Operations by these types of aircraft currently exceed 650 annual operations based on the surveys received to date and are increasing. Therefore, in accordance with AC 150/5325-4B, a family grouping of aircraft was chosen to obtain the existing ADG. Further, additional operations by these types of aircraft have been committed by existing and potential users if the proposed runway extension is completed. Being that SEF has shown an increasing number of operations by aircraft larger than 60,000 lbs on a frequent basis, it is suggested at this time that Runway 01-19 be extended to meet the demands of those types of aircraft.

As stated in AC 150-5325-4B, the evaluation process should assess the airport's ultimate development plan for realistic changes that could result in future operational limitations to customers. Consideration must be given to current operational constraints on existing users, anticipated and committed demand by aircraft that require additional runway length and the estimated future growth of such aircraft types. In addition, the AC states that, "the extension of an existing runway at a GA airport can be justified by the need to accommodate heavier airplanes on a frequent basis."

3.3. Runway Length

The proposed runway length for this project is based on criteria established in FAA AC 150/5325-4B, *Runway Length Requirements for Airport Design*.

AC 150/5325-4B uses a five-step procedure to determine recommended runway lengths for a selected list of critical design airplanes. The five steps (somewhat abbreviated) are listed below.

1. Identify the list of critical design airplanes that will make regular use of the proposed runway for an established planning period of at least five years. For federally funded projects, the definition of the term "*substantial use"* quantifies the term *"regular use".*
2. Identify the airplanes that will require the longest runway lengths at MTOW. This will be used to determine the method for establishing the recommended runway length. When the MTOW of listed airplanes is over 60,000 lbs., the recommended runway length is determined according to individual airplanes.
3. Use Table 1-1 in the AC (**Table 4** in this document) and the airplanes identified in step #2 to determine the method that will be used for establishing the recommended runway length. MTOW is used because of the significant role played by airplane operating weights in determining runway lengths.
4. Select the recommended runway length from among the various runway lengths generated by step #3 per the process identified in chapters 2, 3, or 4 of the AC, as applicable.
5. Apply any necessary adjustment to the obtained runway length, when instructed by the applicable chapter of the AC, to the runway length generated by step #4 to obtain a final recommended runway length. Adjustments to the length may be necessary for runways with non-zero effective gradients, excessive temperatures, wind conditions, airport elevation, etc.

Table 2. Surveyed Aircraft Fleet Mix

Aircraft	ARC	MTOW	Aircraft Type	Maximum Range (NM)
Astra jet	C-II	33,450	Jet	2,750
BE 400	B-I	16,100	Jet	1,900
Boeing 727	C-III	170,000	Jet	2,300
Boeing 737-200*	C-III	115,500	Jet	2,255
C340A	B-I	5,990	Turboprop	1,377
Cessna 310	B-I	5,500	Turboprop	869
Cessna 500 - Westwind	B-I	23,500	Jet	2,770
Cessna Citation	B-I	15,100	Jet	2,000
Cessna Conquest	B-II	9,856	Turboprop	1,291
Challenger 300	B-II	38,850	Jet	3,675
Citation Encore 560	B-II	16,830	Jet	1,778
Citation 650	B-II	22,000	Jet	2,346
Citation CJ3	B-II	22,000	Jet	2,346
Citation V	B-II	15,900	Jet	1,920
Citation X	C-II	36,100	Jet	3,070
Challenger 600	C-II	19,550	Jet	6,236
CRJ - 200	B-III	53,000	Jet	2,307
Diamond Katana DA 20	A-II	1,754	Single Engine	410
EMB - 145	C-II	48,501	Jet	1550
Embraer Phenom - 300	C-II	17,529	Jet	2,268
Falcon 2000	B-II	41,000	Jet	3,250
Falcon 50	B-II	40,780	Jet	3,500
Falcon 7X	B-II	69,000	Jet	6,847
Falcon 900	C-II	45,500	Jet	3,900
Falcon 10	B-II	18,740	Jet	1,920
Gulfstream - 450	D-II	74,600	Jet	4,450
Gulfstream IV	D-II	73,900	Jet	4,350
Global 5000	C-III	92,750	Jet	5,000
Gulfstream - 450	D-II	74,600	Jet	4,450
Hawker - 700	D-II	25,500	Jet	1,960
Hawker 800	C-II	28,000	Jet	2,800
Hawker Siddeley 125	C-I	25,000	Jet	1,650
Lear Jet 31	B-I	15,500	Jet	1,455
Lear Jet 55	C-I	21,100	Jet	2,582
Lear Jet 25	C-I	15,500	Jet	1,770
Lear Jet 31	B-I	15,500	Jet	1,455
Lear Jet 35	D-I	18,300	Jet	2,196
Lear Jet 60	C-I	23,500	Jet	2,398
Lear Jet 55	C-I	21,100	Jet	2,582
Lear Jet 40	C-I	21,000	Jet	1,692
Lear Jet 45	C-I	20,200	Jet	1,968
Pilatus PC 12	A-II	10,450	Turboprop	1,600
Saab 2000	C-III	48,500	Turboprop	1,425
Sabre 65	B-II	24,000	Jet	2,890

Source: Sebring User Surveys, 2012-2013.

Table 3. Surveyed Annual Operations by Fleet Mix

ARC	Existing	Future	Total
A-II	10	20	30
B-I	544	35	579
B-II	385	10	395
Unspecified Model (B-II or Larger)	0	56	56
B-III	25	4	29
C-I	73	18	91
C-II	97	97	194
C-III	20	153	173
D-I	16	13	29
D-II	52	45	97
Total:	1222	451	1673

Source: Sebring User Surveys, 2012-2013.

Table 4. Airplane Weight Categorization for Runway Length Requirements

<table>
<tr><th colspan="3">Airplane Weight Category</th><th rowspan="2">Design Approach</th><th rowspan="2">Location of Design Guidelines</th></tr>
<tr><th colspan="3">Maximum Certificated Takeoff Weight (MTOW)</th></tr>
<tr><td rowspan="4">12,500 pounds (5,670 kg) or less</td><td colspan="2">Approach Speeds less than 30 knots</td><td>Family grouping of small airplanes</td><td>Chapter 2; Paragraph 203</td></tr>
<tr><td colspan="2">Approach Speeds of at least 30 knots but less than 50 knots</td><td>Family grouping of small airplanes</td><td>Chapter 2; Paragraph 204</td></tr>
<tr><td rowspan="2">Approach Speeds of 50 knots or more</td><td>With Less than 10 Passengers</td><td>Family grouping of small airplanes</td><td>Chapter 2; Paragraph 205 Figure 2-1</td></tr>
<tr><td>With 10 or more passengers</td><td>Family grouping of small airplanes</td><td>Chapter 2; Paragraph 205 Figure 2-2</td></tr>
<tr><td colspan="3">Over 12,500 pounds (5, 670 kg) but less than 60,000 pounds (27,200 kg)</td><td>Family grouping of large airplanes</td><td>Chapter 3; Figures 3-1 or 3-2 1 and Tables 3-1 or 3-2</td></tr>
<tr><td colspan="3">60,000 pounds (27,200 kg) or more or Regional Jets 2</td><td>Individual large airplane</td><td>Chapter 4; Airplane Manufacturer Websites (Appendix 1)</td></tr>
<tr><td colspan="5">Note 1: When the design airplane's APM show a longer runway length than what is shown in Figure 3-2, use the airplane manufacturer's APM. However, users of an APM are to adhere to the design guidelines found in Chapter 4.</td></tr>
<tr><td colspan="5">Note 2: All regional jets regardless of their MTOW are assigned to the 60,000 pounds (27,200 kg) or more weight category.</td></tr>
</table>

Source: FAA AC 150/5325-4B Runway Length Requirements for Airport Design.

Based on the aircraft user surveys, as shown in **Tables 1 & 2**, the majority of SEF's surveyed fleet mix is over 12,500 pounds but less than 60,000 pounds. Therefore, the runway design curves found in Chapter 3 of AC 150/5325-4B were used to calculate the extension to the existing Runway 01-19. The design procedure for this aircraft weight category requires the following information: airport elevation above mean sea level (MSL), mean daily maximum temperature of the hottest month at the airport, and the critical design airplanes under evaluation with their respective useful loads. Once this information is obtained is it plotted on a set of performance curves developed from FAA-approved airplane flight manuals in accordance with the provisions of 14 Code of Federal Regulations, Part 25, *Airworthiness Standards: Transport Category Airplanes,* and Part 91, *General Operating and Flight Rules*.

The elevation at SEF is 63-feet above MSL. The mean daily maximum temperature of the hottest month at the airport is 92.6°. The predominate design group, as previously noted, is currently a B-II. **Table 2** lists typical aircraft that make up this family of aircraft. However, due to the increasing trend in heavier aircraft utilizing SEF on a regular basis consideration must also be given to these types of aircraft as well. Examples of the heavier aircraft using SEF on a regular basis include the G-IV, Cessna Citation X, Global Express 5000 and Lear 55.

By plotting all the above information on the FAA performance curves in AC 150/5325-4B, the following Runway Lengths were obtained. In order to accommodate 75% of SEF's B-II fleet at 60% useful load a runway length of 4,700 feet is needed, as shown in **Figure 2**. In order to accommodate 75 % of the surveyed fleet at 90% useful load a runway length of **6,700** feet would be necessary. **Figure 2** depicts the 6,700 foot runway requirement. For SEF to accommodate 100% of the fleet at 60% a 5,600 foot runway would be needed while it would take a runway length of 8,600 feet to accommodate 100% of the fleet at 90% useful load. **Figure 3** depicts the 8,600 foot runway requirement Red lines are examples presented by and based on FAA examples while blue lines represent runway lengths based on the conditions specific to SEF as presented in this section.

Figure 2. 75 Percent of Fleet at 60 or 90 Percent Useful Load

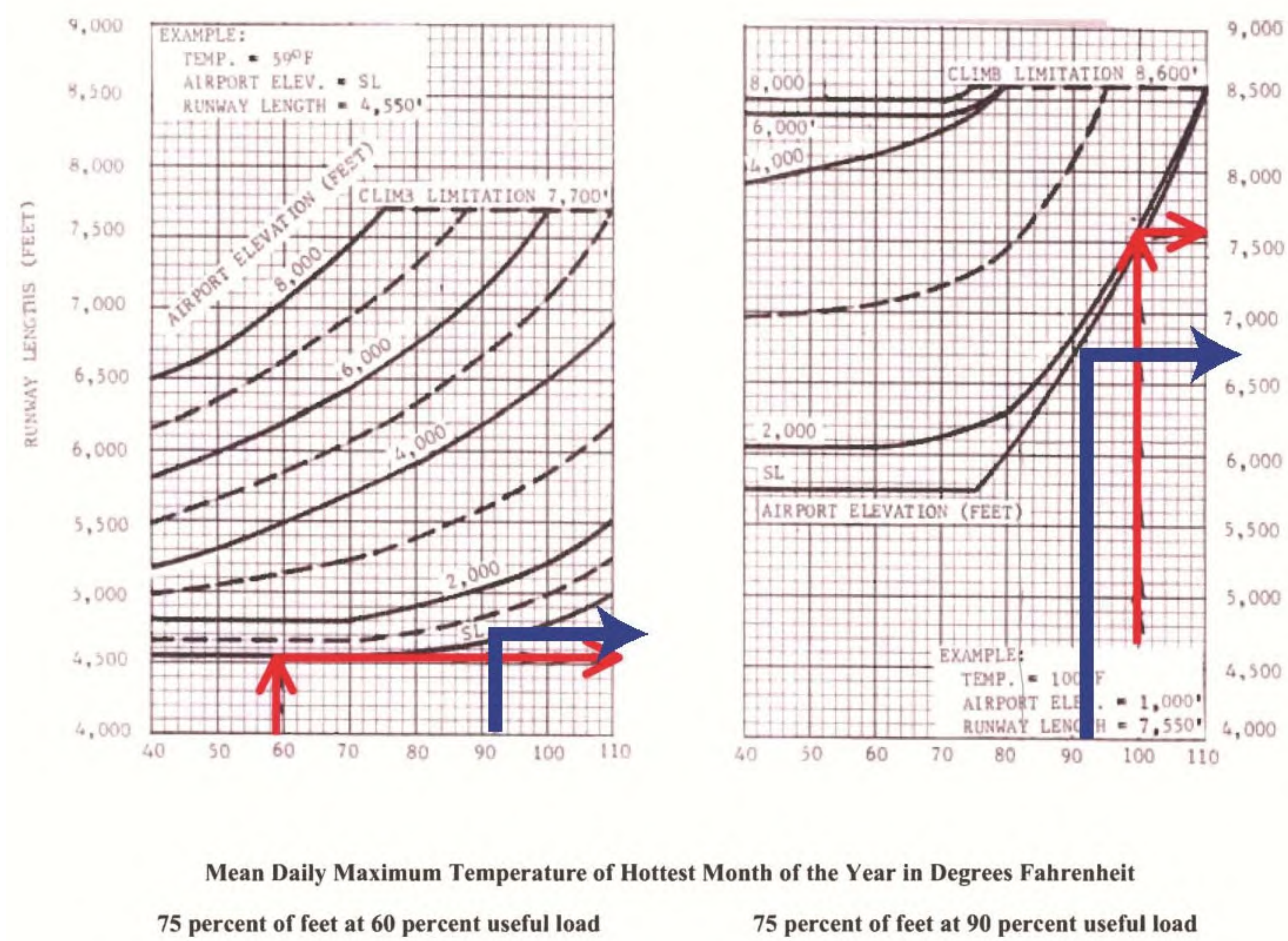
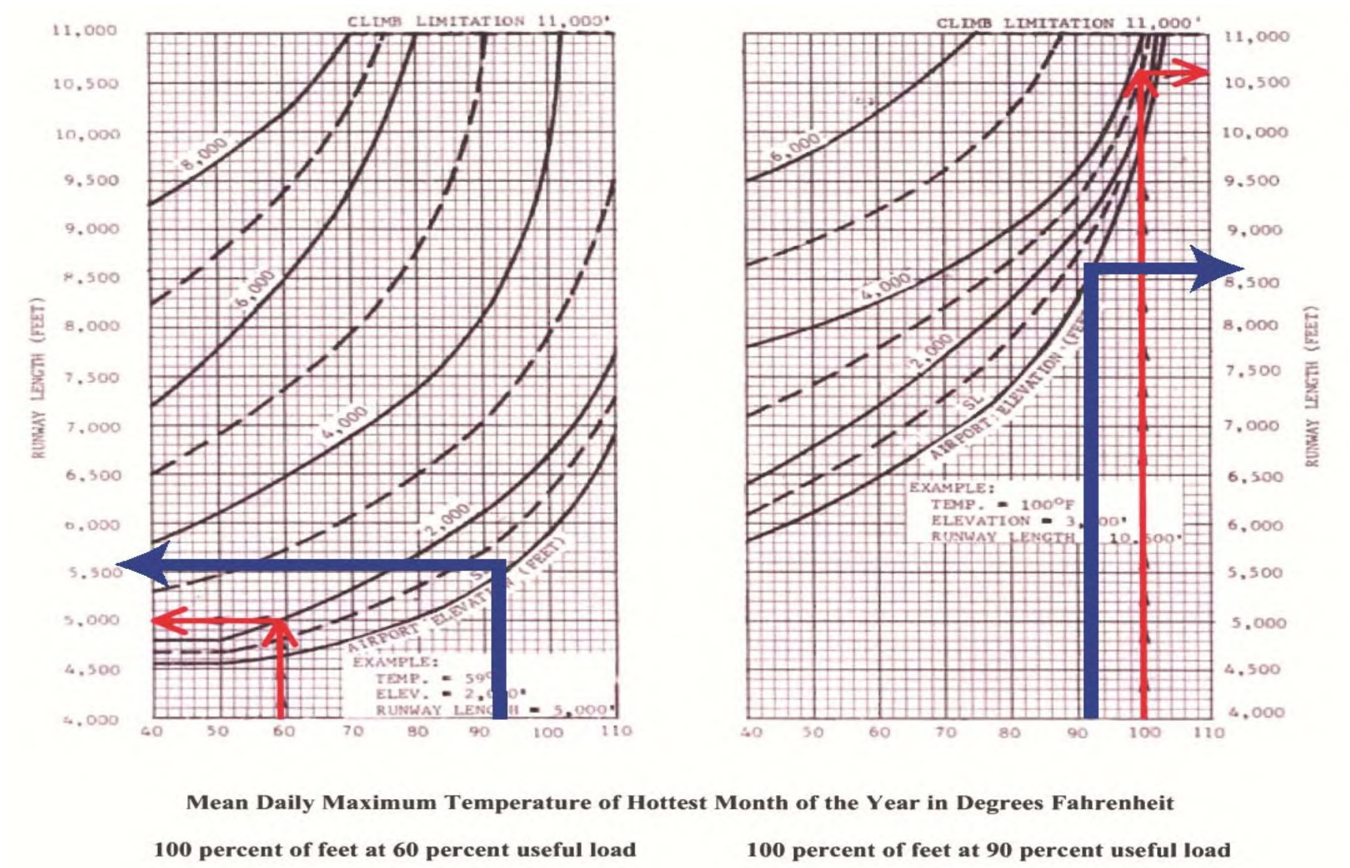


Figure 3. 100 Percent of Fleet at 60 or 90 Percent Useful Load

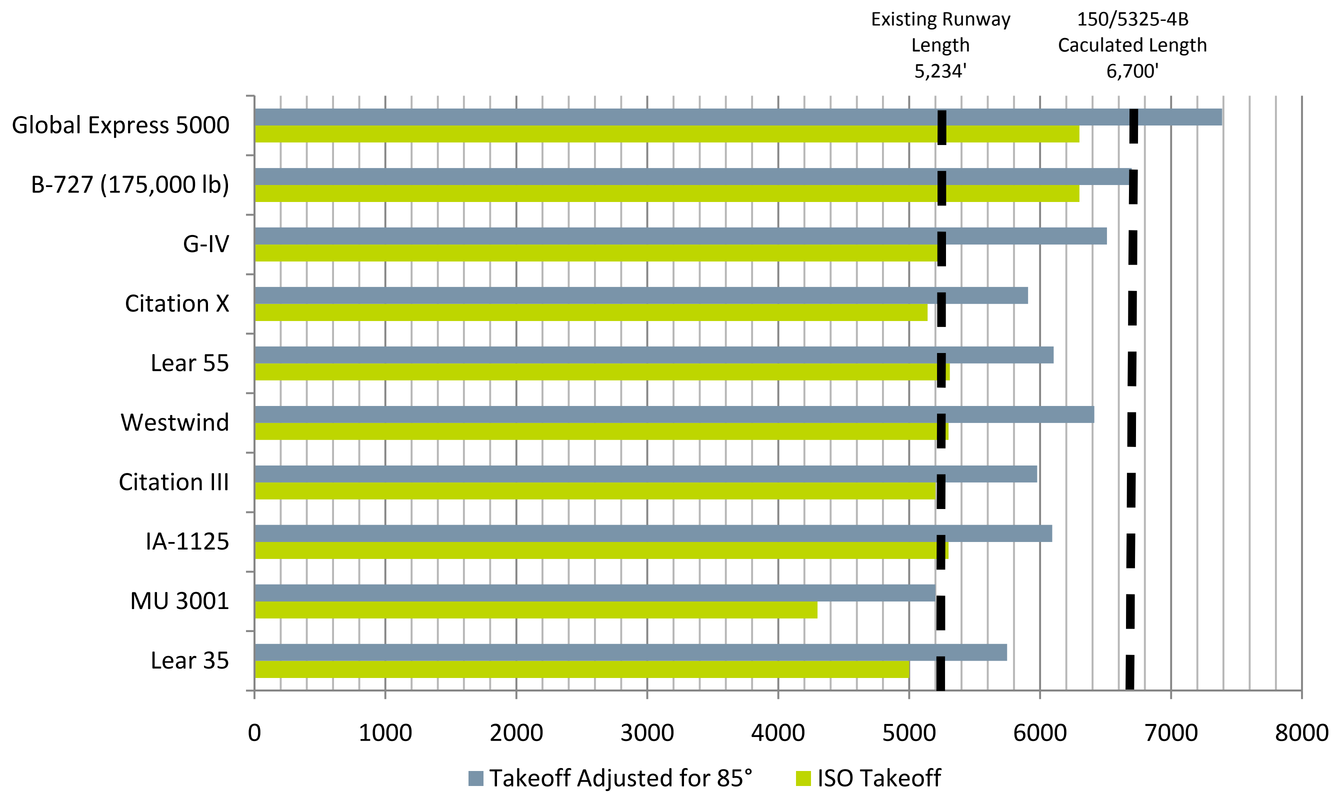


3.3.1. Aircraft Takeoff Performance in Warm Climates

As stated in Section 3.3, the mean daily maximum temperature of the hottest month at SEF is 92.6° F. Sebring maintains a warm tropical climate typically 9 months out of the year. These temperatures reduce aircraft performance, causing an increase in aircraft takeoff distance required. The runway length evaluation in Section 3.3 takes into account elevated temperatures in its graphed calculations. In order to verify these results, individual aircraft performance charts for aircraft operating at Sebring were evaluated in ISO standard takeoff conditions, and adjusted for an 85 degree day.

These results of this analysis are compiled in **Figure 4**. As seen in **Figure 4**, performance is consistent on hot days in the studied aircraft. Additional runway lengths required on an 85 degree day ranged from 14% to 19% in most aircraft. Extending the Runway to 6,700 feet as calculated using 150/5325-4B would allow for most of the surveyed aircraft to depart Sebring on a typical 85 degree day with limited load restrictions.

Figure 4. Aircraft Performance Summary ISO Standard Day vs. 85°



Source: Individual Aircraft Performance Manuals, Atkins Analysis 2013

3.3.2. Runway Length Adjustments for Contaminated Surface

The Runway lengths which are derived from **Figure 2** and **Figure 3** are based on a dry, zero effective gradient runway scenario. Typically when using AC 150/5325-4B, adjustments are made to the findings to compensate for contaminated and sloping runway surfaces. The effective gradient on Runway 01-19 at Sebring is extremely small (0.1.%), therefore no adjustment is necessary to combat effective gradient. However, Sebring airport receives on average 52.5 inches of rainfall per year, and many survey respondents stated that their operational abilities at Sebring are affected by runway surfaces being contaminated by rainfall. Therefore adjustments have been made to the runway length numbers obtained in **Figures 2 and 3** to compensate for runway contaminates.

AC 150/5325-4B Section 304.b. defines the methodology for runway length adjustment for wet and slippery runways. This section states “By regulation, the runway lengths for turbojet powered airplanes obtained from the ’90 percent useful load’ curves are also increased by 15 percent or up to 7,000 feet (2,133 meters), whichever is less.”

When this 15 percent adjustment is applied to our 6,700 foot runway length for 75 percent at 90 percent useful load calculated in section 3.3, a length of 7,705 feet is obtained. However, according to 150/5300-4B, the wet and slippery runway adjustment factor is capped at 7,000 feet. Therefore, a runway length of 7000 feet is recommended. It must be noted that runway length analysis in prior studies did not take into account wet/slippery runway lengths required. Many respondents noted contaminated surface as an issue in operating into and out of SEF and conversations with NASCAR officials have reinforced this issue.

4. GEOMETRIC DESIGN

Geometric design for this project will be based on criteria established in FAA AC 150/5300-13, Change 18, *Airport Design*, and is presented in the current FAA approved ALP.

4.1. Runway Safety Areas

A Runway Safety Area (RSA) is a graded surface centered on a runway, free of any objects, except for those objects located because of their functions. The RSA is aimed at protecting aircraft in the event of an under-shoot, over-shoot or excursion from a runway during landing or takeoff operations. In case of an emergency, the area must be able to support emergency vehicle operations and maintenance vehicles. The width and length of an RSA depend upon an airport's ARC and approach visibility minima. The RSA has specific requirements to be graded to slope away from the runway at 1.5 percent to 5 percent. Meeting RSA requirements is one of the FAA's highest priorities in maintaining safety at the nation's airports.

Runway 01-19 currently has a 500-foot wide safety area that extends 1000 feet beyond each end of the runway. In the future, if the runway is to be extended by 1,476 feet the RSA will also be extended. The existing and future RSA dimensions for the airport are graphically represented in **Figure 5**.

4.2. Runway Object Free Area

Similar to the RSA, the Runway Object Free Area (ROFA) must be free of objects except those required to support air navigation and ground maneuvering operations. This area, also centered on the runway, is aimed at enhancing the safety of aircraft operating on the runway. It is not permissible to park an airplane within the ROFA. The width and length of the ROFA depend upon an airport's ARC and approach visibility minima. The ROFA has no specific slope requirements, but the terrain within the ROFA must be relatively smooth and graded to be at or below the edge of the RSA.

Runway 01-19 currently has an 800-foot wide ROFA which extends 1000 feet beyond the runway end. The ROFA currently meets the requirements set forth by the FAA for a B-II runway. In the future, if the runway is to be extended by 1,776' the ROFA will also be extended. The existing and future ROFA dimensions for the airport are graphically represented in Figure 5.

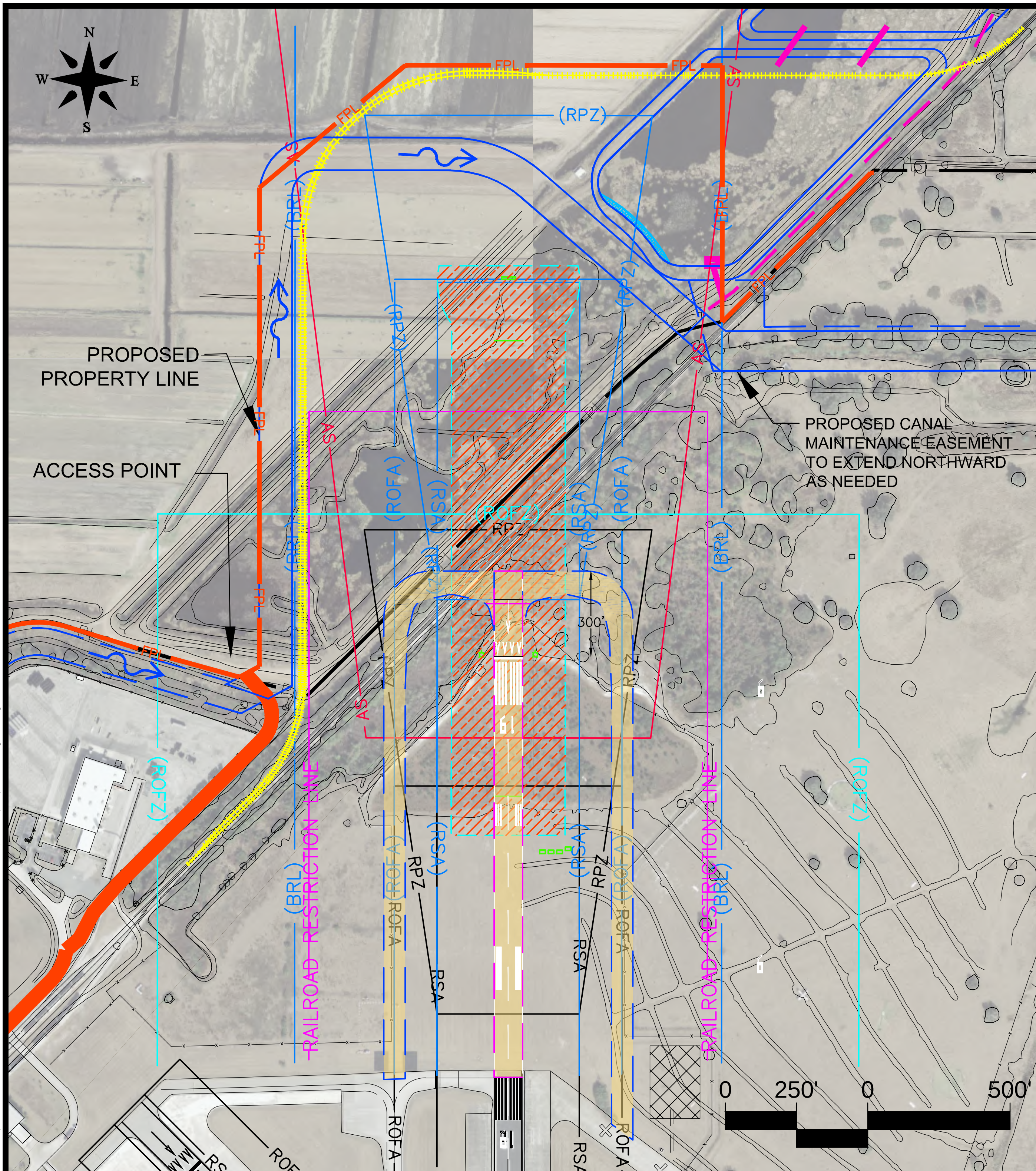
4.3. Runway Protection Zone (RPZ)

A Runway Protection Zone (RPZ) is an area centered symmetrically on an extended runway centerline. The RPZ has a trapezoidal shape and extends prior to each runway threshold. The RPZ is aimed at enhancing the safety of people and property on the ground by limiting and/or restricting the construction of certain structures in the RPZ. The inner width, outer width and length of the RPZ depend on an airport's ARC and approach visibility minima. **Figure 5** illustrates the RPZ requirements for the existing and proposed Runway 19 threshold at Sebring Regional Airport.

As part of the runway extension, the existing CSX rail spur will need to be relocated around the end of the approach to Runway 19. Originally, this relocated rail was shown within the RPZ. With the recent guidance from the FAA on compatible land use within RPZ's, SEF worked closely with the ADO on options for moving the proposed alignment of the rail spur outside the future RPZ. This resulted in the following adjustments:

- The approach to Runway 19 has been reduced from a precision approach to a non-precision approach. Due to the airspace issues associated with the Avon Park bombing range to the north, a future precision approach to Runway 19 is not likely. As a result, the Runway Protection Zone (RPZ) has been reduced in size to reflect a future non-precision approach.

- The threshold of Runway 19 has been displaced 300 feet, which allows the relocated rail spur to pass around the outside of the RPZ. This displacement would allow for 6,700' of usable runway in one direction and 7,000 in the other.



RSA	RUNWAY SAFETY AREA	FPL	FUTURE AIRPORT PROPERTY LINE
(RSA)	PROPOSED RUNWAY SAFETY AREA	PL	AIRPORT PROPERTY LINE
ROFA	RUNWAY OBJECT FREE AREA		FUTURE RAIL
(ROFA)	PROPOSED RUNWAY OBJECT FREE AREA		EXISTING RAIL
RPZ	RUNWAY PROTECTION ZONE		
(RPZ)	PROPOSED RUNWAY PROTECTION ZONE		

ATKINS

Seabring Reigonal Airport
Runway Extension
Justification Report

FUTURE
RUNWAY 19
EXTENSION

FIGURE
5

Plotted By: MARR4680
J:\AVServ\SEF - Sebring Regional Airport\SEF_Misc\RWY Extension Review - December 2011\CAD\Report_Figs.dwg Nov08,2013 - 11:07am

Land required to accommodate the relocated RPZ and Rail line will be acquired through a land swap of non-aviation use property funded by an FDOT grant. By making these changes, we were able to meet the FAA's new requirements for RPZ's, while also meeting the design requirements for CSX.

4.4. Off-Pavement Grading Design

Off–pavement grading (especially in the runway safety areas) will be designed to provide drainage off of the new pavement and into an existing or future airport drainage system. All safety area grading should be designed to

meet criteria set forth in AC 150/5300-13, Change 18. This will include a 1 ½ -inch drop off at the pavement edge, followed by a 3 to 5 percent slope for 10 feet to promote drainage away from the pavement edge.

4.5. Deviation from Standards

No modifications to standards have been identified and none are anticipated based on the proposed runway extension presented in the current FAA approved ALP.

5. ENVIRONMENTAL CONSIDERATIONS

The potential for impacts to the environment will be determined in an Environmental Assessment (EA). The EA should begin shortly after determination of eligibility of funding by the FAA.

6. AIRSPACE AND RUNWAY APPROACH ISSUES

Currently there are five non precision instrument approach procedures published by the FAA for Sebring Regional Airport. There is one GPS instrument approach procedure published by the FAA for Runway 19. The existing approach for Runway 19 begins 200 feet from the Runway end. At this point the width of the approach surface is 1,000 feet wide and is the same elevation as the runway end. The approach surface extends outward along the runway centerline for a distance of 10,000 feet and expands uniformly to an outer width of 4,000 feet. The visual surfaces rise upward and outward from the runway end elevation along the approach surface one foot vertically for each 34 feet of horizontal distance (34:1).

6.1. Planned Approaches

The current ALP shows a planned non-precision approach for Runway 01 and a planned precision approach for the existing Runway 19. The ALP will be updated to show a future non-precision approach for Runway 19 due to the airspace issues associated with the Avon Park bombing range to the north, a future precision approach to Runway 19 is not likely.

6.2. Approach and Airspace Obstructions

Obstructions to approaches and other airspace surfaces are usually associated with tall structures such as communication towers, buildings, trees, roads and other structures. Based on the current ALP there are no obstructions to the existing approaches. However, it is recommended that at the time of FAA approval for the Runway Extension that obstructions and airspace penetrations be evaluated and mapped in greater detail.

7. LAND ACQUISITION REQUIREMENTS FOR THE RUNWAY EXTENSION

Based on the existing ALP, additional land will have to be acquired for the runway extension program. The full land acquisition requirements consider all lands needed for the proposed improvements, as well as the need to have control over safety-related areas and set-backs. It is the Airport's intent to satisfy airfield safety and design requirements while minimizing costs to the airport owner and the disruption to adjoining neighbours. The land for an airport improvement project is usually purchased in fee simple. For the purpose of this project it is assumed that the SEF will have total control and absolute rights to any land acquired.

Negotiations are currently in progress with the adjacent sod farm to acquire the necessary land to accommodate the RPZ and rail realignment. These negotiations are based on a relatively equal swap of airport owned non – aviation use land for the acreage required for the extension. All fees and costs associated with the land swap are to be covered by an FDOT grant.

8. CONCLUSION

At this time it is recommended that a **1,776** foot extension be added to Runway 01-19 to allow for **7,000** feet of usable pavement from threshold to threshold. This length is recommended based on: frequent limitations on current operations, the existing and growing demonstrated demand identified from user surveys and letters, and based on the FAA performance curves for aircraft runway length requirements. The continued growth of larger aircraft using the airport on a frequent basis necessitates a longer runway at SEF. A runway length of 7,000 feet will accommodate approximately 75 percent of the larger aircraft currently using the airport at 60 percent useful load and 75% of B-II fleet at 90 percent useful load. The 7,000 feet of useable pavement will accommodate the existing as well as future operations at the Airport. By extending the existing runway length, SEF can reduce or eliminate load limitations experienced by current users, accommodate the forecast aircraft in the most recent AMPU, and market to larger aircraft users in the area that are currently constrained by the existing runway configuration.

Appendix A. Survey Example

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: ______________________________

Street Address: ______________________________

____

Phone Number: ______________________________

Point of Contact: ______________________________

Email: ______________________________

Title: ______________________________

---

1. Do you or your company currently use Sebring Regional Airport? ☐ Yes ☐ No
2. If so, approximately how many aircraft operations (takeoff and landing) per year? ________________________
3. What type of aircraft do you use when operating to or from Sebring? (please include type and "N" number) ___
____
4. What is your typical stage length and destination when departing Sebring? ______________________________
____
5. What is your typical origin when visiting Sebring? (if not based at Seabring) ______________________________
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. ______________
____
____
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? __
____
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? ______________________________
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. ______________________________
____

Please return completed surveys to Airport management.
Thank you!

August 2006

Appendix B. Letters from Operators

900 Great Meadow Road | Stratford, CT 06615 | voloaviation.aero | 877.FLY.VOLO

July 2, 2012

Mike Willingham
Sebring Airport Authority
128 Authority Lane
Sebring, FL 33870

Dear Mr. Willingham,

I am the Senior Vice President for Volo Aviation and we are a FAA Part 135 Charter Operator. Volo Aviation, LLC would like to establish Sebring Airport as a business flight destination; though the current runway length available at KSEF does not accommodate some of our charter operations.

At the existing Runway 18-36 length of 5,234-feet we are unable to operate.

If the Sebring airport were to lengthen the runway to 6,700 feet we would be able to safely bring in our larger Gulfstream cabin aircraft and depart Sebring direct to our destinations. With a runway extension we believe we could potentially operate one trip per month out of Sebring Airport.

Thank you for your consideration in this matter, and we look forward to being able to do more business with the Sebring Airport in the future.

Sincerely,

Brian Ciambra
Senior Vice President
Volo Aviation, LLC

FOUNTAINHEAD SALES AND LEASING, INC.

December 14, 2003

Mike Willingham
Sebring Airport Authority
Sebring, FL

Dear Mike,

Here are the performance figures for runway requirements for our Israeli Aircraft Astra jet. We frequently depart for Modesto, CA or Gander, New Foundland. Our take off weights for these legs range from 22,000 pounds to 24,000 pounds, depending on fuel needed for winds aloft and passenger load.

T/O Weight	Runway Required
22,000 lbs	4,900 feet
23,000 lbs	5,300 feet
23,500 lbs	5,500 feet
24,000 lbs	5,700 feet

As you can see, we cannot depart for these destinations from the Sebring Airport, which means we stop in either Tampa or Orlando to take on the necessary fuel for the trip. This costs us in time, fuel, and additional cycles on our engines and airframe. As you know, our company owns Sebring International Raceway, and we are there frequently. Additional runway of at least 1,000 feet would allow us to depart Sebring direct to our destinations in a majority of situations. Thank you for your help in this matter.

Sincerely,

Mike Powell

Mike Powell
Pilot, Fountainhead Sales

1394 BROADWAY AVE. · BRASELTON, GA · 30517
PHONE: 706-658-2864 · FAX: 706-658-2520

Schaefer Trans, Inc.
510 Plaza Drive,
Suite 1810
College Park, GA 30349
Tel. 1-404-209-0200
Fax. 1-404-209-0010

Mike Willingham
Sebring Airport Authority
128 Authority Ln.
Sebring, FL 33870

May 8th, 2012

Dear Mr. Willingham

I am the Regional Manager for Schaefer Trans, Inc., a multi modal freight forwarding company based in Atlanta. Each year Schaefer Trans services customers who ship high performance racing vehicles from Europe to compete at the Sebring International Raceway. Preferably clients would like to ship vehicles directly to the Sebring area via freighter aircraft; however the current runway length available at KSEF does not support our charter operations.

At the existing Runway 18-36 length of 5,234-feet we are unable to bring in B727 up to B747, and are forced to land at either Orlando, Miami or even as far as Atlanta. This alternate requires our company to then truck the vehicles to the Sebring Raceway. This breakup and trucking of the cargo creates an increased shipping time, cost, and liability, and results in a loss of fuel sales to the airport.

If the Sebring Airport were to lengthen the runway, we would be able safely bring in our charter freighter aircraft directly to Sebring and avoid thousands of dollars currently spent on trucking. Such an option would tremendously reduce the costs to the various series organizers and could further promote more participation by the European series to come to your historic facility. Currently we are handling 4-6 operations per year and there is interest by others whose costs could be reduced and become more attractive if landing and take off can be done at trackside. This number could grow to 10 events (20 operations) in the near future.

Thank you for your consideration in this matter, and we look forward to being able to do business with the Sebring Airport in the future.

Sincerely,

Andre Krawentek

Regional Manager

Bombardier Business Aircraft & Sikorsky Representative

New Jet International
74 Bd d'Italie
98000 Monaco
Tel. : 0037797701020

Mike Willingham
Sebring Airport Authority
128 Authority Ln.
Sebring, FL 33870

12 June 2012

Dear Mr. Willingham

I am the President for New Jet International . New Jet International is the official sales representative for Bombardier Business Aircraft in Italy, Monaco, Switzerland, Spain and Portugal and Sikorsky's commercial helicopter line in Italy, Monaco and Switzerland, beside selling pre-owned aircraft worldwide. New Jet International would like to establish Sebring Airport as a business flight destination; though the current runway length available at KSEF does not accommodate our Global for European charter operations.

At the existing Runway 18-36 length of 5,234-feet we are unable to operate

If the Sebring airport were to lengthen the runway to 6,700 feet we would be able to safely bring in our Global and depart Sebring direct to our typical destinations. With a runway extension New Jet would expect to operate 2 times per week out of Sebring airport. Thank you for your consideration in this matter, and we look forward to being able to do more business with the Sebring Airport in the future.

Sincerely,

Valerio Zamboni
President
New Jet International

COVINGTON INVESTMENTS, LLC

3 May 2012

Mr. Mike Willingham
Sebring Airport Authority
128 Authority Ln.
Sebring, FL 33870

Dear Mr. Willingham:

Please add this letter to the many I hope you will be receiving in favor of extending Runway 18-36 at The Sebring Regional Airport. As you know, the current length of 5,234 feet is inadequate for safely landing chartered flights, and I wholeheartedly support its proposed extension to accommodate 737s.

Our company, Covington Investments, currently owns and operates senior living facilities around the country, including the Palms of Sebring located at 725 South Pine Street, Sebring, Florida. Since acquiring this property in 2001, I have made numerous trips to Sebring via the Orlando International Airport. As you can imagine, the time it takes to land at a major international airport, pick up a rental car, and drive 90 or so miles from Orlando to Sebring on a regular basis really adds up!

As our company continues to expand nationwide, we anticipate increased use of chartered flights as a means of saving time. The ability to land a private plane at the conveniently located Sebring Regional Airport, rather than flying to MCO or to Fort Meyers, which is 85 miles away, would make a very big impact on our ability to operate our Florida presence efficiently.

Thank you for your consideration in this matter.

Sincerely,

John E. McMullan
President

sjh

1175 Peachtree Street • Suite 350 • Atlanta, Georgia 30361
Tel (404) 909-8383 • Fax (404) 873-5593

July 2, 2012

ABS Aviation

13007 W. Linebaugh Avenue
#102, Suite B
Tampa, Florida 33626-4489

(813) 855-3600 Phone
(813) 200-1014 Fax

5601 Rahn de Vue
Dayton, Ohio 45459

(239) 980-5114 Phone
(239) 236-0722 Fax

Mr. Mike Willingham
Executive Director
Sebring Airport Authority
128 Authority Lane
Sebring, Florida 33870

RE: Sebring Regional Airport Runway Extension

Dear Mr. Willingham:

As the contracted management company for Sebring Flight Center, the fixed base operator for the Sebring Regional Airport, we are in full support of a runway extension. Through our market surveys and on-going feedback from our customers, we are constantly reminded of the conditions that cause us to either lose potential customers and/or fuel sales due the restrictions created by the current runway length.

The Airport's location in a region of Florida that has been extremely impacted by the economy creates a scenario whereby any additional business activity would help with its recovery. While we have continued to attempt numerous marketing efforts, they have been somewhat limited in their results due in part to the limited runway length which restricts many of our potential customer's ability to use the Airport. As we reach out to corporations to fly into the Airport, we have found an interest. However, the interest quickly wanes when they realize the limitations due to runway length in hot climates. Even the aircraft that are able to utilize the Airport cannot purchase fuel or are constrained in the amount of fuel they can purchase to allow for a safe take-off. All of these factors have a significant impact on the economics of the Airport and community.

Management has done a good job in improving the Airport and working to accommodate a more eclectic group of airport users. However, the Airport is at a crossroads for future expansion and in providing full aeronautical options to the business world and our community without adding length to the runway.

Respectfully,

Michael A. Hodges
Managing Director

PFS
PANORAMA
FLIGHT SERVICE

June 29, 2012

Mike Willingham
Sebring Airport Authority
128 Authority Lane
Sebring, FL 33870

Dear Mr. Willingham,

I am the president for Panorama Flight Service, Inc. Panorama is a FAR Part 135 Charter Operator. Panorama would like to establish Sebring Airport as a business flight destination; though the current runway length available at KSEF does not accommodate some of our charter operations.

At the existing Runway 18-36 length of 5,234-feet we are unable to operate.

If the Sebring airport were to lengthen the runway to 6,700 feet we would be able to safely bring in our larger Bombardier Challenger aircraft and depart Sebring direct to our destinations. With a runway extension we believe we could potentially operate one trip per month out of Sebring Airport.

Thank you for your consideration in this matter, and we look forward to being able to do more business with the Sebring Airport in the future.

Sincerely,

Gene Condreras

President
Panorama Flight Service, Inc. – HPN
Celebrating our 54th year in business!
914-328-9809, ext. 855
C-914-424-0951
www.panoramaflightservice.com

Appendix C. Surveys

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

XAUEH

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: AEROSERVICIOS AZTECA SA CV

Street Address: INDUSTRIALES DEL PONIENTE 2300

Phone Number: 011-5281-8400-2000

Point of Contact:

Email: CARRASAU2004@HOTMAIL.COM

Title: PILOT

---

1. Do you or your company currently use Sebring Regional Airport? NO
2. If so, approximately how many aircraft operations (takeoff and landing) per year? TWO
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? H25B, XA-UEH
4. What is your typical stage length and destination when departing Sebring? MONTERREY MEXICO MMAN
5. What is your typical origin when visiting Sebring (if not based at Airport)? SAN PETESBURGO FL
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. REDUCED PAYLOAD AND FUEL. WE NEED TO FLY 1200 MN
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1000 FEET MORE
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? I HAVE NO IDEA
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. SAME AIRCRAFT

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: ALAN JAY AVIATION

Street Address: 1 ALAN JAY WAY
SEBRING, FL 33870

Phone Number: 863 414 2832

Point of Contact: KEVIN COLSON

Email: flysebring@yahoo.com

Title: AVIATION DEPT. MGR.

---

1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 230+

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? BE400 N42AJ

4. What is your typical stage length and destination when departing Sebring? .6 TMB/SRQ typical destinations

5. What is your typical origin when visiting Sebring (if not based at Airport)? N/A

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. @ 25°C + cannot take off w/ full fuel + passengers, wet runway conditions limit landing

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1500 ft.

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? NONE, BUT WOULD BE ABLE TO TAKE ON MORE FUEL

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. POSSIBLY, CONSIDERING PURCHASE OF LEAR 60 OR CITATION III

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Bruce White

Street Address: 1040 West Adams st # 330
Chicago Illinois 60607

Phone Number: 312-286-4933

Point of Contact:

Email: BruceHWhite@AOL.com

Title: Captain 560 Encore

---

1. Do you or your company currently use Sebring Regional Airport? Yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year?
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
4. What is your typical stage length and destination when departing Sebring? One Hour
5. What is your typical origin when visiting Sebring (if not based at Airport)? All over
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation.
   2,000 Ft would Be Nice
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport?
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. Yes

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATI(

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: CET

Street Address: 201 S. MATANZAS Blvd
ST. AUGUSTINE, FL 32080

Phone Number: 904-814-6802

Point of Contact: RICHARD GEORGE

Email: buckgeorge@bellsouth.net

Title: CHIEF PILOT

---

1. Do you or your company currently use Sebring Regional Airport? YES
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 6
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? CESSNA CITATION ENCORE + BRAVO N908AS N144HL
4. What is your typical stage length and destination when departing Sebring? 200 MILE SGJ ST. AUGUSTINE
5. What is your typical origin when visiting Sebring (if not based at Airport)? SGJ
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. NOT YET HOWEVER COMPANY buying GULFSTREAM WHICH WOULD BE Limited
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1500'
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? Ø
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. YES, to BE PURCHASED IN NEXT 8 MONTHS

Please return completed surveys to Airport management.
Thank you!

August 2006

999CY

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Dean Coastal, LLC

Street Address: Brooksville, FL

Phone Number: 863-289-3429

Point of Contact: Andrew Major

Email: SkycrewAircraft@AOL.Com

Title: Chief Pilot

---

1. Do you or your company currently use Sebring Regional Airport? yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 30
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? Hawker - N999CY N82CA
4. What is your typical stage length and destination when departing Sebring? TPA, OCALA, Brooksville
5. What is your typical origin when visiting Sebring (if not based at Airport)? BKV. OPF. TPA
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. yes, Hot and Heavy is a No-go we have to be Light on fuel.
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 7-8000 Total would be great
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 10-20
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. NO

An ILS would be great!

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Downs Foods

Street Address:

Phone Number: 727-215-1995

Point of Contact: Rob

Email:

Title: Chief Pilot

---

1. Do you or your company currently use Sebring Regional Airport? No

2. If so, approximately how many aircraft operations (takeoff and landing) per year?

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? BE400 N777DD

4. What is your typical stage length and destination when departing Sebring? NA

5. What is your typical origin when visiting Sebring (if not based at Airport)? NA

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. yes
short runway limits fuel load therefore reducing our range

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? NA

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? NA

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. NA

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: EUROPEAN AVIATION AIR CHARTER

Street Address: EUROPEAN HOUSE, BOURNEMOUTH INTERNATIONAL AIRPORT, HURN, BH23 6EA ENGLAND

Phone Number: +44 (0)1202 581111

Point of Contact: MR. NICK JONES EXT 157

Email: nick.jones@eaac.co.uk

Title: PERFORMANCE & NAVIGATION OFFICER

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1. Do you or your company currently use Sebring Regional Airport? WOULD LIKE TO
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 20
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? BOEING 737-200 ADV G-CEAC
4. What is your typical stage length and destination when departing Sebring? 3 TO 5 HOURS
5. What is your typical origin when visiting Sebring (if not based at Airport)? BOURNEMOUTH, UK
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. PAYLOAD IS NOT NORMALLY A PROBLEM BUT IT DOES SEVERLY CURTAIL OUR SECTOR LENGTH IF EN ROUTE RETURNING TO UK
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? AN EXTRA 1,000' WOULD BE USEFUL, 2000' IDEAL
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 20
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. N/A

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Executive Jet Management

Street Address: 4556 Airport Rd.
Cincinnati, Ohio 45226

Phone Number: 513-259-5893

Point of Contact: Roy Vennekotter

Email:

Title: Captain. Falcon 2000

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1. Do you or your company currently use Sebring Regional Airport? Yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year?
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? Falcon 2000 N149VB
4. What is your typical stage length and destination when departing Sebring? Various
5. What is your typical origin when visiting Sebring (if not based at Airport)? Denver, CO
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. Temperatures above 10°C restrict us to less than max takeoff weight because of short runway
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? At least 1000'.
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? Unknown (Net Jets) Many aircraft also restricted to dry runway ops. only.
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: FAIR WIND AIR CHARTER

Street Address: 2555 S.E. DIXIE HWY
HANGAR 7, STUART, FL 34996

Phone Number: 800 989 9665

Point of Contact: KIM KRUM

Email: CHARTER@FLYFAIRWIND.COM

Title: CHARTER OPS MGR

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1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 20+

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? CITATION 55, N155BC

4. What is your typical stage length and destination when departing Sebring? 55 + 1500

5. What is your typical origin when visiting Sebring (if not based at Airport)? SUA

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. T/O IS LIMITED DUE TO LENGTH AVAILABLE

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 500-750 ft

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport?

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. 820BA, 611

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Gary Jet Center

Street Address: 5401 Industrial Highway
Gary, IN 46406

Phone Number: (219) 406-0977

Point of Contact: Chris Coogan

Email: RMVB4FLT@yahoo.com

Title: Captain

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1. Do you or your company currently use Sebring Regional Airport? yes

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 250 Fa?

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? C441/B N54G

4. What is your typical stage length and destination when departing Sebring? 900 NM to GYY or 50NM to SRQ

5. What is your typical origin when visiting Sebring (if not based at Airport)? GYY/SRQ/MDW

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. NO
This is sufficient runway for our purposes

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? None

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? None

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. We operate Citation type A/C that also would have no problem with current runway configuration

Please return completed surveys to Airport management.
Thank you!

August 2006

511 RH

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Hendrick Motorsports

Street Address: ______

Phone Number: 704-455-3400

Point of Contact: DAVE DUDLEY

Email: ______

Title: DIRECTOR OF OPS

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1. Do you or your company currently use Sebring Regional Airport? Yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year? ?
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? SAAB 2000
4. What is your typical stage length and destination when departing Sebring? CONCORD NC. 2 HRS.
5. What is your typical origin when visiting Sebring (if not based at Airport)? CONCORD NC
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. Somewhat
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1000'
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 3-5 OR MORE.
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. ______

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Jet Direct

Street Address:

Phone Number: 704-771-6536

Point of Contact: PAT GROSS

Email:

Title:

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1. Do you or your company currently use Sebring Regional Airport? Yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 20
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? LR 31, 35, 55, 60
4. What is your typical stage length and destination when departing Sebring? 6000
5. What is your typical origin when visiting Sebring (if not based at Airport)? KSUS
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. Yes
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1000 feet.
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? N/A
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. N/A

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: JET CHOICE

Street Address: 150 BAYFIELD ST
ST. PAUL, MN 55107

Phone Number: 651 225 1900

Point of Contact: JON DIETMAN

Email:

Title: CAPTAIN

---

1. Do you or your company currently use Sebring Regional Airport? 1st time
2. If so, approximately how many aircraft operations (takeoff and landing) per year?
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
DA10 N710 JC
4. What is your typical stage length and destination when departing Sebring? 3 HRS APF, STP
SCOTTSDALE
5. What is your typical origin when visiting Sebring (if not based at Airport)? STP
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. YES
HIGH TEMP – TAKE ON LESS FUEL
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
1500 ft
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? NONE
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. YES –
DA50 DA900

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Jet Choice
Street Address: 750 Bayfield St.
St. Paul, MN 55107
Phone Number: 651-225-1212
Point of Contact: Perry Smith Pilot
Email:
Title: Pilot.

1. Do you or your company currently use Sebring Regional Airport? Yes 3-17-07
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 4
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
Falcon 10 - N710JC Falcan 900 N790JC
4. What is your typical stage length and destination when departing Sebring? 1300 miles
5. What is your typical origin when visiting Sebring (if not based at Airport)? STP
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation.
Fuel planning for landing length
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
1000'
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? Few more
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. No

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Newman Racing.

Street Address: 85 Tower Rd
White Plains, NY 10604

Phone Number: 914-646-5673

Point of Contact: Rod McKenzie

Email: sabre1@earthlink.net

Title: Chief Pilot

1. Do you or your company currently use Sebring Regional Airport? Yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 6
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? Sabre 65 N499NH.
4. What is your typical stage length and destination when departing Sebring? 1000 Mi
5. What is your typical origin when visiting Sebring (if not based at Airport)? HPN.
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. Warm weather reduces our allowable fuel load to the point where making our destination is a problem
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1000'
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 2
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. No

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: PCI LLC

Street Address: 1011 S. Wolf Rd

Wheeling Il

Phone Number: 847-558-6514

Point of Contact: David Berestend

Email: DMBLR35 @ comcast.net

Title: Chief Pilot

1. Do you or your company currently use Sebring Regional Airport? YES
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 2
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? Citation - Jet.
4. What is your typical stage length and destination when departing Sebring? SAU + PWK
5. What is your typical origin when visiting Sebring (if not based at Airport)? SAU & PWK
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. NO
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 500'
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 0
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. Possibly

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: PETERSEN HOLDINGS LLC C/O

Street Address: CURT RHODES
4242 BELKIN CT
N. LAS VEGAS NV 89032

Phone Number: 702 596-2910

Point of Contact:

Email: N525MPPILOT @ AOL. COM

Title: CHIEF PILOT

1. Do you or your company currently use Sebring Regional Airport? yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 10
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? N525MP Citation CJ3
4. What is your typical stage length and destination when departing Sebring? west coast
5. What is your typical origin when visiting Sebring (if not based at Airport)? LAS VEGAS
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. NO
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1000'
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? UNKNOWN
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.

Please return completed surveys to Airport management.
Thank you!

August 2006

53BB

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Robertson Racing LLC.

Street Address: 59515 North Ave
Ray, MI 48095

Phone Number: 586 530 6696

Point of Contact:

Email: drober@earthlink.net

Title: CEO

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1. Do you or your company currently use Sebring Regional Airport? Yes

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 24

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
N53BB Cessna Citation

4. What is your typical stage length and destination when departing Sebring?
800 miles

5. What is your typical origin when visiting Sebring (if not based at Airport)? KPHN (Michigan)

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. the Rwy Lenght is OK for the Citation but it is too short for us to move up to a larger Jet

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
Prefer 6500'

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? for us, no change

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. we might upgrade to a Falcon

Please return completed surveys to Airport management.
Thank you!

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: RUBY TUESDAY INC.

Street Address: 2285 AIRPORT HWY
ALCOA, TN 37701

Phone Number: 865 380 0901

Point of Contact: GLENN LOWERY

Email:

Title: AVIATION DEPT. MGR.

---

1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 1

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
LJ-31 N154RT

4. What is your typical stage length and destination when departing Sebring?
1.4 HRS → TYS

5. What is your typical origin when visiting Sebring (if not based at Airport)? TYS

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. YES
WET RUNWAY CONDITIONS LIMIT TAKEOFF FROM SEF / TAKING OFF IN HIGH TEMPERATURES MEANS TAKING ON LESS FUEL

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
ADDTL. 1000 FT WOULD BE IDEAL

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? NONE, BUT WOULD BUY MORE FUEL.

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. N/A

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: TAVAERO JET CHARTER

Street Address: 8031 AIRPORT Blvd.
HOUSTON, TX 77061

Phone Number: (800) 343-3771

Point of Contact: HOUSTON

Email: [redacted] ca@tavaero.com

Title: Pilot

---

1. Do you or your company currently use Sebring Regional Airport? YES
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 2—3
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
HS-800 A N196MG
4. What is your typical stage length and destination when departing Sebring?
4 HR
5. What is your typical origin when visiting Sebring (if not based at Airport)? BOCA RATON
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation.
YES, RESTRICTS FUEL PAYLOAD FOR EXTENDED LEGS, CANNOT FLY IN PART 135 W/OUT 80% EXEMPTION
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
1000'
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? UNSURE, BUT WOULD BUY MORE FUEL
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. N/A

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: TK STANLEY INC

Street Address: WAYNESBORO, MS

Phone Number: 662-791-1193

Point of Contact: C. MILLER

Email:

Title: PILOT

---

1. Do you or your company currently use Sebring Regional Airport? YES
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 2
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? PC12
4. What is your typical stage length and destination when departing Sebring? 3dA.
5. What is your typical origin when visiting Sebring (if not based at Airport)?
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. NO
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 2
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. NO.

Please return completed surveys to Airport management.
Thank you!

August 2006

0212012

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: GG Aviation

Mailing Address: 230 OAK LANE
GREENSBURG PA 15601

Phone Number: 724 289 - 7608

Point of Contact: RICHARD CONSTANTINE

Email: RICKRACE @ AOL.COM

Aircraft/Tail Number: 500CG

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1. Do you or your company currently use Sebring Regional Airport? yes

2. If so, approximately how many aircraft operations (takeoff/landings) per year? 10

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? N500CG LR35 N750XX C-750

4. What is your typical stage length and destination when departing Sebring? DESTINATION INDY 2HRS 900 MILES

5. What is your typical origin when visiting Sebring (if not based at Airport)? INDY KIND

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. yes HOT DAY WGHT RESTRICTION

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 600 FT

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 10

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.
yes

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: CG Aviation

Mailing Address: One Oxford ctr, STE 3550
Pittsburgh, PA 15219

Phone Number: 412 391 3660

Point of Contact: Lowell Thomas

Email: lthomas@ganassi.com

Aircraft/Tail Number: N500CG

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1. Do you or your company currently use Sebring Regional Airport? yes

2. If so, approximately how many aircraft operations (takeoff/landings) per year? 6

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? LR35

4. What is your typical stage length and destination when departing Sebring? 800NM KIND

5. What is your typical origin when visiting Sebring (if not based at Airport)? KIND

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. yes - aircraft type

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1000'

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 3

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. CE-750 LJ60

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: CATALINA AEROSPACE

Street Address: 12240 NE 14 AV

MIAMI FL

Phone Number: 305 892 1500

Point of Contact: SARA NEMSER

Email: INFO@FLYCATALINA.COM

Title: Admin

---

1. Do you or your company currently use Sebring Regional Airport? Yes

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 10

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? LR31 N122VL N30HB C340

4. What is your typical stage length and destination when departing Sebring? 200 - 800 NM

5. What is your typical origin when visiting Sebring (if not based at Airport)? OPF - TEB

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. NOT with LEAR 31A but with other OTHER AIRCRAFT would not be ABLE TO GET FULL FUEL loads.

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? ~~N~~A 1000'

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? N/A

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. Yes - HAWKER

Please return completed surveys to Airport management.
Thank you!

August 2006

CORRECT
2/23/12

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: TRANSPORTES AEREOS SIERRA MADRE

Street Address: WASHINGTON OTE 629
MONTERREY NL. 64000 MEXICO

Phone Number: +521 81 8252 2883

Point of Contact: MARIO FERNANDEZ

Email: mariofdz@prodigy.net.mx

Title: DIRECTOR OF OPERATIONS

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1. Do you or your company currently use Sebring Regional Airport? YES
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 2
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? HS125-800A XACHA
4. What is your typical stage length and destination when departing Sebring? 1100 N.M.
5. What is your typical origin when visiting Sebring (if not based at Airport)? MMAN
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. YES, TOO SHORT A RUNWAY WHEN TEMPERATURES RISE ABOVE 80°
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1400'
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 6 OR 8
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. NO.

Please return completed surveys to Airport management.
Thank you!

August 2006

CORRECT 2/26/12

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: MVA AVIATION LTD

Street Address: Clarendon house, 2 church street
Hamilton HM 11 Bermuda

Phone Number: +41 79 620 50 58

Point of Contact: Gabriele Bernasconi

Email: Gabriele@Bernasconi.com

Title: Captain

---

1. Do you or your company currently use Sebring Regional Airport? Yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 5
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
Global Express VPBVG
4. What is your typical stage length and destination when departing Sebring? Europe
5. What is your typical origin when visiting Sebring (if not based at Airport)? Opa Locka
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation.
with longer runway we could load fuel To go direct to Europe
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
2000 ft
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 4
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. NO

Please return completed surveys to Airport management.
Thank you!

August 2006

Rec'd 2.12.08

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: TAVAERO JET CHARTER

Street Address: 8031 AIRPORT Blvd.
HOUSTON, TX 77061

Phone Number: (800) 343-3771

Point of Contact: HOUSTON

Email: [redacted] ca@tavaero.com

Title: PILOT \ Charter

---

1. Do you or your company currently use Sebring Regional Airport? YES
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 2 — 3
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? HS-800 A N196MG
4. What is your typical stage length and destination when departing Sebring? 4 HR
5. What is your typical origin when visiting Sebring (if not based at Airport)? BOCA RATON
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. YES, RESTRICTS FUEL PAYLOAD FOR EXTENDED LEGS, CANNOT FLY IN PART 135 W/OUT 80% EXEMPTION
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1000'
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? UNSURE, BUT WOULD BUY MORE FUEL
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. N/A — YES

Please return completed surveys to Airport management.
Thank you!

2-20-10 (18)

877JG

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: USA JET AIRLINES

Street Address: 2068 E STREET
BELLEVILLE, MI 48111

Phone Number: 734-547-7200

Point of Contact: RAY MUNOT

Email: —

Title: DIRECTOR OF OPERATIONS

1. Do you or your company currently use Sebring Regional Airport? YES
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 10
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
DA-20 (N877JG)
4. What is your typical stage length and destination when departing Sebring?
KYIP (WILLOW RUN, MI) 2 HR 30 MIN.
5. What is your typical origin when visiting Sebring (if not based at Airport)? KYIP
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation.
YES, REDUCED FUEL | PAYLOAD → VARIES WITH TEMP
NO DC-9 OPS.
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
1000 FEET
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? <10
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. YES – MULTIPLE "N" #'S

Jim

Please return completed surveys to Airport management.
Thank you!

August 2006

2/22/12
correct

8/8CK.

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Kalitta Charters

Street Address: 843 Willow Run Airport

Phone Number: 800 525-4882

Point of Contact:

Email:

Title: Pilot

1. Do you or your company currently use Sebring Regional Airport? yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 4
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? LR-35
4. What is your typical stage length and destination when departing Sebring? TYS
5. What is your typical origin when visiting Sebring (if not based at Airport)? TYS
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. NO - wx permitting wet / vs. dry yes.
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? N/A - Extension would enhance lndg capability when wet
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? NOT sure / On demand operator
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. On demand / unsure

Please return completed surveys to Airport management.
Thank you!

August 2006

2/22/12
Correct

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: AIR TREK INC

Street Address: 28000 AIRPORT RD.

Phone Number: 800 633 5387

Point of Contact: DAN WOHLERS

Email:

Title: CHIEF PILOT

---

1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 30

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? C-500 WW24 WESTWIND N633AT, N511AT, N744AT, N492AT, N689AT

4. What is your typical stage length and destination when departing Sebring? MULTIPLE LONG DISTANCE

5. What is your typical origin when visiting Sebring (if not based at Airport)? PGD

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. WESTWIND IS RESTRICTED BY WEIGHT/FUEL DUE TO SHORT RUNWAY

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1500

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 15

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. N/A yes, would allow nonstop stage flights out of SEF

Please return completed surveys to Airport management.
Thank you!

August 2006

Director of Operations

2/22/12

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: SDI

Street Address: 942 Chinquapin Pl.
Houston TX

Phone Number: 281-435-0439

Point of Contact: Roger Minson

Email:

Title: Pilot

---

1. Do you or your company currently use Sebring Regional Airport? Yes

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 6

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
CE-525 Falcon 10

4. What is your typical stage length and destination when departing Sebring? HOU

5. What is your typical origin when visiting Sebring (if not based at Airport)? HOU

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation.
Reduced outbound fuel load

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
2000

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? Unk.

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. Unk.

Please return completed surveys to Airport management.
Thank you!

August 2006

Roger 2/22/12

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Lyon Aviation

Street Address: Tamarac Rd

Phone Number: 413-443-6700

Point of Contact: Marc Lyon

Email:

Title: Chief Pilot

---

1. Do you or your company currently use Sebring Regional Airport? First Time
2. If so, approximately how many aircraft operations (takeoff and landing) per year? N/A
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? Hawker 800 N7ONE
4. What is your typical stage length and destination when departing Sebring? N/A 3 hr.
5. What is your typical origin when visiting Sebring (if not based at Airport)? N/A
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. Reduce Payload.
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1500' 10300 ft
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? N/A
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. N/A Yes!

Please return completed surveys to Airport management.
Thank you!

August 2006

Correct
8/10/10

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Ken McNeil - PRESIDENTIAL AVIATION

Street Address: 1725 NW 51st PLACE
FT. LAUDERDALE, FL 33309

Phone Number: 888 772 8622 Ext 228

Point of Contact:

Email:

Title: N842PA

---

1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 5 - 10

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
G-IV N 842 PA G4 Falcon 2000

4. What is your typical stage length and destination when departing Sebring? 1.0 FXE

5. What is your typical origin when visiting Sebring (if not based at Airport)? FXE

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. ~~NO~~
YES LR 60 AT LEAST 6200'

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
~~N/A~~ 6'200 TOTAL

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 5

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.
YES, BRING DIFFERENT A/C TYPES (LR 60)

Please return completed surveys to Airport management.
Thank you!

August 2006

2/28/10
Correct

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: J.P. KOTTS & CO

Street Address: 650 POYDRAS SUITE 2525
NEW ORLEANS, LA 70130

Phone Number: 251-752-0380

Point of Contact: DAVID ROWLAND

Email: G450PILOT@GULFTBL.COM

Title: DIR OF OPS

---

1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 10

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? GULFSTREAM 450 N15K

4. What is your typical stage length and destination when departing Sebring? 800-2000 NM

5. What is your typical origin when visiting Sebring (if not based at Airport)? KHOU

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. YES - REDUCED STAGE LENGTH

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1,500'

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 20

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. NO

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: FAIR WIND AIR CHARTER

Street Address: 2555 S.E. DIXIE HWY
HANGAR 7, STUART, FL 34996

Phone Number: 800 989 9665

Point of Contact: KIM KRUM

Email: CHARTER@FLYFAIRWIND.COM

Title: CHARTER OPS MGR

---

1. Do you or your company currently use Sebring Regional Airport? YES
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 20 +
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
CITAR. 55, N155BC
4. What is your typical stage length and destination when departing Sebring? 56 + 1500
5. What is your typical origin when visiting Sebring (if not based at Airport)? SUA
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. T/O IS LIMITED DUE TO LENGTH AVAILABLE UNABLE TO PURCHASE FULL FUEL LOAD
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
500 - 750 ft
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport?
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. 820BA, 6111
Would Allow for their larger Aircraft

Please return completed surveys to Airport management.
Thank you!

August 2006

Correct 2/23/12

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Connecticut Aviation

Street Address: 49 Mirybrook Road
Danbury CT 06810

Phone Number: (203) 791-9944

Point of Contact: John Koserics

Email:

Title: Chief Pilot

---

1. Do you or your company currently use Sebring Regional Airport? Yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 6
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
N920DB Falcon 900, N209TS Hawker 700
4. What is your typical stage length and destination when departing Sebring?
KHPN 600 Nm
5. What is your typical origin when visiting Sebring (if not based at Airport)? KHPN
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. NO
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
N/A
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? N/A
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. N/A

Please return completed surveys to Airport management.
Thank you!

Correct 2/23/10

August 2006

140 VJ

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: CARLISLE AIR

Street Address: P O BOX 1177
PORTSMOUTH NH 03802

Phone Number: 603 334 3477

Point of Contact: PETER FERGUSON

Email: PFERGUSON@CARLISLEAIR.COM

Title:

---

1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 4

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
WESTWIND N140VJ larger Cessna XL.

4. What is your typical stage length and destination when departing Sebring? 1000 MLS
PORTSMOUTH NH.

5. What is your typical origin when visiting Sebring (if not based at Airport)? PORTSMOUTH KPSM

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation.
ON HOT AFTERNOONS RUNWAY IS INSUFFICIENT TO ALLOW AIRCRAFT OPERATION WITH FUEL TO DESTINATION. CORRECT

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
500'

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? SAME

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. @ 6700 WE WOULD NOT HAVE ANY RESTRICTIONS

Please return completed surveys to Airport management.
Thank you!

CORRECT 2/23/12

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: EEI

Street Address: P.O. Box 476
Dawsonville, GA.

Phone Number: 706-265-1742

Point of Contact: John

Email: Racepilot9 @ windstream.net

Title: Av. Mgr.

1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 2

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
N997EA - C-560

4. What is your typical stage length and destination when departing Sebring? 500 miles

5. What is your typical origin when visiting Sebring (if not based at Airport)? 3OGA

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. YES
In Hot wether

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
800'

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? None

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. None

Please return completed surveys to Airport management.
Thank you!

August 2006

Collected 2/28/12

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: NetJet / Craig Stepp

Street Address: 1998 Frissell Ave
Apex NC 27502

Phone Number: 919 522-8750

Point of Contact: Craig Stepp

Email: SteppCo@yahoo.com

Title: Captain

---

1. Do you or your company currently use Sebring Regional Airport? Yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 20
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? BE-400A
4. What is your typical stage length and destination when departing Sebring? 1-2 hrs
5. What is your typical origin when visiting Sebring (if not based at Airport)? 2hrs
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. Yes
Climb limited by weight need longer runway for better performance
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 6700 perfect
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? Yes
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. N122QS

Please return completed surveys to Airport management.
Thank you!

August 2006

2122112

Net Jets 614-239-5535

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Netjets

Street Address: 4111 Bridgeway Ave
Columbus OH 43219

Phone Number: 843-397-9517

Point of Contact: Home

Email:

Title: Captain

---

1. Do you or your company currently use Sebring Regional Airport? Yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 50 +
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? all cessna typs
4. What is your typical stage length and destination when departing Sebring? 800 mi/-2
5. What is your typical origin when visiting Sebring (if not based at Airport)? unlimited
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. Yes
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 2000 ft
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport?
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.

2/22/12

Please return completed surveys to Airport management.
Thank you!

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY 893 CW

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: FlightOptions

Street Address: 26180 Curtiss Wright Parkway
Richmond Heights, OH 44143

Phone Number:

Point of Contact:

Email:

Title:

---

1. Do you or your company currently use Sebring Regional Airport? Yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 50
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
   Hawker 800XP / BE40 / Embraer Legacy / Citation X
4. What is your typical stage length and destination when departing Sebring?
   Various
5. What is your typical origin when visiting Sebring (if not based at Airport)? Various
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation.
   Yes
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
   2000
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? Double
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. Yes

Please return completed surveys to Airport management.
Thank you!

2/20/12

August 2006

Kelly

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: ~~[illegible]~~ FLT. OPTIONS

Street Address: 26180 CURTISS WRIGHT PKWY
CLEVELAND, OH 44143

Phone Number: 216 402 4762

Point of Contact: JACK WISHART

Email:

Title: CAPTAIN

---

1. Do you or your company currently use Sebring Regional Airport? YES
2. If so, approximately how many aircraft operations (takeoff and landing) per year? 20
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
BE 400 N195TA
4. What is your typical stage length and destination when departing Sebring?
WEST PALM (FOR FIRST TIME FLT. IN THIS AIRCRAFT)
5. What is your typical origin when visiting Sebring (if not based at Airport)?
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation.
60% RUNWAY RULE - PART 135 / WET RUNWAY OP SPECS (HAVE TO GET 80% EXEMPTION)
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
1000+
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? YES - 5-10 APPROX.
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.
POSSIBLY, UNSURE OF PERFORMANCE #s
HS-800XP, LEGACY

Please return completed surveys to Airport management.
Thank you!

21000

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Flight Options

Street Address: 26180 Curtis Wright Pkwy
Cleveland OH 44143

Phone Number: 888-291-3828

Point of Contact: Jim Moors

Email: Jama @ flightoptions.com

Title: Pilot

---

1. Do you or your company currently use Sebring Regional Airport? Yes

2. If so, approximately how many aircraft operations (takeoff and landing) per year? 10

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)?
HS-125 various tail numbers

4. What is your typical stage length and destination when departing Sebring? 500' various destinations

5. What is your typical origin when visiting Sebring (if not based at Airport)? all over

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation.
if wet yes

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations?
1500'

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? don't know

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. EMB-145, CX

Please return completed surveys to Airport management.
Thank you!

August 2006

2100816

RUNWAY 19/1 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: FLIGHT OPTIONS

Mailing Address:

Phone Number: 216 470 8277

Point of Contact: Tom Burns

Email: ~~Tom~~ BURN @ FLIGHTOPTIONS.COM

Aircraft/Tail Number: N328FL

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1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff/landings) per year? 50

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? P505 12 CE 10

4. What is your typical stage length and destination when departing Sebring? 700

5. What is your typical origin when visiting Sebring (if not based at Airport)?

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. YES

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 500

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? YES

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: FLIGHT OPTIONS

Mailing Address: 26100 CURTISS-WRIGHT PKWY
CLEVELAND, OH 44143

Phone Number: 216-261-3993

Point of Contact: BILL BILGER

Email: BILG @ FLIGHTOPTIONS.COM

Aircraft/Tail Number: N471LX

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1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff/landings) per year? ?

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? BE-400, CE-750, EMB-145

4. What is your typical stage length and destination when departing Sebring?
FRACTIONAL OPS

5. What is your typical origin when visiting Sebring (if not based at Airport)?
FRACTIONAL OPS

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. YES, FOR LARGER ACFT

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1300'

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? ?

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.
YES

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Flight Options

Street Address: 26180 Curtiss-Wright Parkway
Cleveland, OH 44143

Phone Number: 216-261-3500

Point of Contact: Steve Brenner

Email:

Title: Captain

1. Do you or your company currently use Sebring Regional Airport? Yes

2. If so, approximately how many aircraft operations (takeoff and landing) per year? MANY

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? BE400 N743TA

4. What is your typical stage length and destination when departing Sebring? Too many list

5. What is your typical origin when visiting Sebring (if not based at Airport)? All over the U.S.

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. Yes, if the Runway is wet or we have a full load of PAX. we are limited Part 135 requires the .60% rule which further limits us.

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1000 + feet

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? Unknown, But with over 100 Aircraft it would increase

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. Above my pay grade
YES, if needed.

Kelly

2/22/12

Please return completed surveys to Airport management.
Thank you!

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company / Name: Jet Corp

Street Address: 18500 Edison Ave
Chesterfield, MO 63005

Phone Number: 636-530-7000

Point of Contact: Brandon Miller

Email:

Title: Chief Pilot

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1. Do you or your company currently use Sebring Regional Airport? Yes
2. If so, approximately how many aircraft operations (takeoff and landing) per year? ?
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? LR 60 N658KS
4. What is your typical stage length and destination when departing Sebring? 2.2 - SUS
5. What is your typical origin when visiting Sebring (if not based at Airport)? KSUS
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. Yes, we have to reduce payload/fuel to operate our Learjets in/out of this field length, especially operating FAR part 135.
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1000'-1500' extra would greatly help
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? ?
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.

Please return completed surveys to Airport management.
Thank you!

2/23/12

August 2006

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Name / Title: DAVID MACNEIL / CEO MNAPL

Phone Number: 630-740-7500

Email: dfmacneil@macneil.com

1. Does the current length (5,224') and un-grooved surface of Runway 18-36 restrict your use of the Airport? Does Runway Length limit aircraft type and/or reduce fuel capacity, payload, or stage length? If so, please provide a brief explanation.

   Under certain weight, payload and runway conditions our ability to land and or take off may be compromised.

2. How much additional runway length, if any, would you need to accommodate your aircraft and operations?

   Another 1500 feet would, in many situations, allow us to either land or take off in the safest manner possible.

3. If Runway 18-36 was extended to 6,700 feet, how many operations per year would you expect to make at Sebring Regional Airport? Eight per year

4. What types of aircraft are would be used operating to or from Sebring?

   2012 Citation business jet.

5. What would be the typical stage length when departing Sebring?

   1200 to 2400 miles

6. What would be the typical origin when visiting Sebring?

   1200 to 2400 miles

Please return completed surveys to Airport management.
Thank you!

April 2013

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: PENSKE JET, INC

Mailing Address: 162 OLD CHURCHMANS RD
NEW CASTLE DE 19720

Phone Number: 302-328-3867

Point of Contact: JUAN ZAPATA

Email: JUAN.ZAPATA@PENSKECORP.COM

Aircraft/Tail Number: N500PR

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1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff/landings) per year? 20

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? CRJ-200/N500PR - G-150/N501RP, N502RP, N503RP - G-450/N500RP

4. What is your typical stage length and destination when departing Sebring? 1/2 TO 3 HRS

5. What is your typical origin when visiting Sebring (if not based at Airport)? PTK/FLG/JQF

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. REDUCED FUEL OR PAYLOAD

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 6700 WILL BE A GREAT IMPROVEMENT

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? SAME.

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.
NO

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: Cape Clear.

Mailing Address: 380 Hanscomb DR.
BedFord MA.

Phone Number: 508-245.1601

Point of Contact: Doug MacPhail

Email: Flycover@aol.com

Aircraft/Tail Number: N228RE

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1. Do you or your company currently use Sebring Regional Airport? Yes

2. If so, approximately how many aircraft operations (takeoff/landings) per year? 2

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? GIV N228RE

4. What is your typical stage length and destination when departing Sebring? 2hrs+45min 1100 N.M. KBED

5. What is your typical origin when visiting Sebring (if not based at Airport)? KBED

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. NO

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? NONE

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? unknown.

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.
N/A.

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: SPIRIT JETS LLC.

Mailing Address: 18260 EDISON AVE CHESTERFIELD MO. 63005

Phone Number: 205-821-5897 cell Business 636-735-2222

Point of Contact:

Email: [illegible]@SPIRITJETS.COM

Aircraft/Tail Number: N557ST

1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff/landings) per year? 3

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? LR-60 N557ST

4. What is your typical stage length and destination when departing Sebring? KANSAS

5. What is your typical origin when visiting Sebring (if not based at Airport)? ST. LOUIS KANSAS

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. PART 135 + TAKEOFF LENGTHS

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1,000' +

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? SAME

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.
N/A

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: Fant Aircraft Enterprises

Mailing Address: 8402 N Elms
Houston, TX

Phone Number: 713-412-7821

Point of Contact: Joel Hering

Email: jhering@nps.cc

Aircraft/Tail Number: N22AX

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1. Do you or your company currently use Sebring Regional Airport? yes

2. If so, approximately how many aircraft operations (takeoff/landings) per year? 4

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? Falcon 10 N425JR, Lear 45 N22AX

4. What is your typical stage length and destination when departing Sebring? 5,000

5. What is your typical origin when visiting Sebring (if not based at Airport)? HOU

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. No

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? None

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? none

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.
none

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: Balla Air

Mailing Address: 200 E Callaway Blvd
Biloxi MS 39587

Phone Number: 1-800-549-7327

Point of Contact: Janet Rushing

Email: ~~www.~~ BallaAiR @ gomail.web

Aircraft/Tail Number: N777BA

1. Do you or your company currently use Sebring Regional Airport? yes

2. If so, approximately how many aircraft operations (takeoff/landings) per year? 25

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? Falcon 7X, Gulfstream 6

4. What is your typical stage length and destination when departing Sebring? ___

5. What is your typical origin when visiting Sebring (if not based at Airport)? ___

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. yes, fuel load

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? ___

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? ___

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: EXECUTIVE AIRSHARE

Mailing Address: 1001 NW LOU HOLLAND DR.
KANSAS CITY, MO 64119

Phone Number: 816 221 7200

Point of Contact: BOB TAYLOR

Email:

Aircraft/Tail Number: 394AS

1. Do you or your company currently use Sebring Regional Airport? YES

2. If so, approximately how many aircraft operations (takeoff/landings) per year? 4

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? N394AS PHENOM 300

4. What is your typical stage length and destination when departing Sebring? 3HRS FTW

5. What is your typical origin when visiting Sebring (if not based at Airport)? FTW

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. HOT TEMPS RESTRICT US ON SHORT RUNWAYS

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 2,000 ft

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 6

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. NO

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: Schaefer Trans, Inc

Mailing Address: 510 Plaza Dr.
Ste 1810

Phone Number: 954-895-8585

Point of Contact: Andre Krawentek

Email: Andre.Krawentek@schaefertransinc.com

Aircraft/Tail Number: ____________________

SCHAEFER TRANS INC.

ANDRE KRAWENTEK
CARGO MANAGER SOUTH EASTERN REGION U.S.A.

510 PLAZA DRIVE, SUITE 1810 - COLLEGE PARK, GA 30349
TEL: (404) 209-0200, 0202 FAX: (404) 209-0010
CELL: 1-954-895-8585
E-mail: a.krawentek@schaefertransinc.com

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1. Do you or your company currently use Sebring Regional Airport? no

2. If so, approximately how many aircraft operations (takeoff/landings) per year? no

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? if runway length was extended, Boeing charter operations would be possible

4. What is your typical stage length and destination when departing Sebring? Europe

5. What is your typical origin when visiting Sebring (if not based at Airport)? Europe

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. yes, we need a longer runway to utilize our Boeing charters

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? Minimum 2000' total

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 2-4

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.
____

6/22/12

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: GAR AVIATION, LTD.

Mailing Address: 7930 AIRPORT BLVD.
HOUSTON, TEXAS 77061

Phone Number: 281-450-6896

Point of Contact: SAME

Email: GARAVIATION@COMCAST.NET

Aircraft/Tail Number: N74GR

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1. Do you or your company currently use Sebring Regional Airport? yes
2. If so, approximately how many aircraft operations (takeoff/landings) per year? >15
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? CL600 N74GR
   C-501 N74HR
4. What is your typical stage length and destination when departing Sebring? 800NM
5. What is your typical origin when visiting Sebring (if not based at Airport)? RACE TRACK
6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. NO
7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 2000 TAKEOFF WEIGHT / FUEL LOAD
8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 35
9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.
   NO

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: FLEXJET

Mailing Address: 3400 Waterview Pkwy Ste 400
Richardson TX 75080

Phone Number: ~~214~~ 972 720 2400

Point of Contact:

Email:

Aircraft/Tail Number: N623FX

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1. Do you or your company currently use Sebring Regional Airport? YES
2. If so, approximately how many aircraft operations (takeoff/landings) per year? 6-10
3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? LEAR / CHALLENGERS
4. What is your typical stage length and destination when departing Sebring? 1HR
5. What is your typical origin when visiting Sebring (if not based at Airport)? KADS

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. YES - WHEN HOT (> 30°C) or Wet

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? 1700ft

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? 6-10 Conditions permitting

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available.
Challenger 300 + 604/605

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Name / Title: GIACOMO MATTIOLI - SCUDERIA CORSA TEAM OWNER

Phone Number: 310-275 4400

Email:

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1. Does the current length (5,224') and un-grooved surface of Runway 18-36 restrict your use of the Airport? Does Runway Length limit aircraft type and/or reduce fuel capacity, payload, or stage length? If so, please provide a brief explanation.

   YES IT DOES, BECAUSE OF PAYLOADS LIMITATIONS

2. How much additional runway length, if any, would you need to accommodate your aircraft and operations?

   6,700 FEET

3. If Runway 18-36 was extended to 6,700 feet, how many operations per year would you expect to make at Sebring Regional Airport? 4

4. What types of aircraft are would be used operating to or from Sebring? BOMBARDIER

5. What would be the typical stage length when departing Sebring? 3 DAYS

6. What would be the typical origin when visiting Sebring? LOS ANGELES

Please return completed surveys to Airport management.
Thank you!

April 2013

RUNWAY 18-36 EXTENSION JUSTIFICATION SURVEY

Aircraft Activity and Characteristics Data
Sebring Regional Airport

Company/Name: Great Atlantic Aeroplane Corp. Ronald Owen

Mailing Address: 9700 Payne Rd.

Phone Number: 863-471-9817

Point of Contact: Email.

Email: flywithowen@gmail.com

Aircraft/Tail Number: Cessna 310R / AirCam / Navion

1. Do you or your company currently use Sebring Regional Airport? yes.

2. If so, approximately how many aircraft operations (takeoff/landings) per year? 200

3. What type of aircraft do you use when operating to or from Sebring (please include type and "N" number)? Cessna 310R N9LD / AirCam 6980A

4. What is your typical stage length and destination when departing Sebring? 200-500 miles Keys / Mountains

5. What is your typical origin when visiting Sebring (if not based at Airport)?

6. Does the current length (5,224') of Runway 18-36 restrict your use of the Airport, such as restricted aircraft type and/or reduced fuel, payload, or stage length? If so, please provide a brief explanation. No, But the increase in runway length would provide added Safety.

7. How much additional runway length, if any, would you need to accommodate your aircraft and operations? None, but it provides better margin safety

8. If Runway 18-36 was extended to 6,700 feet, how many additional operations per year would you expect to make at Sebring Regional Airport? None

9. If Runway 18-36 was extended to 6,700 feet, would you plan to use other larger aircraft for your operations to/from Sebring? If so, please list type and "N" number, if available. Future Jet Aircraft purchase.

Appendix D. 2017 Apron Justification

Technical note

Project:	Sebring Regional Airport	**To:**	Marisol Elliott
Subject:	Apron Justification	**From:**	Anna Marron
Date:	March 15, 2017	**cc:**	Miguel Martinez, Mike Willingham, Craig Sucich

1. Executive Summary

The ultimate goal of the groups and agencies involved in operating and managing an airport is to best serve the needs of current and future customers. Critical to meeting this objective is having the appropriate facilities to accommodate stakeholders needs. The Sebring Airport Authority is enthusiastic to proceed with the rehabilitation of the terminal apron pavement at Sebring Regional Airport (SEF) in order to meet the needs of its users. The existing concrete Apron pavement was constructed during World War II, which make the pavement 76 years old. It has a PCI value of 22 and has clearly exceeded its design life with extensive cracking and spalling distinctly visible. This has created FOD and safety concerns for airport users.

The analysis contained in this report utilizes industry standard guidance provided by ACRP Report 113: Guidebook on General Aviation Facility Planning to determine how much parking capacity is necessary at SEF. This analysis revealed that close to the full apron is recommended for design and rehabilitation due to existing operational requirements and parking needs.

Operational layout and existing parking demand calculations were completed to determine that the airport currently has an existing need for 40 parking positions, as well as large aircraft parking areas.

- A total proposed rehab area of 863,000 square feet is proposed in the apron area
- 301,500 square feet the aforementioned area is proposed to be designated as aircraft parking areas, to include GA Based Aircraft, GA Itinerant Aircraft, and Large Aircraft parking.
- The remaining 561,500 square feet of proposed apron rehabilitation will include Group II aircraft taxilane operating areas.

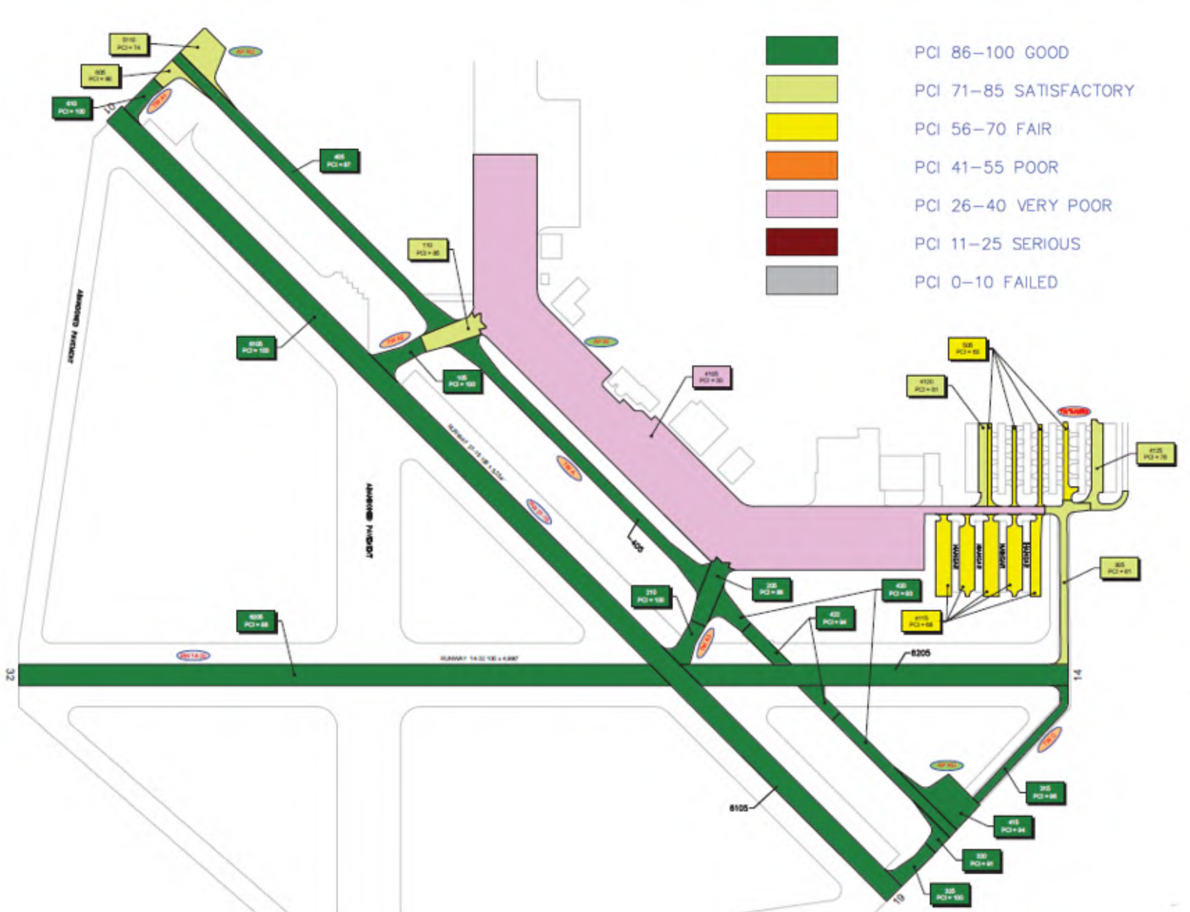
As previously stated in pre-application documentation, SAA has an operational need for all of the existing apron pavement and does not want to lose the operational capacity, either through continued deterioration of the pavement or removal of available pavement. During preliminary design, it is also anticipated that the design team will evaluate the rehabilitation alternatives and also aims to address the “direct access” issues associated with the apron. Based on this analysis, the design team will present a cost effective solution that addresses the FAA’s concerns, while meeting SAA’s operational needs. This analysis is intended to support FAA funding of the evaluation and rehab design for the entire apron. It is anticipated that the construction would then be divided into bid packages sized to meet available funding.

2. Background

2.1. Existing Airport Pavement Condition

The existing concrete pavement was constructed during World War II, which makes the pavement 76 years old. According to the FDOT Pavement Condition Index (PCI)study the apron has a PCI value of 30 and has clearly exceeded its design life with extensive cracking and spalling distinctly visible. A graphical depiction of the Airport 2013 PCI study is provided in **Figure 1.** As noted in the recent pre-application, the apron pavement is a constant safety issue due to the amount of FOD the crumbling pavement produces. Pieces of pavement are likely to be dislodged anywhere on the apron at any time and safe operation requires constant vigilance on the part of airport operations staff. There is no question that all of the apron pavement is in poor condition and desperately needs to be rehabbed.

Figure 1. 2013 SEF PCI Report



Source: FDOT, 2013

2.2. Existing Parking Layout

Figure 2 shows areas of the apron that are designated for operational use, large aircraft parking, and typical transient aircraft parking. Since it is an open apron, aircraft can taxi without specific guidance to anywhere on the apron. However, there are typical taxilane routes and designated areas for parking and/or fuelling, which are depicted on the exhibit.

Figure 2. Existing Parking Layout

There are no exclusive agreements or tenant leases for any of the above highlighted apron areas. It is completely open to the public. Sebring Airport Authority operates the FBO and controls parking. For the large aircraft parking, there are typically 2-3 narrow body commercial aircraft (B737, B727) parked on the apron at any given time. These aircraft remain on the apron for 3-4 weeks before being moved into the MRO hangar. Once work has been completed, they leave and other aircraft arrive. The northern portion and central portions of the apron is reserved for large aircraft parking and self-fuelling operations. Additionally, tenants such as TECNAM and Global Engine Repair frequently utilize the northern and central portions of the apron for overflow aircraft storage when needed. The middle portion of the apron is the primary transient aircraft parking area. The southern portion of the apron is reserved for based aircraft and overflow transient aircraft parking.

2.2.1. Direct Access issues

The existing apron connectors are not compliant with 150/5300-13A, and taxiway design best practices. Design will need to be completed in the design process in order to eliminate the “direct access” safety issues from the apron. The A2 and A3 connectors will need to be modified or removed to change the current unsafe apron to runway access. Figure 3 depicts the taxiway geometry which will require reconfiguration.

Figure 3. Taxiway A3 & A2

2.2.2. Special Events & Parking

Sebring Regional Airport has unique peaking characteristics due to the legendary raceway events and aviation events. During the year, there are a number of events at SEF and Sebring International Raceway that bring in a large number of transient aircraft, which completely fill the available parking on the apron. During these events, apron utilization is extremely high with some aircraft bring repositioned on in overflow areas on abandoned runway pavement on the other side of the airfield.

Events at Sebring Regional Airport occur throughout the year and include:

January
- Sport Pilot Expo week
- Hoosier SCCA Hoosier Super Tour at Sebring

February
- IMSA Winter Testing at the raceway
- Indy Car team testing Tuesday
- Porsche Club of America event

March
- 12-Hours of Sebring race week
- SVRA Historic race and Trans-Am weekend

May
- International Aerobatic Club (IAC) competition

July
- Formula & Automobile Racing Association event

October
- National Auto Sport Association event
- Indy Car team testing

November
- International Aerobatic Club (IAC) competition
- Indy Car team testing

December
- Indy Car team testing

For the raceway events and team testing, large corporate aircraft and small commercial aircraft ferry drivers, teams, and equipment to the facility. In addition, spectators, drivers, and owners fly their own aircraft, which add to the operational and parking demands. Also, for aviation based events like the Sport Pilot Expo, a large area of the apron is utilized for event and static displays, further reducing apron capacity

2.2.2.1. 2016 - 12 Hours of Sebring Race

As an example, the 2016 12 hours of Sebring Race Week event was analysed to establish a scope of the peaking characteristics at SEF. Due to the lack of a tower at SEF Flight plan data from Flightwise.com was analysed for a 10-day period from March 10, 2016 to March 20, 2016 in order to study the race week peak time arrival and departure activity. It is important to note that flight wise data only captures those operations which filed flight plans. Operations which occurred without filing a flight plan are not captured in this data.

- Of the operators who filed flight plans approximately 20 percent of the Group II and larger operations for the year of 2016 (72 of 361 total operations documented) occurred in the time frame between March 10, 2016 to March 20, 2016.

- 12 percent of total flight wise documented operations for the year (154 of 1225 documented operations) occurred during the Sebring race week 10-day observation period.

2.2.2.2. Sport Pilot Expo Events

The Sebring Sport Pilot Expo is a 4-day event held each January. This event is internationally known and billed as “The place to see, try, fly, and buy” sport aircraft. This event each year brings together vendors, operators, and enthusiasts of Light Sport Aircraft (LSA’s) and has recently added Unmanned Aerial Vehicle components to its schedule. The expo has a robust four-day schedule which provides vendor exhibitions, forums, and workshops, competitions, and prizes. In 2016 there were over 18,000 attendees to this four-day event. Several of the Sport Aviation events within the last 10 years have come close to the airport having to stop accepting arrivals due to a lack of aircraft parking available.

During this high traffic event, a significant portion of the apron is occupied by exhibitor and vendor spaces, static displays, with the rest of the apron being utilized for fly in guests of the event. In this event every portion of the existing apron is utilized for parking and exhibition space. With overflow parking utilizing closed portions of Runway 32-14 and abandoned runway pavements. Typically, most if not all of the available aircraft parking areas fill up at peak times during the event. **Figure 4** depicts the 2017 exhibition and parking layout.

2.2.2.3. Weekly fly in Activity

Sebring is an attractive location for breakfast and lunch fly in event’s. There is a significant amount of informal groups which fly in for breakfast and lunch activities. On peak fly in days, there can be 20-40 aircraft on the apron. Some frequent groups which utilize the facilities are the following:

- Venice Lunch Brunch – Typically 15-40 aircraft
- Wednesday Morning Breakfast Crew – Averages 15 aircraft
- Misc. informal weekend fly ins range from 25-50 aircraft.
-

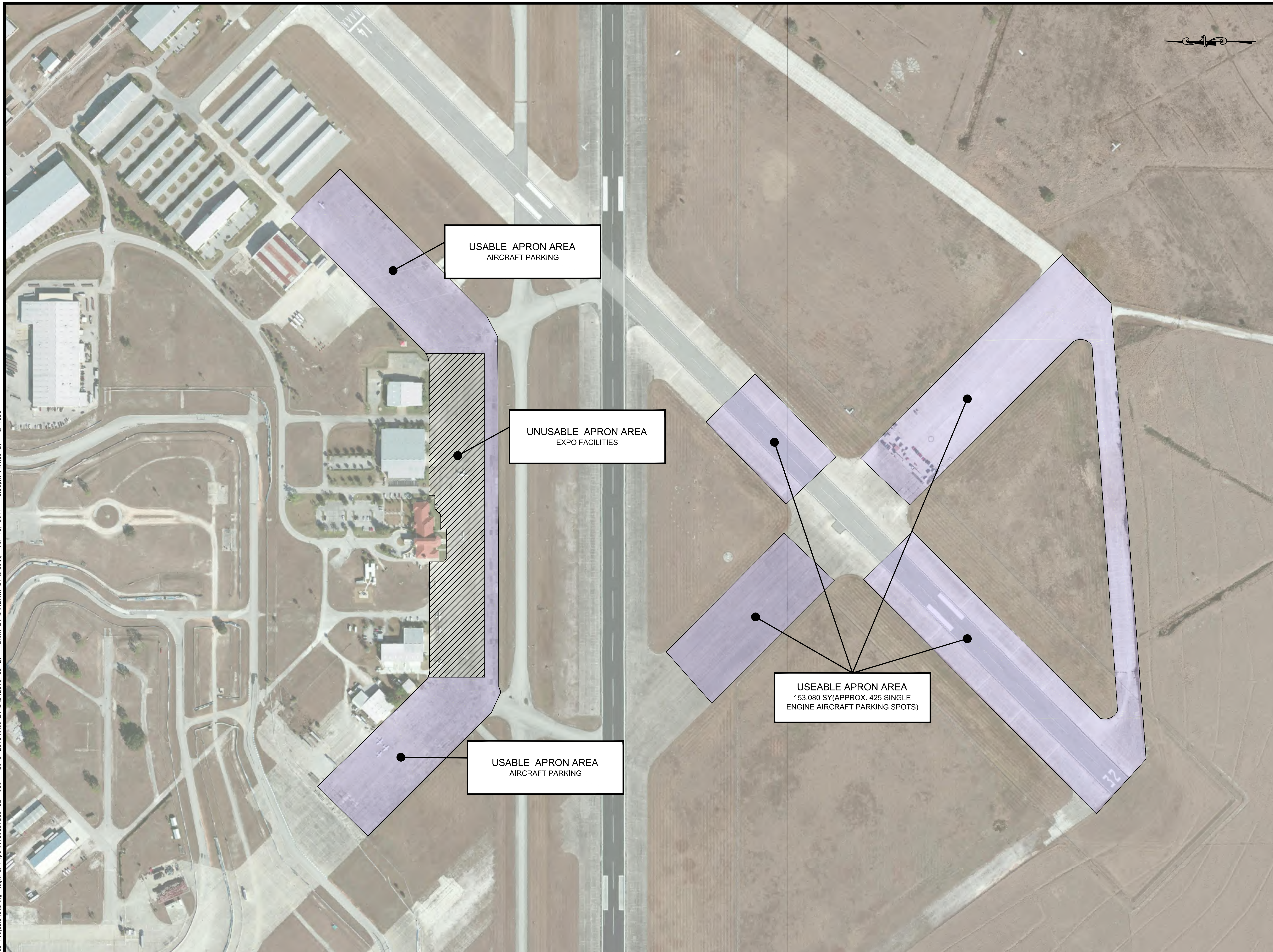
3. Parking Requirements Analysis

ACRP Report 113: Guidebook on General Aviation Facility Planning provides excellent metrics for appropriately sizing and placing General Aviation (GA) parking facilities. It is important to size and lay out an apron appropriately so that capacity is not limited and safety is not compromised. The following sections utilize guidance provided in ACRP Report 113 in order to calculate the appropriate level or apron rehabilitation necessary at SEF.

3.1. Proposed Apron Configuration

Due to apron demand, access locations, and an effort to reduce head to head taxi scenarios, it is proposed that the apron utilize a combination of taxilanes on all sides style for some areas, and dual access taxiway system in others. Creating a free flow traffic rotation assures that pilots unfamiliar with the airport will not encounter issues with dead end taxilanes. It is proposed that the centralized and southern apron areas of utilize a centralized nested area of tie down parking positions. **Figure 5** depicts a sample layout for each of the aforementioned apron styles.

J:\05_Projects\Sebring Regional Airport\100037853_SEF_GEC - 2013-2018\Misc Exhibits\2016-05-27 - Event Exhibit\Event Exhibit.dwg Mar 15, 2017 - 3:35pm Plotted By: morr4680



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KEY MAP:

DRAWING SCALE:

0 75' 150' 300'

SCALE IN FEET

PROJECT NAME:

USEABLE EVENT AREA

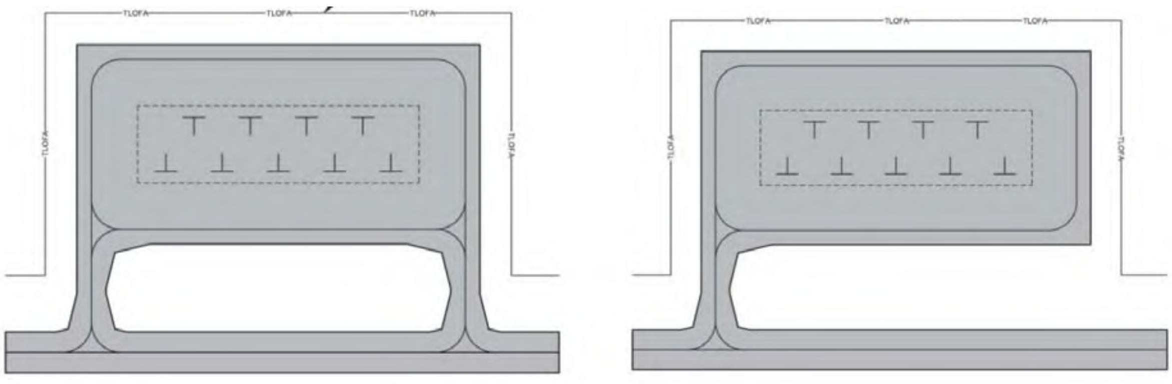
SHEET TITLE:

APRON AND PARKING EXHIBIT

SHEET NO.

FIGURE 4

Figure 5. Proposed Apron Configurations



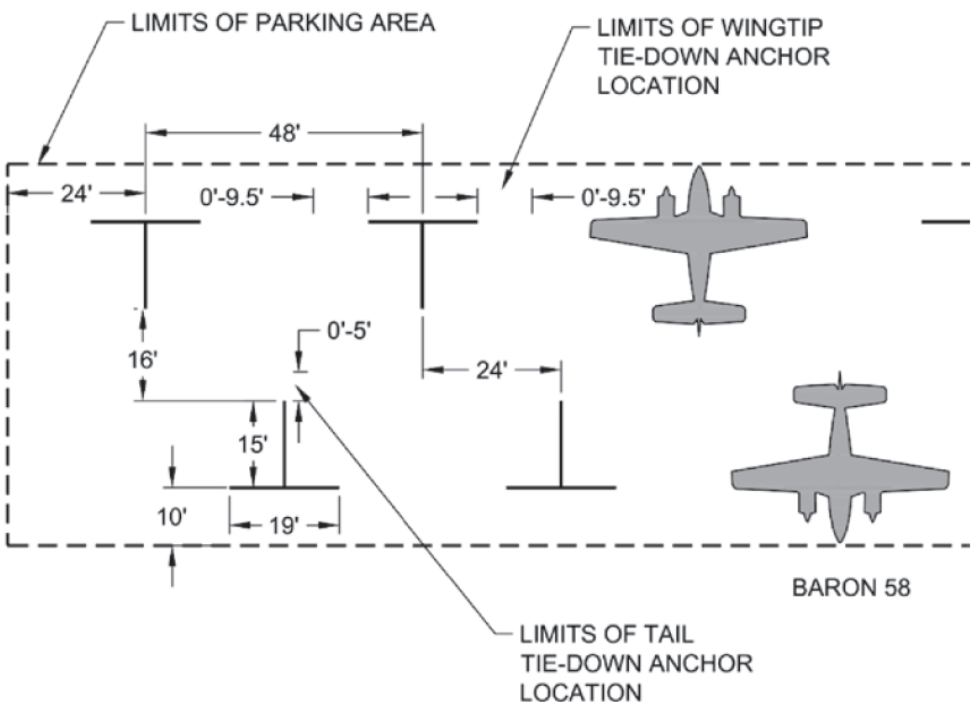
A. Dual Access Apron Layout **B. Taxilanes on All Sides Layout**

Source: ACRP Report 113 Guidebook on General Aviation Facility Planning, Transportation Research Board, 2014

3.2. Markings & Tie Towns

The Beech Baron 58 was studied as an example aircraft in ACRP Report # 113, and it was determined that it the aircraft serves as a good baseline for planning apron facilities at General Aviation Airports such as Sebring. The T-Layout for the Barron 58 depicted in **Figure 6** ensures flexibility in the design for both smaller and larger aircraft parking scenarios. This T-layout will serve as the basis any proposed apron layout contained within this report.

Figure 6. Proposed Marking & Tie Down Layout

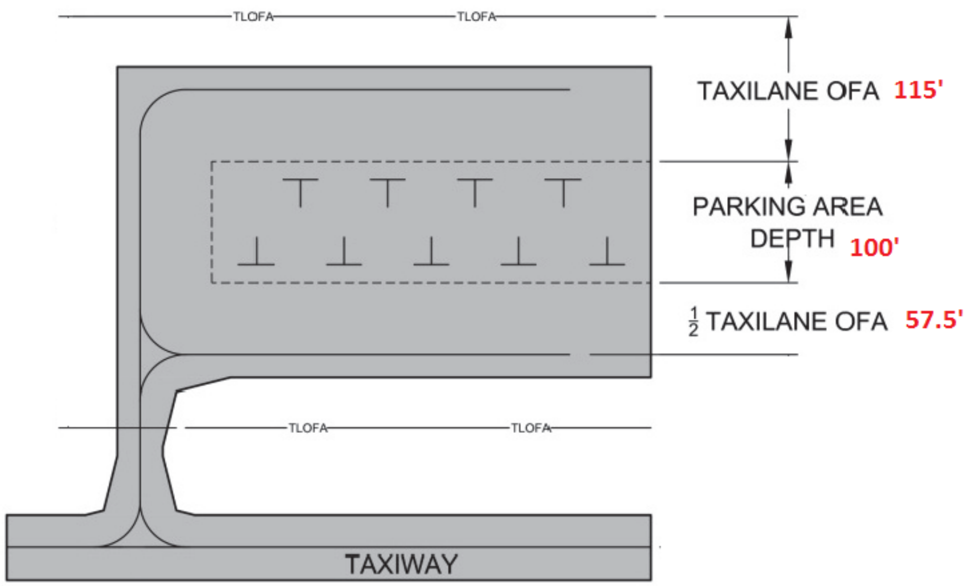


Source: ACRP Report 113: Guidebook on General Aviation Facility Planning, 2014

3.2.1. Parking Area Depth

It is important that the depth of the nested parking area be sized appropriately in order to be flexible enough to accommodate larger aircraft. This is especially the case at SEF during peak times where a significant amount of jet traffic is parked on the apron. In these peak times it is reasonable to expect Group II aircraft which are longer than 75 feet will be parked on the apron. For example, the Bombardier Challenger 600 which has an overall length of 88 feet has been documented at each year at Sebring during the Race Week events in early march. With a parking area depth of 100 feet, SEF will be able to safely accommodate 100 percent of Group II aircraft within parking areas, while maintaining unobstructed taxilane OFA clearances for operating aircraft on adjacent taxilanes. **Figure 7** depicts the proposed overall parking area depth.

Figure 7. Overall Apron Depth Configuration



Source: ACRP Report 113 Guidebook on General Aviation Facility Planning, Transportation Research Board, 2014, Atkins Analysis 2017

3.3. Parking Area Size

ACRP Report 113 – Guidebook on General Aviation Facility Planning notes that there are multiple ways to calculate the size of GA apron required. This analysis utilizes the 2017 FAA TAF to calculate the number of tie down parking positions needed based on guidance and metrics provided in the guidebook. The total number of parking positions required to meet the existing needs of both transient and based aircraft at SEF has been calculated to be 45 positions. The calculation process for the number of parking positions required is outlined in the following sections.

3.3.1. SEF Operations

With no active control tower located at SEF, it is difficult to compose accurate operational information. SEF Airport Master Plan, and it's associated operational research and forecasts is scheduled to be updated this fiscal year. The forecasts provided in the previous AMPU is considered to be outdated at this time. Therefore, this analysis will utilize the Federal Aviation Administration Terminal Area Forecast. The analysis provided in this technical note will focus solely existing apron needs based on the operational data provided in the 2017 TAF. It is anticipated that future apron needs will be analyzed in the 2017 AMPU update process.

The FAA publishes an annual Terminal Area Forecast (TAF) for each airport listed in the National Plan of Integrated Airport Systems (NPIAS); however, at the present time (2017), the FAA does not have a suitable or realistic forecast for SEF, but rather projects no operational growth at the airfield in the future. Table 1 outlines the current FAA TAF for 2016 at SEF.

Table 1. FAA TAF

Year	Itinerant			Local	Total Operations	Based Aircraft
	General Aviation	Military	Total Itinerant	General Aviation		
2012	58,550	400	58,950	44,137	103,087	49
2013	58,550	400	58,950	44,137	103,087	53
2014	58,550	400	58,950	44,137	103,087	71
2015	58,550	400	58,950	44,137	103,087	61
2016	58,550	400	58,950	44,137	103,087	61

Source: FAA Terminal Area Forecast dated January 2017, Prepared by: Atkins, 2017.

3.3.2. Transient Positions

A transient apron and its associated parking positions is typically a higher activity, lower density apron where aircraft do not stay for long periods of time. These aprons have high turnover with various size aircraft ranging from small single-engine piston to typically medium-sized business jets. It is assumed that most if not all of transient operations will be housed on apron pavement. This analysis will utilize the Itinerant operations FAA TAF data for SEF in order to calculate the Transient Position Needs.

Transient Parking Positions Required

ACRP Report 113 recommends the following metrics to calculate the number of Transient Parking Positions:

(X / 2 * T) 365 * P = Number of Transient Parking Positions

X = number of operations
T = percent of operations that are transient (determined by FAA TAF & Observational breakdown)
P = percent of transient aircraft that are parked on the apron at the same time (determined by observations)

(X) Operations Per Aircraft Type

Given the range of types of transient aircraft which operate at SEF, it is important to note that not all parking positions are the same size. Therefore, itinerant operations provided in the FAA are further broken down into Types of Transient Aircraft, and the operations were assigned percentages according to flight plan data provided by Flightwise.com and airport observations. Table 2 outlines this breakdown:

Table 2. Transient Operations by Aircraft Type

Aircraft Type	Percent of Operations	Operations
Single Engine Piston (SEP)	77%	45,392
Multi Engine Piston (MEP)	15%	8,843
Jet	7%	4,127
Rotorcraft	1%	590
Total	**100%**	**58,950**

Source: Atkins Analysis 2017.

(P) Factoring Percent of Transient Aircraft Parked on the Apron at the Same Time

The equation for required transient positions provided ACRP Report 113 utilizes an additional adjustment factor to adjust for times or peaking events at which there may be higher demand for apron facilities at SEF. The guidance utilizes standard rule of thumb percentage of 40% in order to forecast apron needs. For the purposes of this analysis that rule of thumb value was utilized for most aircraft types. Jet traffic occupancy was increased to 70 percent in order to express the significant increases in apron utilization by jet aircraft during special events at SEF, or the Raceway.

Table 3. Apron Occupancy

Aircraft Type	Percent Occupying the Apron at the Same Time
Single Engine Piston (SEP)	40%
Multi Engine Piston (MEP)	40%
Jet	70%
Rotorcraft	40%

Source: ACRP Report 113 2014, Atkins Analysis 2017

(EAF) – Equivalent Adjustment Factor

Given the range of types of transient aircraft which operate at SEF, it is important to note that not all parking positions are the same size. Further, as apron space requirements for the aircraft types outlined in Table 2 vary significantly. To adjust for aircraft size variations ARCP Report 113 recommends the weighting factors listed in **Table 4,** be added to the Transient Positions calculations outlined in this section in order to account for additional area required to accommodate aircraft of varying sizes.

Table 4. Equivalent Tie Down Adjustment Factor

Aircraft Type (1 Parking Position)	Equivalent -Tie Down Positions (Barron 58)
Single Engine Piston (SEP)	1
Multi Engine Piston (MEP)	2.5
Jet	3
Rotorcraft	2

Source: ACRP Report 113, 2014

Based on the analysis outlined in this section, the total number of required transient positions is anticipated to be 21, and equivalent positions required for each aircraft type are listed in **Table 5.**

Table 5. Full Required Parking Positions Calculations

Aircraft Type	Itinerant Airport Operations (X)	Percent of Operations (T)	Percent Occupancy (P)	Equivalent Adjustment Factor (EAF)	Required Parking Positions*
Single Engine Piston (SEP)	58,950	77%	40%	1	10
Multi Engine Piston (MEP)		15%	40%	2.5	5
Jet		7%	70%	3	5
Rotorcraft		1%	30%	2	1
Total Itinerant Positions Required:					21

Source: ACRP Report #113 2014, Atkins Analysis 2017.

**Note: Required parking positions = ((X / 2 x T) 365 x P) x EAF*

3.3.3. Based Aircraft Positions

Within an apron analysis apron space for based aircraft also needs to be determined. A based apron is usually a lower activity, higher density apron where aircraft are stored long term. These aprons have low turnover with similar size and type of aircraft, usually small single-engine piston and small twin engine piston. Each airport is different in the number of based aircraft stored on the apron. Typically, the majority of based aircraft are stored in aircraft hangars, to include most if not all Jets.

In order to calculate the based aircraft positions required the Airport 5010 Master Record provides the based aircraft total, and the based aircraft broken up into aircraft type. Then the proposed parking positions is then calculated using this data and metrics provided in ACRP Report 113, Guidebook on Airport Facility Planning. ACRP Report 113 suggests that the number of based aircraft which require apron parking spaces should be between 10% and 25% of based aircraft. This percentage of aircraft housed on the apron can vary significantly according to the type of aircraft, for example large expensive jets are most frequently, if not always kept in hangar facilities. Additionally, the amount of available hangar space can also impact the percentage of aircraft stored on an apron. At SEF, currently all hangar space is currently leased, with sig

For this the purposes of this analysis a basic planning metric of 25% was utilized to express the apron requirements for Based Single Engine Piston, Multi Engine Piston and Rotorcraft, while apron kept Based Jets was anticipated to be 1%, or for the purposes of this exercise, zero.

One final adjustment was then made to the apron space requirements for the varying aircraft sizes. This adjustment was made utilizing the Equivalent Tie Down Adjustment Factors outlined in **Table 3**. The based aircraft analysis concluded that 24 equivalent tie downs are required to support based aircraft at SEF. Based aircraft equivalent tie down calculations are outlined in **Table 6.**

Table 6. Based Aircraft Parking Requirements

Aircraft Type	Based Aircraft	Percent of Storage Demand	Equivalent Adjustment Factor	Required Parking Positions
Single Engine Piston (SEP)	59	25%	1	15
Multi Engine Piston (MEP)	12	25%	2.5	8
Jet	1	1%	3	0
Rotorcraft	4	25%	2	2
			Total Based Aircraft Positions Required:	24

Source: ACRP Report #113 2014, Atkins Analysis 2017.

3.4. Special Considerations

Sebring has several apron operating conditions and aircraft parking needs which cannot be accounted for using ACRP guidance. The following sections outline SEF's large aircraft parking areas, and a proposed FBO drop off area.

3.4.1. Large Aircraft Parking

Currently there is a large aircraft MRO and Salvage company which utilizes a significant amount of apron area in order to tear down, salvage or repair older aircraft such as the Boeing 727 and Boeing 737. These aircraft are typically stored on the northern 1/3 of the apron, however they are stored elsewhere on the apron as necessary. At the writing of this report, there are currently five B727 aircraft on the ramp at SEF in varying phases of teardown activity, and one 737 under repair.

It is anticipated that large aircraft parking will increase in the upcoming months, with the addition of an additional 737 within the next few weeks.

These aircraft will remain on the apron for 3-4 weeks before being moved into the MRO hangar. Once work has been completed, they leave and other aircraft arrive. The operator does not lease any specific apron areas, and relocates aircraft according to airport apron requirements or special events. These aircraft require a significant amount of apron area and therefore need to be factored into the apron area requirements. The number of large aircraft parked on the apron at SEF is anticipated to continue through the foreseeable future, and therefore these aircraft were depicted on the proposed apron layout.

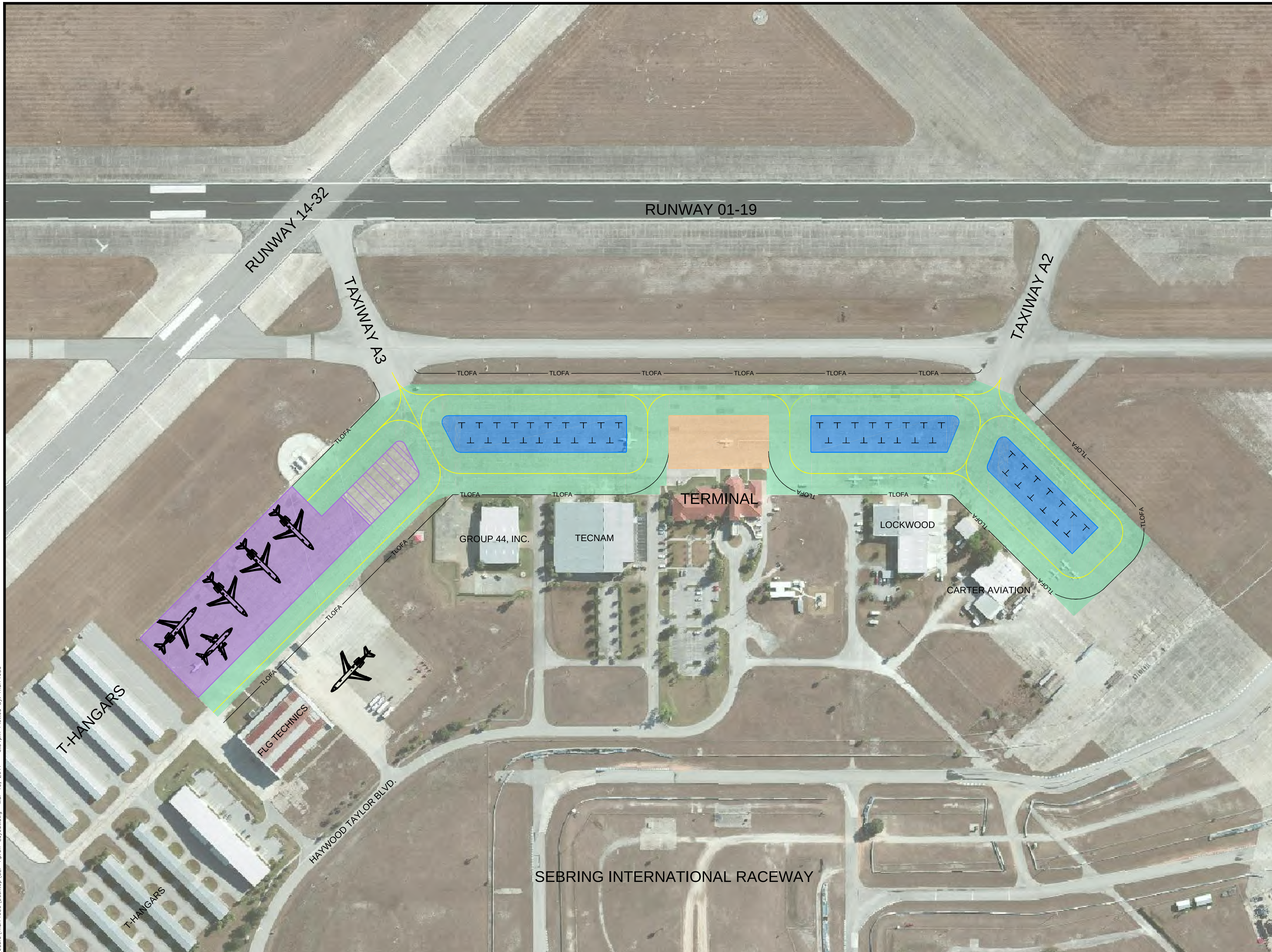
3.4.2. FBO Drop Off Area

A drop off area directly in front of the FBO facilities is an important component of the proposed layout, allowing aircraft to quickly access FBO facilities in order to drop off or pick up passengers, or utilize the FBO facilities or services. These type of quick turn activities typically do not opt to tie down aircraft and therefore no spaces are designated in this area.

3.5. Proposed Apron Layout

The proposed apron layout which was planned utilizing ACRP Report 113 guidance is depicted in **Figure 8**.

- Depicted in Blue are the forecasted parking areas. These three areas combined provide parking positions for 47 aircraft. This is 7 more than required in the forecast presented within this report. This additional 7 parking spaces will provide for future growth in operations and based aircraft.
- Depicted in orange is a 140 foot by 270 foot FBO drop off area to allow aircraft quick access to FBO facilities.
- Depicted in purple is the large aircraft parking area. The area adjacent to the south of the large aircraft area, hatched with purple stripes is critical for large aircraft manoeuvring and repositioning.
- All remaining areas, hatched in green represent the required taxilane infrastructure to support the updated parking layout. These proposed taxilanes are designed to support ADG II, TDG 3 aircraft, using ACRP Report 113 as design guidance.



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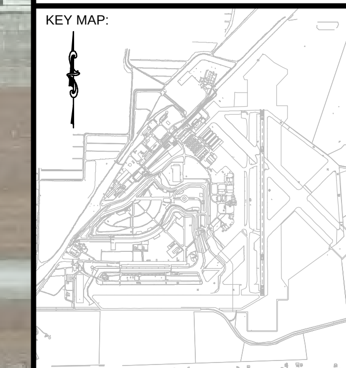
KEY MAP:



DRAWING SCALE:

0 125' 250' 500'

SCALE IN FEET

PROJECT NAME:

APRON REHABILITATION JUSTIFICATION ANALYSIS

SHEET TITLE:

PROPOSED APRON LAYOUT

SHEET NO.

EX-7

C:\Users\morr4680\Desktop\SEF-Apron-Layout.dwg Mar 15, 2017 – 3:54pm Plotted By: morr4680

Appendix E. Capital Improvement Plan

E.1.

SEBRING REGIONAL AIRPORT (SEF)
SEBRING, FLORIDA

CONCEPTUAL ESTIMATE SUMMARY

AIRFIELD PROJECTS - SHORT-TERM (0-5 YEAR) CIP

			FY 2020			*Escalated to Program Year**		
Project	*Program Year*	*Project Description*	*Total Construction + Contingency + RI/QA Testing*	*Total Design Service Fees*	*Total Program 2020 Budget - Project Total*	*Total Construction + Contingency + RI/QA Testing*	*Total Design Service Fees*	*Total Program Year Budget - Project Total*
A1	**Short-Term**	**Taxiway A4 Realignment**	**$ 681,100**	**$ 75,700**	**$ 756,800**	**$ 698,100**	**$ 77,600**	**$ 775,700**
A1.1	2021	Construct New Taxiway A4 Between Taxiway A and Runway 1-19	$ 681,100	$ 75,700	$ 756,800	$ 698,100	$ 77,600	$ 775,700
A2	**Short-Term**	**Taxiway C Excess Pavement Removal**	**$ 1,184,700**	**$ 131,600**	**$ 1,316,300**	**$ 1,244,700**	**$ 138,300**	**$ 1,383,000**
A2.1	2022	Remove Excess Pavement on Taxiway C	$ 1,184,700	$ 131,600	$ 1,316,300	$ 1,244,700	$ 138,300	$ 1,383,000
TOTAL - AIRFIELD - SHORT-TERM (0-5 YEAR) CIP PROJECTS:			***$ 1,865,800***	***$ 207,300***	***$ 2,073,100***	***$ 1,942,800***	***$ 215,900***	***$ 2,158,700***

* All totals are rounded. Escalation has been compounded to program year at a rate of 2.5% per year from FY 2020.

SEBRING REGIONAL AIRPORT (SEF) - CIP

A1.1 - Construct New Taxiway A4 Between Taxiway A and Runway 1-19

SHORT-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of a new 325 ft. taxiway (approx. 24,200 SF), to connect Taxiway A and Runway 1-19. Pavement section includes: 12” compacted subgrade, 12" limerock base, and 4" hot mix asphalt surface course. Project includes marking, lighting, and signage.

Program Year: **2021**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 22,700.00	$ 22,700
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 4,500.00	$ 4,500
3	C-105	Mobilization	1	LS	$ 22,700.00	$ 22,700
4	P-151	Clearing and Grubbing / Stripping	1.5	AC	$ 14,445.00	$ 21,668
5	P-101	Saw-Cut and Connect to Existing Pavement	600	LF	$ 25.00	$ 15,000
6	P-152	Unclassified Excavation - 12"	900	CY	$ 20.00	$ 18,000
7	P-152	Embankment	2,400	CY	$ 20.00	$ 48,000
8	P-401	Hot Mix Asphalt Surface Course - 4"	630	TN	$ 120.00	$ 75,600
9	P-211	Limerock Base Course - 12"	900	CY	$ 55.00	$ 49,500
10	P-154	Stabilized Subgrade - 12"	2,700	SY	$ 4.00	$ 10,800
11	P-602	Emulsified Asphalt Prime Coat	700	GAL	$ 5.00	$ 3,500
12	P-603	Emulsified Asphalt Tack Coat	400	GAL	$ 5.00	$ 2,000
13	P-620	Taxiway Hold Line Marking	300	LF	$ 2.00	$ 600
14	P-620	Taxiway Edge Line Markings	800	LF	$ 2.00	$ 1,600
15	P-620	Taxiway Center Line Markings	400	LF	$ 2.00	$ 800
16	D-701	Reinforced Concrete Pipe	700	LF	$ 118.00	$ 82,600
17	D-752	Concrete End Sections	4	EA	$ 1,750.00	$ 7,000
18	L-108	No.8 AWG, 5kV, L-824, Type C Cable, Installed in Conduit	4,000	LF	$ 2.00	$ 8,000
19	L-108	No.6 AWG, Solid Bare Counterpoise Wire, Installed Above the Conduit, Including the Connectors/Terminators	2,000	LF	$ 2.00	$ 4,000
20	L-110	Non-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	700	LF	$ 16.00	$ 11,200
21	L-110	Concrete-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	200	LF	$ 86.00	$ 17,200
22	L-108	Copper Clad Steel Sectional Ground Rods with Exothermic Ground Connectors	4	EA	$ 157.00	$ 628
23	L-115	Electrical Handhole	2	EA	$ 950.00	$ 1,900
24	L-110	Electrical Vault Modifications	1	ALLOW	$ 5,000.00	$ 5,000
25	L-125	Taxiway Edge Fixture with Transformer	8	EA	$ 700.00	$ 5,600
26	L-125	Airfield Guidance Sign and Foundation	2	EA	$ 10,100.00	$ 20,200
27	T-905	Topsoil	925	CY	$ 30.00	$ 27,750
28	T-904	Sodding	5,500	SY	$ 3.00	$ 16,500
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 504,500***
29		Design / Permitting Service Fees	15%			$ 75,700
30		Resident Inspection / Quality Assurance Testing	15%			$ 75,700
31		Contingency	20%			$ 100,900
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 756,800***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A2.1 - Remove Excess Pavement on Taxiway C

SHORT-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes demolition of a portion of the existing Taxiway C (approx. 156,560 SF).

Program Year: **2022**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 39,500.00	$ 39,500
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 7,900.00	$ 7,900
3	C-105	Mobilization	1	LS	$ 39,500.00	$ 39,500
4	P-101	Existing Pavement Removal	17,400	SY	$ 25.00	$ 435,000
5	P-152	Unclassified Excavation - 12"	5,800	CY	$ 20.00	$ 116,000
6	T-905	Topsoil (Fill)	6,000	CY	$ 30.00	$ 180,000
7	T-904	Sodding	17,400	SY	$ 3.00	$ 52,200
8	L-100	Electrical Demolition	1	LS	$ 7,500.00	$ 7,500
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 877,600***
9		Design / Permitting Service Fees	15%			$ 131,600
10		Resident Inspection / Quality Assurance Testing	15%			$ 131,600
11		Contingency	20%			$ 175,500
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 1,316,300***

SEBRING REGIONAL AIRPORT (SEF)
SEBRING, FLORIDA

CONCEPTUAL ESTIMATE SUMMARY

AIRFIELD PROJECTS - MEDIUM-TERM (5-10 YEAR) CIP

			FY 2020			*Escalated to Program Year**		
Project	*Program Year*	*Project Description*	*Total Construction + Contingency + RI/QA Testing*	*Total Design Service Fees*	*Total Program 2020 Budget - Project Total*	*Total Construction + Contingency + RI/QA Testing*	*Total Design Service Fees*	*Total Program Year Budget - Project Total*
A3	**Med-Term**	**Runway 14-32 South Partial Parallel Taxiway**	**$ 3,012,500**	**$ 267,800**	**$ 3,280,300**	**$ 3,244,100**	**$ 288,400**	**$ 3,532,500**
A3.1	2023	Construct South Partial Parallel Taxiway to Runway 14-32	$ 3,012,500	$ 267,800	$ 3,280,300	$ 3,244,100	$ 288,400	$ 3,532,500
A4	**Med-Term**	**Runway 1-19 Enhancements**	**$ 42,316,600**	**$ 3,025,500**	**$ 45,342,100**	**$ 47,108,800**	**$ 4,408,400**	**$ 54,424,800**
A4.1	2021	Land Acquisition / Sod Farm Pond Relocation Agreement	$ -	$ -	$ -	$ -	$ -	$ -
A4.2	2021	Runway Extension Justification Study	$ -	$ 40,000	$ 40,000	$ -	$ 43,100	$ 43,100
A4.3	2022	Benefit Cost Analysis (BCA)	$ -	$ 250,000	$ 250,000	$ -	$ 269,200	$ 269,200
A4.4	2023	Conduct Environmental Assessment	$ -	$ 375,000	$ 375,000	$ -	$ 403,800	$ 403,800
A4.5	2026	Rail Relocation	$ 2,700,000	$ 300,000	$ 3,060,000	$ 2,907,600	$ 323,100	$ 3,230,700
A4.6	2027	Runway 1-19 Northward Extension (1,776 LF)	$ 22,960,000	$ 1,700,700	$ 24,660,700	$ 25,343,500	$ 1,877,300	$ 27,220,800
A4.7	2027	Taxiway A Extension	$ 6,563,300	$ 437,600	$ 7,000,900	$ 7,244,700	$ 483,000	$ 7,727,700
A4.8	2027	Relocate Runway 19 PAPI	$ 180,500	$ 20,100	$ 200,600	$ 199,200	$ 22,200	$ 221,400
A4.9	2029	Runway 1-19 Widening to 150' and Rehabilitation of Existing Runway Pavement	$ 12,025,000	$ 801,700	$ 12,826,700	$ 13,605,200	$ 907,000	$ 14,512,200
A4.10	2030	Displace Runway 1 Threshold (866 LF)	$ 407,300	$ 45,300	$ 452,600	$ 496,300	$ 55,200	$ 551,500
A4.11	2030	Relocate Runway 1 PAPI	$ 180,500	$ 20,100	$ 200,600	$ 219,900	$ 24,500	$ 244,400
A5	**Med-Term**	**Runway 1-19 East Full Parallel Taxiway**	**$ 13,624,200**	**$ 908,300**	**$ 14,532,500**	**$ 17,014,800**	**$ 1,134,300**	**$ 18,149,100**
A5.1	2029	Construct East Full Parallel Taxiway to Runway 1-19	$ 13,624,200	$ 908,300	$ 14,532,500	$ 17,014,800	$ 1,134,300	$ 18,149,100
AMPU	**Med-Term**	**Airport Master Plan Update**	**$ -**	**$ 300,000**	**$ 360,000**	**$ -**	**$ 374,700**	**$ 374,700**
AMPU	2029	Master Plan Update	$ -	$ 300,000	$ 360,000	$ -	$ 374,700	$ 374,700
TOTAL - AIRFIELD - MEDIUM-TERM (5-10 YEAR) CIP PROJECTS:			***$ 60,303,300***	***$ 4,984,100***	***$ 65,377,400***	***$ 68,821,500***	***$ 6,205,800***	***$ 76,481,100***

* All totals are rounded. Escalation has been compounded to program year at a rate of 2.5% per year from FY 2020.

SEBRING REGIONAL AIRPORT (SEF) - CIP

A3.1 - Construct South Partial Parallel Taxiway to Runway 14-32

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of a new 1,800 ft. by 40 ft. taxiway (approx. 75,500 SF) to connect to Runway 14-32. Pavement section includes: 12" compacted subgrade, 12" limerock base, and 4" hot mix asphalt surface course. Project includes marking, lighting, and signage.

Program Year: **2023**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 100,500.00	$ 100,500
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 20,100.00	$ 20,100
3	C-105	Mobilization	1	LS	$ 100,500.00	$ 100,500
4	P-151	Clearing and Grubbing / Stripping	9.0	AC	$ 14,445.00	$ 130,005
5	P-101	Saw-Cut and Connect to Existing Pavement	400	LF	$ 25.00	$ 10,000
6	P-101	Existing Pavement Removal	3,500	SY	$ 25.00	$ 87,500
7	P-152	Unclassified Excavation - 12"	12,000	CY	$ 7.00	$ 84,000
8	P-152	Embankment - Assume Fill 3'	22,000	CY	$ 17.00	$ 374,000
9	P-401	Hot Mix Asphalt Surface Course - 4"	1,950	TN	$ 120.00	$ 234,000
10	P-211	Limerock Base Course - 12"	2,800	CY	$ 55.00	$ 154,000
11	P-154	Stabilized Subgrade - 12"	8,400	SY	$ 4.00	$ 33,600
12	P-602	Emulsified Asphalt Prime Coat	2,100	GAL	$ 5.00	$ 10,500
13	P-603	Emulsified Asphalt Tack Coat	1,050	GAL	$ 5.00	$ 5,250
14	P-620	Taxiway Hold Line Marking	400	LF	$ 2.00	$ 800
15	P-620	Taxiway Center Line Markings	2,100	LF	$ 2.00	$ 4,200
16	P-620	Taxiway Edge Line Markings	3,700	LF	$ 2.00	$ 7,400
17	D-701	Reinforced Concrete Pipe	900	LF	$ 220.00	$ 198,000
18	D-752	Stormwater Inlets	6	EA	$ 5,600.00	$ 33,600
19	L-108	No.8 AWG, 5kV, L-824, Type C Cable, Installed in Conduit	22,100	LF	$ 2.00	$ 44,200
20	L-108	No.6 AWG, Solid Bare Counterpoise Wire, Installed Above the Conduit, Including the Connectors/Terminators	11,100	LF	$ 2.00	$ 22,200
21	L-110	Non-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	10,800	LF	$ 16.00	$ 172,800
22	L-110	Concrete-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	300	LF	$ 86.00	$ 25,800
23	L-108	Copper Clad Steel Sectional Ground Rods with Exothermic Ground Connectors	58	EA	$ 157.00	$ 9,106
24	L-115	Electrical Handhole	18	EA	$ 950.00	$ 17,100
25	L-110	Electrical Vault Modifications	1	ALLOW	$ 5,000.00	$ 5,000
26	L-125	Taxiway Edge Fixture with Transformer	36	EA	$ 700.00	$ 25,200
27	L-125	Airfield Guidance Sign and Foundation	4	EA	$ 10,100.00	$ 40,400
28	T-905	Topsoil	5,870	CY	$ 30.00	$ 176,100
29	T-904	Sodding	35,200	SY	$ 3.00	$ 105,600
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 2,231,500***
30		Design / Permitting Service Fees	12%			$ 267,800
31		Resident Inspection / Quality Assurance Testing	15%			$ 334,700
32		Contingency	20%			$ 446,300
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 3,280,300***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.1 - Land Acquisition / Sod Farm Pond Relocation Agreement

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

This project includes a land acquisition and sod farm pond relocation agreement for the proposed Runway 1/19 extension.

Program Year:	**2021**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
		Land Acquisition / Sod Farm Pond Relocation Agreement Only - No Construction				$ -
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ -***
		Fees				$ -
		Contingency	0%			$ -
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ -***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.2 - Runway Extension Justification Study

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

This project includes an update to the Runway 1/19 extension justification study.

Program Year:	**2021**					
Line No.	**Item**	**DESCRIPTION**	**EST. QTY.**	**UNIT**	**BASE UNIT PRICE ($)**	**TOTAL AMOUNT**
		Planning Project Only - No Construction				$ -
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ -***
		Planning Fees				$ 40,000
		Contingency	0%			$ -
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 40,000***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.3 - Benefit Cost Analysis (BCA)

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

This project includes a required BCA for the Runway 1/19 extension project.

Program Year: **2022**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
		Planning Project Only - No Construction				$ -
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ -***
		Planning Fees				$ 250,000
		Contingency	0%			$ -
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 250,000***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.4 - Conduct Environmental Assessment

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

This project includes an Environmental Assessment for the future extension of Runway 1-19.

Program Year:	**2023**					
Line No.	**Item**	**DESCRIPTION**	**EST. QTY.**	**UNIT**	**BASE UNIT PRICE ($)**	**TOTAL AMOUNT**
		Environmental Planning Project Only - No Construction				$ -
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ -***
		Environmental Assessment Fees				$ 375,000
		Contingency	0%			$ -
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 375,000***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.5 - Rail Relocation

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

This project includes the necessary rail relocation for the proposed Runway 1/19 extension.

Program Year:		**2026**				
Line No.	**Item**	**DESCRIPTION**	**EST. QTY.**	**UNIT**	**BASE UNIT PRICE ($)**	**TOTAL AMOUNT**
		Rail relocation construction				$ 2,700,000
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ 2,700,000***
		Design Fees				$ 300,000
		Contingency	20%			$ 60,000
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 3,060,000***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.6 - Runway 1-19 Northward Extension (1,776 LF)

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of a 1,776 ft. by 150 ft. extension of Runway 1-19 to the north (approx. 266,400 SF). Pavement section includes: 12" compacted subgrade, 12" limerock base, and 4" hot mix asphalt surface course. Project includes REILs, marking, lighting, and signage. Project also includes construction of a Runway Safety Area for Runway 19, including perimeter road realignment, and construction of a wet retention pond.

Program Year: **2027**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 766,100.00	$ 766,100
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 153,200.00	$ 153,200
3	C-105	Mobilization	1	LS	$ 766,100.00	$ 766,100
4	MOT	Maintenance of Traffic	1	LS	$ 300,500.00	$ 300,500
5	P-151	Clearing and Grubbing / Stripping	50.0	AC	$ 14,445.00	$ 722,250
6	P-151	Tree Removal, Allowance	1	LS	$ 100,000.00	$ 100,000
7	F-151	Removal and Relocation of Existing Fencing	4,250	LF	$ 35.00	$ 148,750
8	FDOT 550	New Perimeter Fence	3,050	LF	$ 31.00	$ 94,550
9	P-101	Saw-Cut and Connect to Existing Pavement	200	LF	$ 25.00	$ 5,000
10	P-101	Pavement Marking Removal	9,200	SF	$ 3.00	$ 27,600
11	P-152	Dewatering Allowance	1	LS	$ 50,000.00	$ 50,000
12	P-152	Unclassified Excavation - Runway Extension	65,000	CY	$ 7.00	$ 455,000
13	P-152	Unclassified Excavation - Runway Safety Area	111,000	CY	$ 7.00	$ 777,000
14	P-152	Embankment Fill - Runway Extension	226,000	CY	$ 17.00	$ 3,842,000
15	P-152	Embankment Fill - Runway Safety Area	253,000	CY	$ 17.00	$ 4,301,000
16	P-401	Hot Mix Asphalt Surface Course - 4"	6,900	TN	$ 120.00	$ 828,000
17	P-211	Limerock Base Course - 12"	9,900	CY	$ 55.00	$ 544,500
18	P-152	Stabilized Subgrade - 12"	29,600	SY	$ 4.00	$ 118,400
19	P-602	Emulsified Asphalt Prime Coat	7,400	GAL	$ 5.00	$ 37,000
20	P-603	Emulsified Asphalt Tack Coat	3,700	GAL	$ 5.00	$ 18,500
21	P-621	Pavement Grooving	29,600	SY	$ 1.75	$ 51,800
22	FDOT	Reestablish Perimeter Road	13,100	SY	$ 20.00	$ 262,000
23	P-620	Pavement Marking, with Glass Beads	3,100	SF	$ 4.00	$ 12,400
24	P-620	Painted Pavement Markings, Locational / Directional Markings	32,200	SF	$ 2.00	$ 64,400
25	D-701	Reinforced Concrete Pipe	2,700	LF	$ 220.00	$ 594,000
26	D-752	Stormwater Inlets	18	EA	$ 5,600.00	$ 100,800
27	L-108	No.8 AWG, 5kV, L-824, Type C Cable, Installed in Conduit	21,500	LF	$ 2.00	$ 43,000
28	L-108	No.6 AWG, Solid Bare Counterpoise Wire, Installed Above the Conduit, Including the Connectors/Terminators	11,000	LF	$ 2.00	$ 22,000
29	L-110	Non-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	11,000	LF	$ 16.00	$ 176,000
30	L-110	Concrete-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	300	LF	$ 86.00	$ 25,800
31	L-108	Copper Clad Steel Sectional Ground Rods with Exothermic Ground Connectors	46	EA	$ 157.00	$ 7,222
32	L-115	Electrical Handhole	18	EA	$ 950.00	$ 17,100
33	L-125	Runway Edge Fixture with Transformer	25	EA	$ 1,000.00	$ 25,000
34	L-110	Electrical Vault Modifications	1	ALLOW	$ 50,000.00	$ 50,000

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.6 - Runway 1-19 Northward Extension (1,776 LF)

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of a 1,776 ft. by 150 ft. extension of Runway 1-19 to the north (approx. 266,400 SF). Pavement section includes: 12" compacted subgrade, 12" limerock base, and 4" hot mix asphalt surface course. Project includes REILs, marking, lighting, and signage. Project also includes construction of a Runway Safety Area for Runway 19, including perimeter road realignment, and construction of a wet retention pond.

Program Year: **2027**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
35	L-849	Runway End Identification Lights (REILs), Foundations, Power Station, Cabling, and Lightning Protection/Grounding System Relocation	2	SETS	$ 20,000.00	$ 40,000
36	L-125	Airfield Guidance Sign and Foundation - 1 Module	1	EA	$ 14,000.00	$ 14,000
37	L-125	Relocation of RDR Signs	12	EA	$ 14,000.00	$ 168,000
38	L-125	Relamp Edge Lights	1	LS	$ 20,000.00	$ 20,000
39	T-905	Topsoil	35,500	CY	$ 30.00	$ 1,065,000
40	T-904	Seeding	70,800	SY	$ 1.00	$ 70,800
41	T-904	Seeding - Runway Safety Area	110,000	SY	$ 1.00	$ 110,000
42	T-904	Sodding	4,200	SY	$ 3.00	$ 12,600
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 17,007,400***
43		Design / Permitting Service Fees	10%			$ 1,700,700
44		Resident Inspection / Quality Assurance Testing	15%			$ 2,551,100
45		Contingency	20%			$ 3,401,500
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 24,660,700***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.7 - Taxiway A Extension

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of a 2,070 ft. by 50 ft. extension of Taxiway A (approx. 119,710 SF). Pavement section includes: 12” compacted subgrade, 12" limerock base, and 4" hot mix asphalt surface course. Project includes marking, lighting, and signage.

Program Year: **2027**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 219,000.00	$ 219,000
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 43,800.00	$ 43,800
3	C-105	Mobilization	1	LS	$ 219,000.00	$ 219,000
4	P-151	Clearing and Grubbing / Stripping	15.0	AC	$ 14,445.00	$ 216,675
5	P-151	Tree Removal, Allowance	1	LS	$ 15,000.00	$ 15,000
6	F-151	Removal and Relocation of Existing Fencing	2,400	LF	$ 35.00	$ 84,000
7	P-101	Saw-Cut and Connect to Existing Pavement	700	LF	$ 25.00	$ 17,500
8	P-152	Unclassified Excavation	22,700	CY	$ 7.00	$ 158,900
9	P-152	Embankment	124,000	CY	$ 17.00	$ 2,108,000
10	P-401	Hot Mix Asphalt Surface Course - 4"	3,100	TN	$ 120.00	$ 372,000
11	P-211	Limerock Base Course - 12"	4,500	CY	$ 55.00	$ 247,500
12	P-152	Stabilized Subgrade - 12"	13,400	SY	$ 4.00	$ 53,600
13	P-602	Emulsified Asphalt Prime Coat	3,400	GAL	$ 5.00	$ 17,000
14	P-603	Emulsified Asphalt Tack Coat	1,700	GAL	$ 5.00	$ 8,500
15	P-620	Taxiway Hold Line Marking	400	SF	$ 2.00	$ 800
16	P-620	Taxiway Center Line Markings	1,200	SF	$ 2.00	$ 2,400
17	P-620	Taxiway Edge Line Markings	2,300	SF	$ 2.00	$ 4,600
18	D-701	Reinforced Concrete Pipe	1,000	LF	$ 220.00	$ 220,000
19	D-752	Stormwater Inlets	6	EA	$ 5,600.00	$ 33,600
20	L-108	No.8 AWG, 5kV, L-824, Type C Cable, Installed in Conduit	27,500	LF	$ 2.00	$ 55,000
21	L-108	No.6 AWG, Solid Bare Counterpoise Wire, Installed Above the Conduit, Including the Connectors/Terminators	13,800	LF	$ 2.00	$ 27,600
22	L-110	Non-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	12,600	LF	$ 16.00	$ 201,600
23	L-110	Concrete-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	300	LF	$ 86.00	$ 25,800
24	L-108	Copper Clad Steel Sectional Ground Rods with Exothermic Ground Connectors	66	EA	$ 157.00	$ 10,362
25	L-115	Electrical Handhole	20	EA	$ 950.00	$ 19,000
26	L-110	Electrical Vault Modifications	1	ALLOW	$ 25,000.00	$ 25,000
27	L-125	Taxiway Edge Fixture with Transformer	40	EA	$ 700.00	$ 28,000
28	L-125	Airfield Guidance Sign and Foundation	6	EA	$ 10,100.00	$ 60,600
29	T-905	Topsoil	9,900	CY	$ 30.00	$ 297,000
30	T-904	Seeding	54,000	SY	$ 1.00	$ 54,000
31	T-904	Sodding	5,300	SY	$ 3.00	$ 15,900
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ 4,861,700***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.7 - Taxiway A Extension

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of a 2,070 ft. by 50 ft. extension of Taxiway A (approx. 119,710 SF). Pavement section includes: 12” compacted subgrade, 12" limerock base, and 4" hot mix asphalt surface course. Project includes marking, lighting, and signage.

Program Year: **2027**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
32		Design / Permitting Service Fees	9%			$ 437,600
33		Resident Inspection / Quality Assurance Testing	15%			$ 729,300
34		Contingency	20%			$ 972,300
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 7,000,900***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.8 - Relocate Runway 19 PAPI

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project consists of relocation of the existing Precision Approach Path Indicator (PAPI) System to support the northern extension of Runway 19 (A4.2). The project includes removal and reinstallation of the existing system, reuse of all lighting fixtures and extension of existing electrical components.

Program Year: **2027**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 5,300.00	$ 5,300
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 1,100.00	$ 1,100
3	C-105	Mobilization	1	LS	$ 21,200.00	$ 21,200
4	L-125	Remove and Reinstall PAPI Lighting System Components	1	SET	$ 35,000.00	$ 35,000
5	L-125	Certification of PAPI System - Flight Check Verification and Calibration	1	LS	$ 20,000.00	$ 20,000
6	L-108	No.8 AWG, 5kV, L-824, Type C Cable, Installed in Conduit	1,200	LF	$ 2.00	$ 2,400
7	L-108	No.6 AWG, Solid Bare Counterpoise Wire, Installed Above the Conduit, Including the Connectors/Terminators	600	LF	$ 2.00	$ 1,200
8	L-110	Non-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	200	LF	$ 16.00	$ 3,200
9	L-110	Concrete-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	200	LF	$ 86.00	$ 17,200
10	L-112	Directional Drill Conduit, 4 Way, 2-inch, HDPE	200	LF	$ 100.00	$ 20,000
11	L-108	3/4" x 10' Copper Clad Steel Sectional Ground Rods with Exothermic Ground Connectors	1	EA	$ 157.00	$ 157
12	L-115	Electrical Handhole	2	EA	$ 950.00	$ 1,900
13	L-110	Electrical Vault Modifications	1	ALLOW	$ 5,000.00	$ 5,000
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 133,700***
14		Design / Permitting Service Fees	15%			$ 20,100
15		Resident Inspection	15%			$ 20,100
16		Contingency	20%			$ 26,700
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 200,600***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.9 - Runway 1-19 Widening to 150' and Rehabilitation of Existing Runway Pavement

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes rehabilitation of existing runway pavement, 100 ft. by 5,220 ft. (approx. 522,000 SF) and widening of existing runway by 25 ft. on each side (approx. 261,000 SF). Mill and overlay of 4" is assumed for existing rehabilitated pavement. Pavement section for widening includes: 12" compacted subgrade, 12" limerock base material, and 4" hot mix asphalt surface course. Project includes pavement marking and new lighting and signage.

Program Year: **2029**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 401,200.00	$ 401,200
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 80,200.00	$ 80,200
3	C-105	Mobilization	1	LS	$ 401,200.00	$ 401,200
4	MOT	Maintenance of Traffic	1	LS	$ 157,400.00	$ 157,400
5	P-151	Clearing and Grubbing / Stripping	19.0	AC	$ 14,445.00	$ 274,455
6	P-101	Saw-Cut and Connect to Existing Pavement	1,500	LF	$ 25.00	$ 37,500
7	FDOT	Cold Milling, 4" Depth for Rehabilitation	58,000	SY	$ 12.00	$ 696,000
8	P-401	Asphalt Resurfacing for Rehabilitation - 4"	13,500	TN	$ 120.00	$ 1,620,000
9	P-211	Scarify, Regrade, and Recompact Existing Base for Rehabilitation	58,000	SY	$ 2.00	$ 116,000
10	P-602	Emulsified Asphalt Prime Coat for Rehabilitation	14,500	GAL	$ 5.00	$ 72,500
11	P-603	Emulsified Asphalt Tack Coat for Rehabilitation	7,000	GAL	$ 5.00	$ 35,000
12	P-152	Unclassified Excavation - 12"	9,700	CY	$ 7.00	$ 67,900
13	P-152	Embankment	38,650	CY	$ 17.00	$ 657,050
14	P-401	Hot Mix Asphalt Surface Course - 4"	6,750	TN	$ 120.00	$ 810,000
15	P-211	Limerock Base Course - 12"	9,700	CY	$ 55.00	$ 533,500
16	FDOT	Stabilized Subgrade - 12"	29,000	SY	$ 4.00	$ 116,000
17	P-602	Emulsified Asphalt Prime Coat	7,300	GAL	$ 5.00	$ 36,500
18	P-603	Emulsified Asphalt Tack Coat	3,600	GAL	$ 5.00	$ 18,000
19	P-620	Pavement Markings	48,200	SF	$ 2.00	$ 96,400
20	P-621	Pavement Grooving	87,000	SY	$ 1.75	$ 152,250
21	D-701	Reinforced Concrete Pipe	4,000	LF	$ 118.00	$ 472,000
22	D-752	Concrete End Sections	26	EA	$ 1,750.00	$ 45,500
23	L-100	Demolition of Existing Runway Lighting, Cable, and Conduit	1	ALLOW	$ 40,000.00	$ 40,000
24	L-108	No.8 AWG, 5kV, L-824, Type C Cable, Installed in Conduit	104,400	LF	$ 2.00	$ 208,800
25	L-108	No.6 AWG, Solid Bare Counterpoise Wire, Installed Above the Conduit, Including the Connectors/Terminators	27,000	LF	$ 2.00	$ 54,000
26	L-110	Non-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	52,200	LF	$ 16.00	$ 835,200
27	L-110	Concrete-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	500	LF	$ 86.00	$ 43,000
28	L-110	Electrical Vault Modifications	1	ALLOW	$ 80,000.00	$ 80,000
29	L-125	Runway Edge Fixtures with Transformers	104	EA	$ 1,000.00	$ 104,000
30	L-125	Taxiway Edge Fixtures with Transformers	25	EA	$ 700.00	$ 17,500
31	L-125	Airfield Guidance Signs and Foundations	25	EA	$ 10,100.00	$ 252,500
32	T-905	Topsoil	9,800	CY	$ 30.00	$ 294,000
33	T-904	Seeding	47,000	SY	$ 1.00	$ 47,000
34	T-904	Sodding	11,600	SY	$ 3.00	$ 34,800
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 8,907,400***
35		Design / Permitting Service Fees	9%			$ 801,700

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.9 - Runway 1-19 Widening to 150' and Rehabilitation of Existing Runway Pavement

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes rehabilitation of existing runway pavement, 100 ft. by 5,220 ft. (approx. 522,000 SF) and widening of existing runway by 25 ft. on each side (approx. 261,000 SF). Mill and overlay of 4" is assumed for existing rehabilitated pavement. Pavement section for widening includes: 12" compacted subgrade, 12" limerock base material, and 4" hot mix asphalt surface course. Project includes pavement marking and new lighting and signage.

Program Year: **2029**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
36		Resident Inspection / Quality Assurance Testing	15%			$ 1,336,100
37		Contingency	20%			$ 1,781,500
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 12,826,700***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.10 - Displace Runway 1 Threshold (866 LF)

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes displacement of existing Runway 1 threshold markings by 866 ft. northward. Includes removal of existing runway markings and remarking of new threshold location.

Program Year: **2030**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 12,000.00	$ 12,000
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 2,400.00	$ 2,400
3	C-105	Mobilization	1	LS	$ 47,900.00	$ 47,900
4	L-125	Relocate Existing RDR Signage	10	EA	$ 14,000.00	$ 140,000
5	L-125	Relamp Edge Lights - Allowance	1	LS	$ 20,000.00	$ 20,000
6	P-101	Pavement Marking Removal	18,700	SF	$ 2.00	$ 37,400
7	P-620	Pavement Marking	21,000	SF	$ 2.00	$ 42,000
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 301,700***
8		Design / Permitting Service Fees	15%			$ 45,300
9		Resident Inspection / Quality Assurance Testing	15%			$ 45,300
10		Contingency	20%			$ 60,300
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 452,600***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A4.11 - Relocate Runway 1 PAPI

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project consists of relocation of the existing Precision Approach Path Indicator (PAPI) System for the displacement of the Runway 1 threshold (A4.6). The project includes removal and reinstallation of the existing system, reuse of all lighting fixtures, and extension of existing electrical components.

Program Year: **2030**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 5,300.00	$ 5,300
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 1,100.00	$ 1,100
3	C-105	Mobilization	1	LS	$ 21,200.00	$ 21,200
4	L-125	Remove and Reinstall PAPI Lighting System Components	1	SET	$ 35,000.00	$ 35,000
5	L-125	Certification of PAPI System - Flight Check Verification and Calibration	1	LS	$ 20,000.00	$ 20,000
6	L-108	No.8 AWG, 5kV, L-824, Type C Cable, Installed in Conduit	1,200	LF	$ 2.00	$ 2,400
7	L-108	No.6 AWG, Solid Bare Counterpoise Wire, Installed Above the Conduit, Including the Connectors/Terminators	600	LF	$ 2.00	$ 1,200
8	L-110	Non-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	200	LF	$ 16.00	$ 3,200
9	L-110	Concrete-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	200	LF	$ 86.00	$ 17,200
10	L-112	Directional Drill Conduit, 4 Way, 2-inch, HDPE	200	LF	$ 100.00	$ 20,000
11	L-108	3/4" x 10' Copper Clad Steel Sectional Ground Rods with Exothermic Ground Connectors	1	EA	$ 157.00	$ 157
12	L-110	Electrical Vault Modifications	1	ALLOW	$ 5,000.00	$ 5,000
13	L-115	Electrical Handhole	2	EA	$ 950.00	$ 1,900
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ 133,700***
14		Design / Permitting Service Fees	15%			$ 20,100
15		Resident Inspection	15%			$ 20,100
16		Contingency	20%			$ 26,700
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 200,600***

SEBRING REGIONAL AIRPORT (SEF) - CIP

A5.1 - Construct East Full Parallel Taxiway to Runway 1-19

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of a new 7,000 ft. by 50 ft. parallel taxiway with five (5) 300 ft. by 60 ft. connecting taxiways to Runway 1-19 (approx. 533,600 SF total) with tie-ins to existing pavement. Pavement section includes: 12” compacted subgrade, 12" limerock base, and 4" hot mix asphalt surface course. Milling and overlay assumed at tie-ins to existing pavement. Project includes marking, lighting, and signage.

Program Year: **2029**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 454,600.00	$ 454,600
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 90,900.00	$ 90,900
3	C-105	Mobilization	1	LS	$ 454,600.00	$ 454,600
4	P-151	Clearing and Grubbing / Stripping	37.0	AC	$ 14,445.00	$ 534,465
5	P-101	Saw-Cut and Connect to Existing Pavement	1,600	LF	$ 25.00	$ 40,000
6	P-101	Existing Pavement Removal	3,900	SY	$ 25.00	$ 97,500
7	FDOT	Cold Milling, 3" Depth for Tie-Ins	1,800	SY	$ 12.00	$ 21,600
8	P-401	Asphalt Resurfacing for Tie-Ins	500	TN	$ 120.00	$ 60,000
9	P-603	Emulsified Asphalt Tack Coat for Tie-Ins	450	GAL	$ 5.00	$ 2,250
10	P-152	Unclassified Excavation - 12"	44,000	CY	$ 7.00	$ 308,000
11	P-152	Embankment - Assume Fill 3'	123,000	CY	$ 17.00	$ 2,091,000
12	P-401	Hot Mix Asphalt Surface Course - 4"	13,800	TN	$ 120.00	$ 1,656,000
13	P-211	Limerock Base Course - 12"	19,750	CY	$ 55.00	$ 1,086,250
14	P-154	Stabilized Subgrade - 12"	59,300	SY	$ 4.00	$ 237,200
15	P-602	Emulsified Asphalt Prime Coat	14,400	GAL	$ 5.00	$ 72,000
16	P-603	Emulsified Asphalt Tack Coat	7,200	GAL	$ 5.00	$ 36,000
17	P-620	Taxiway Hold Line Marking	2,500	SF	$ 2.00	$ 5,000
18	P-620	Taxiway Center Line Markings	4,600	SF	$ 2.00	$ 9,200
19	P-620	Taxiway Edge Line Markings	8,500	SF	$ 2.00	$ 17,000
20	D-701	Reinforced Concrete Pipe	4,100	LF	$ 220.00	$ 902,000
21	D-752	Stormwater Inlets	28	EA	$ 5,600.00	$ 156,800
22	L-108	No.8 AWG, 5kV, L-824, Type C Cable, Installed in Conduit	93,000	LF	$ 2.00	$ 186,000
23	L-108	No.6 AWG, Solid Bare Counterpoise Wire, Installed Above the Conduit, Including the Connectors/Terminators	46,500	LF	$ 2.00	$ 93,000
24	L-110	Non-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	15,500	LF	$ 16.00	$ 248,000
25	L-110	Concrete-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	1,500	LF	$ 86.00	$ 129,000
26	L-108	Copper Clad Steel Sectional Ground Rods with Exothermic Ground Connectors	93	EA	$ 157.00	$ 14,601
27	L-115	Electrical Handhole	40	EA	$ 950.00	$ 38,000
28	L-110	Electrical Vault Modifications	1	ALLOW	$ 60,000.00	$ 60,000
29	L-125	Taxiway Edge Fixture with Transformer	85	EA	$ 700.00	$ 59,500
30	L-125	Airfield Guidance Sign and Foundation	10	EA	$ 10,100.00	$ 101,000
31	T-905	Topsoil	21,500	CY	$ 30.00	$ 645,000
32	T-904	Seeding	100,000	SY	$ 1.00	$ 100,000
33	T-904	Sodding	28,500	SY	$ 3.00	$ 85,500
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ 10,092,000***
34		Design / Permitting Service Fees	9%			$ 908,300

SEBRING REGIONAL AIRPORT (SEF) - CIP

A5.1 - Construct East Full Parallel Taxiway to Runway 1-19

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of a new 7,000 ft. by 50 ft. parallel taxiway with five (5) 300 ft. by 60 ft. connecting taxiways to Runway 1-19 (approx. 533,600 SF total) with tie-ins to existing pavement. Pavement section includes: 12” compacted subgrade, 12" limerock base, and 4" hot mix asphalt surface course. Milling and overlay assumed at tie-ins to existing pavement. Project includes marking, lighting, and signage.

Program Year: **2029**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
35		Resident Inspection / Quality Assurance Testing	15%			$ 1,513,800
36		Contingency	20%			$ 2,018,400
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 14,532,500***

SEBRING REGIONAL AIRPORT (SEF) - CIP

AMPU - Airport Master Plan Update

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

This project includes an Airport Master Plan Update and new Airport Layout Plans for Sebring Regional Airport.

Program Year: **2029**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
		Planning Project Only - No Construction				$ -
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ -***
		Design / Permitting Service Fees				$ 300,000
		Contingency	20%			$ 60,000
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 360,000***

SEBRING REGIONAL AIRPORT (SEF)
SEBRING, FLORIDA

CONCEPTUAL ESTIMATE SUMMARY

AIRFIELD PROJECTS - LONG-TERM (10-15 YEAR) CIP

			FY 2020			*Escalated to Program Year**		
Project	***Program Year***	***Project Description***	***Total Construction + Contingency + RI/QA Testing***	***Total Design Service Fees***	***Total Program 2020 Budget - Project Total***	***Total Construction + Contingency + RI/QA Testing***	***Total Design Service Fees***	***Total Program Year Budget - Project Total***
A6	**Long-Term**	**Runway 14-32 North Partial Parallel Taxiway**	**$ 2,784,300**	**$ 247,500**	**$ 3,031,800**	**$ 3,653,200**	**$ 324,700**	**$ 3,977,900**
A6.1	2031	Construct North Partial Parallel Taxiway to Runway 14-32	$ 2,784,300	$ 247,500	$ 3,031,800	$ 3,653,200	$ 324,700	$ 3,977,900
TOTAL - AIRFIELD - LONG-TERM (10-15 YEAR) CIP PROJECTS:			***$ 2,784,300***	***$ 247,500***	***$ 3,031,800***	***$ 3,653,200***	***$ 324,700***	***$ 3,977,900***

* All totals are rounded. Escalation has been compounded to program year at a rate of 2.5% per year from FY 2020.

SEBRING REGIONAL AIRPORT (SEF) - CIP

A6.1 - Construct North Partial Parallel Taxiway to Runway 14-32

LONG-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of a 1,300 ft. partial parallel taxiway (approx. 82,100 SF) to connect new parallel Runway 1-19 East to existing Runway 14-32. Pavement section includes: 12" compacted subgrade, 12" limerock base material, and 4" hot mix asphalt surface course. Project includes marking, lighting, and signage.

Program Year: **2031**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 92,900.00	$ 92,900
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 18,600.00	$ 18,600
3	C-105	Mobilization	1	LS	$ 92,900.00	$ 92,900
4	P-151	Clearing and Grubbing / Stripping	8.0	AC	$ 14,445.00	$ 115,560
5	P-101	Saw-Cut and Connect to Existing Pavement	700	LF	$ 25.00	$ 17,500
6	P-101	Existing Pavement Removal	4,000	SY	$ 25.00	$ 100,000
7	F-151	Removal and Relocation of Existing Fencing	1,850	LF	$ 35.00	$ 64,750
8	P-152	Unclassified Excavation	8,400	CY	$ 7.00	$ 58,800
9	P-152	Embankment	19,000	CY	$ 17.00	$ 323,000
10	P-401	Hot Mix Asphalt Surface Course - 4"	2,150	TN	$ 120.00	$ 258,000
11	P-211	Limerock Base Course - 12"	3,100	CY	$ 55.00	$ 170,500
12	P-152	Stabilized Subgrade - 12"	9,200	SY	$ 4.00	$ 36,800
13	P-602	Emulsified Asphalt Prime Coat	2,300	GAL	$ 5.00	$ 11,500
14	P-603	Emulsified Asphalt Tack Coat	1,150	GAL	$ 5.00	$ 5,750
15	P-620	Taxiway Hold Line Marking	400	LF	$ 2.00	$ 800
16	P-620	Taxiway Center Line Markings	1,500	LF	$ 2.00	$ 3,000
17	P-620	Taxiway Edge Line Markings	3,000	LF	$ 2.00	$ 6,000
18	D-701	Reinforced Concrete Pipe	800	LF	$ 220.00	$ 176,000
19	D-752	Stormwater Inlets	4	EA	$ 5,600.00	$ 22,400
20	L-108	No.8 AWG, 5kV, L-824, Type C Cable, Installed in Conduit	17,700	LF	$ 2.00	$ 35,400
21	L-108	No.6 AWG, Solid Bare Counterpoise Wire, Installed Above the Conduit, Including the Connectors/Terminators	8,900	LF	$ 2.00	$ 17,800
22	L-110	Non-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	7,800	LF	$ 16.00	$ 124,800
23	L-110	Concrete-Encased Electrical Conduit, 1-Way, 2-inch Schedule 40 PVC	300	LF	$ 86.00	$ 25,800
24	L-108	Copper Clad Steel Sectional Ground Rods with Exothermic Ground Connectors	42	EA	$ 157.00	$ 6,594
25	L-115	Electrical Handhole	12	EA	$ 950.00	$ 11,400
26	L-110	Electrical Vault Modifications	1	ALLOW	$ 35,000.00	$ 35,000
27	L-125	Taxiway Edge Fixture with Transformer	26	EA	$ 700.00	$ 18,200
28	L-125	Airfield Guidance Sign and Foundation	4	EA	$ 10,100.00	$ 40,400
29	T-905	Topsoil	4,600	CY	$ 30.00	$ 138,000
30	T-904	Seeding	24,000	SY	$ 1.00	$ 24,000
31	T-904	Sodding	3,400	SY	$ 3.00	$ 10,200
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ 2,062,400***
32		Design / Permitting Service Fees	12%			$ 247,500
33		Resident Inspection / Quality Assurance Testing	15%			$ 309,400
34		Contingency	20%			$ 412,500
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 3,031,800***

SEBRING REGIONAL AIRPORT (SEF)

SEBRING, FLORIDA

CONCEPTUAL ESTIMATE SUMMARY

LANDSIDE PROJECTS - SHORT-TERM (0-5 YEAR) CIP

			FY 2020			*Escalated to Program Year**		
Project	*Program Year*	*Project Description*	*Total Construction + Contingency + RI/QA Testing*	*Total Design Service Fees*	*Total Program 2020 Budget - Project Total*	*Total Construction + Contingency + RI/QA Testing*	*Total Design Service Fees*	*Total Program Year Budget - Project Total*
L1	**Short-Term**	**Construct Conventional Hangars on Northern Apron Area**	**$ 9,817,700**	**$ 816,800**	**$ 10,634,500**	**$ 10,681,600**	**$ 887,100**	**$ 11,568,700**
L1.1	2022	Construct Alan Jay Way Access Road and Landside Parking	$ 914,600	$ 101,600	$ 1,016,200	$ 960,900	$ 106,700	$ 1,067,600
L1.2	2022	Construct One (1) 12,400 SF Conventional Hangar	$ 2,534,600	$ 206,500	$ 2,741,100	$ 2,662,900	$ 217,000	$ 2,879,900
L1.3	2023	Construct Supporting Airside Apron	$ 663,500	$ 73,700	$ 737,200	$ 714,500	$ 79,400	$ 793,900
L1.4	2024	Construct Two (2) 10,000 SF Conventional Hangars	$ 4,037,600	$ 299,100	$ 4,336,700	$ 4,456,800	$ 330,200	$ 4,787,000
L1.5	2025	Construct One (1) 8,000 SF Conventional Hangar	$ 1,667,400	$ 135,900	$ 1,803,300	$ 1,886,500	$ 153,800	$ 2,040,300
L2	**Short-Term**	**Construct Stormwater Drainage Improvements - 'Priority A'**	**$ 2,675,800**	**$ 218,000**	**$ 2,893,800**	**$ 2,953,600**	**$ 240,600**	**$ 3,194,200**
L2.1	2024	Construct Enhancements to Identified Priority Areas	$ 2,675,800	$ 218,000	$ 2,893,800	$ 2,953,600	$ 240,600	$ 3,194,200
L3	**Short-Term**	**Construct Hayword Taylor (1 of 2) & Authority Lane Extension**	**$ 3,148,600**	**$ 279,900**	**$ 3,428,500**	**$ 3,562,400**	**$ 316,700**	**$ 3,879,100**
L3.1	2025	Construct Road Extensions	$ 3,148,600	$ 279,900	$ 3,428,500	$ 3,562,400	$ 316,700	$ 3,879,100
TOTAL - LANDSIDE - SHORT-TERM (0-5 YEAR) CIP PROJECTS:			***$ 15,642,100***	***$ 1,314,700***	***$ 16,956,800***	***$ 17,197,600***	***$ 1,444,400***	***$ 18,642,000***

* All totals are rounded. Escalation has been compounded to program year at a rate of 2.5% per year from FY 2020.

SEBRING REGIONAL AIRPORT (SEF) - CIP

L1.1 - Construct Alan Jay Way Access Road and Landside Parking

SHORT-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of new landside parking and connection to an existing road (approx. 34,000 SF total) to support the development of new aircraft hangars. Roadway pavement section includes: 12” LBR=40 stabilized subgrade, 8" optional base group 6 material, and 2” asphalt surface course. Project includes marking and signage.

Program Year: **2022**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 30,500.00	$ 30,500
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 6,100.00	$ 6,100
3	C-105	Mobilization	1	LS	$ 30,500.00	$ 30,500
4	P-151	Clearing and Grubbing / Stripping	2.0	AC	$ 14,445.00	$ 28,890
5	FDOT	Cold Milling, Variable Depth	150	SY	$ 12.00	$ 1,800
6	FDOT	Saw-Cut and Connect to Existing Pavement	300	LF	$ 25.00	$ 7,500
7	FDOT	Unclassified Excavation	2,300	CY	$ 20.00	$ 46,000
8	FDOT	LBR=40 Stabilized Subgrade Course - 12"	3,800	SY	$ 9.00	$ 34,200
9	FDOT	FDOT Index No. 285, Optional Base Group 6 - 8"	3,800	SY	$ 16.00	$ 60,800
10	FDOT	Superpave Asphaltic Concrete, 2"	500	TN	$ 120.00	$ 60,000
11	FDOT	Emulsified Asphalt Prime Coat	1,000	GAL	$ 5.00	$ 5,000
12	FDOT	Pavement Marking	2,900	LF	$ 2.00	$ 5,800
13	FDOT	Concrete Curb - Type D	2,750	LF	$ 21.50	$ 59,125
14	D-701	Reinforced Concrete Pipe	1,800	LF	$ 118.00	$ 212,400
15	D-752	Concrete End Sections	14	EA	$ 1,750.00	$ 24,500
16	F-162	8' Chain-Link Fence with Barbed Wire	600	LF	$ 29.00	$ 17,400
17	FDOT	Directional Signage - Roadway	10	EA	$ 500.00	$ 5,000
18	T-904	Topsoil	900	CY	$ 30.00	$ 27,000
19	T-904	Sodding	5,000	SY	$ 3.00	$ 15,000
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 677,500***
20		Design / Permitting Service Fees	15%			$ 101,600
21		Resident Inspection / Quality Assurance Testing	15%			$ 101,600
22		Contingency	20%			$ 135,500
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 1,016,200***

SEBRING REGIONAL AIRPORT (SEF) - CIP

L1.2 - Construct One (1) 12,400 SF Conventional Hangar

SHORT-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes the construction of one conventional aircraft hangar (approx. 12,400 SF). Apron not included in this estimate.

Program Year:	**2022**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 84,600.00	$ 84,600
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 16,900.00	$ 16,900
3	C-105	Mobilization	1	LS	$ 84,600.00	$ 84,600
4	P-151	Clearing and Grubbing / Stripping	0.5	AC	$ 14,445.00	$ 7,223
5	P-152	Unclassified Excavation	300	CY	$ 20.00	$ 6,000
6	HGR	Conventional Hangars - One (1) Building, 12,400 SF	12,400	SF	$ 120.00	$ 1,488,000
7	UTY	Utility Connections	1	ALLOW	$ 80,000.00	$ 80,000
8	D-705	Trench Drain	300	LF	$ 250.00	$ 75,000
9	D-701	Reinforced Concrete Pipe	200	LF	$ 118.00	$ 23,600
10	D-752	Concrete End Sections	2	EA	$ 1,750.00	$ 3,500
11	T-904	Topsoil	170	CY	$ 30.00	$ 5,100
12	T-904	Sodding	1,000	SY	$ 3.00	$ 3,000
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ 1,877,500***
13		Design / Permitting Service Fees	11%			$ 206,500
14		Resident Inspection / Quality Assurance Testing	15%			$ 281,600
15		Contingency	20%			$ 375,500
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 2,741,100***

SEBRING REGIONAL AIRPORT (SEF) - CIP

L1.3 - Construct Supporting Airside Apron

SHORT-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes the construction of three (3) paved aprons (approx. 34,800 SF total) to support the development of new aircraft hangars. Apron pavement section includes: 12” compacted subgrade, 12" limerock base, and 4" hot mix asphalt surface course. Apron for hangar development for L1.3, L1.5, and L1.6 is included in this estimate.

Program Year: **2023**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 22,100.00	$ 22,100
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 4,400.00	$ 4,400
3	C-105	Mobilization	1	LS	$ 22,100.00	$ 22,100
4	P-151	Clearing and Grubbing / Stripping	3.0	AC	$ 14,445.00	$ 43,335
5	P-152	Unclassified Excavation	3,000	CY	$ 20.00	$ 60,000
6	P-101	Saw-Cut and Connect to Existing Pavement	500	LF	$ 25.00	$ 12,500
7	P-401	Hot Mix Asphalt Surface Course - 4"	900	TN	$ 120.00	$ 108,000
8	P-211	Limerock Base Course - 12"	1,300	CY	$ 55.00	$ 71,500
9	P-152	Stabilized Subgrade - 12"	3,900	SY	$ 4.00	$ 15,600
10	P-602	Emulsified Asphalt Prime Coat	1,000	GAL	$ 5.00	$ 5,000
11	P-603	Emulsified Asphalt Tack Coat	500	GAL	$ 5.00	$ 2,500
12	D-701	Reinforced Concrete Pipe	350	LF	$ 118.00	$ 41,300
13	D-752	Stormwater Inlets	2	EA	$ 5,600.00	$ 11,200
14	T-904	Topsoil	1,500	CY	$ 30.00	$ 45,000
15	T-904	Sodding	9,000	SY	$ 3.00	$ 27,000
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ 491,500***
16		Design / Permitting Service Fees	15%			$ 73,700
17		Resident Inspection / Quality Assurance Testing	15%			$ 73,700
18		Contingency	20%			$ 98,300
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 737,200***

SEBRING REGIONAL AIRPORT (SEF) - CIP

L1.4 - Construct Two (2) 10,000 SF Conventional Hangars

SHORT-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes the construction of two (2) conventional aircraft hangars, approx. 10,000 SF each (20,000 SF total). Apron is not included in this estimate.

Program Year: **2024**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 134,700.00	$ 134,700
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 26,900.00	$ 26,900
3	C-105	Mobilization	1	LS	$ 134,700.00	$ 134,700
4	P-151	Clearing and Grubbing / Stripping	1.0	AC	$ 14,445.00	$ 14,445
5	P-152	Unclassified Excavation	750	CY	$ 20.00	$ 15,000
6	HGR	Conventional Hangars - Two (2) Buildings, 10,000 SF Each	20,000	SF	$ 120.00	$ 2,400,000
7	UTY	Utility Connections	2	ALLOW	$ 80,000.00	$ 160,000
8	D-705	Trench Drain	200	LF	$ 250.00	$ 50,000
9	D-701	Reinforced Concrete Pipe	300	LF	$ 118.00	$ 35,400
10	D-752	Concrete End Sections	2	EA	$ 1,750.00	$ 3,500
11	T-904	Topsoil	340	CY	$ 30.00	$ 10,200
12	T-904	Sodding	2,000	SY	$ 3.00	$ 6,000
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 2,990,800***
13		Design / Permitting Service Fees	10%			$ 299,100
14		Resident Inspection / Quality Assurance Testing	15%			$ 448,600
15		Contingency	20%			$ 598,200
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 4,336,700***

SEBRING REGIONAL AIRPORT (SEF) - CIP

L1.5 - Construct One (1) 8,000 SF Conventional Hangar

SHORT-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes the construction of one conventional aircraft hangar (approx. 8,000 SF) south of the existing apron. Apron not included in this estimate.

Program Year:	**2025**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 55,300.00	$ 55,300
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 11,100.00	$ 11,100
3	C-105	Mobilization	1	LS	$ 55,300.00	$ 55,300
4	P-151	Clearing and Grubbing / Stripping	0.5	AC	$ 14,445.00	$ 7,223
5	P-152	Unclassified Excavation	300	CY	$ 20.00	$ 6,000
6	HGR	Conventional Hangars - One (1) Building, 8,000 SF	8,000	SF	$ 120.00	$ 960,000
7	UTY	Utility Connections	1	ALLOW	$ 80,000.00	$ 80,000
8	D-705	Trench Drain	100	LF	$ 250.00	$ 25,000
9	D-701	Reinforced Concrete Pipe	200	LF	$ 118.00	$ 23,600
10	D-752	Concrete End Sections	2	EA	$ 1,750.00	$ 3,500
11	T-904	Topsoil	170	CY	$ 30.00	$ 5,100
12	T-904	Sodding	1,000	SY	$ 3.00	$ 3,000
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ 1,235,100***
13		Design / Permitting Service Fees	11%			$ 135,900
14		Resident Inspection / Quality Assurance Testing	15%			$ 185,300
15		Contingency	20%			$ 247,000
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 1,803,300***

SEBRING REGIONAL AIRPORT (SEF) - CIP

L2.1 - Construct Enhancements to Identified Priority Areas - "Priority A"

SHORT-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of drainage system improvements with a total of 5,460 LF of piping. This project includes drainage structures, erosion control, traffic control, and sodding.

Program Year: **2024**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 90,100.00	$ 90,100
2	C-105	Mobilization	1	LS	$ 90,100.00	$ 90,100
3	C-102	Silt Fence*	10,900	LF	$ 3.00	$ 32,700
4	C-102	Rip-Rap*	300	SY	$ 80.00	$ 24,000
5	C-100	Aircraft and Vehicle Traffic Control*	1	LS	$ 10,000.00	$ 10,000
6	D-701	24" Reinforced Concrete Pipe*	280	LF	$ 118.00	$ 33,040
7	D-701	36" Reinforced Concrete Pipe*	770	LF	$ 198.00	$ 152,460
8	D-701	42" Reinforced Concrete Pipe*	250	LF	$ 225.00	$ 56,250
9	D-701	48" Reinforced Concrete Pipe*	1,010	LF	$ 260.00	$ 262,600
10	D-701	Dual 48" Reinforced Concrete Pipe*	650	LF	$ 475.00	$ 308,750
11	D-701	54" Reinforced Concrete Pipe*	2,500	LF	$ 305.00	$ 762,500
12	D-751	Ditch Bottom Inlet, Type D	22	EA	$ 5,000.00	$ 110,000
13	T-904	Topsoil	920	CY	$ 30.00	$ 27,600
14	T-904	Sodding*	5,500	SY	$ 4.00	$ 22,000
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ 1,982,100***
15		Design / Permitting Service Fees	11%			$ 218,000
16		Resident Inspection / Quality Assurance Testing	15%			$ 297,300
17		Contingency	20%			$ 396,400
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 2,893,800***

*OPINION FOR PROJECT PROVIDED BY ATKINS

SEBRING REGIONAL AIRPORT (SEF) - CIP

L3.1 - Construct Road Extensions

SHORT-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of a new 40 ft. by 3,200 ft. paved road and a 30 ft. by 850 ft. paved road, which extends and connects Hayword Taylor Road and Authority Lane (approx. 153,500 SF total). Assumed pavement section includes: 12” LBR-40 stabilized subgrade, 8" optional base group 6 material, and 2” asphalt surface course. Milling and overlay assumed at tie-ins to existing pavement. No roadway lighting included in estimate.

Program Year: **2025**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	FDOT	Contractor Quality Control Program	1	LS	$ 105,100.00	$ 105,100
2	FDOT	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 21,000.00	$ 21,000
3	FDOT	Mobilization	1	LS	$ 105,100.00	$ 105,100
4	FDOT	Clearing and Grubbing / Stripping	6.0	AC	$ 14,445.00	$ 86,670
5	FDOT	Saw-Cut and Connect to Existing Pavement	1,200	LF	$ 25.00	$ 30,000
6	P-101	Existing Pavement Removal	8,050	SY	$ 25.00	$ 201,250
7	FDOT	Cold Milling, 3" Depth for Tie-Ins	4,500	SY	$ 12.00	$ 54,000
8	FDOT	Asphalt Resurfacing for Tie-Ins	800	TN	$ 120.00	$ 96,000
9	FDOT	Emulsified Asphalt Tack Coat for Tie-Ins	600	GAL	$ 5.00	$ 3,000
10	FDOT	Unclassified Excavation	2,100	CY	$ 20.00	$ 42,000
11	P-152	Embankment	23,700	CY	$ 20.00	$ 474,000
12	FDOT	LBR=40 Stabilized Subgrade Course - 12"	17,100	SY	$ 9.00	$ 153,900
13	FDOT	FDOT Index No. 285, Optional Base Group 6 - 8"	17,100	SY	$ 16.00	$ 273,600
14	FDOT	Superpave Asphaltic Concrete, 2"	2,000	TN	$ 120.00	$ 240,000
15	FDOT	Emulsified Asphalt Prime Coat	4,275	GAL	$ 5.00	$ 21,375
16	FDOT	Pavement Marking	12,150	LF	$ 2.00	$ 24,300
17	D-701	Reinforced Concrete Pipe	2,500	LF	$ 118.00	$ 295,000
18	D-752	Concrete End Sections	16	EA	$ 1,750.00	$ 28,000
19	FDOT	Directional Signage - Roadway	12	EA	$ 500.00	$ 6,000
20	FDOT	Topsoil	1,500	CY	$ 30.00	$ 45,000
21	FDOT	Sodding	9,000	SY	$ 3.00	$ 27,000
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ 2,332,300***
22		Design / Permitting Service Fees	12%			$ 279,900
23		Resident Inspection / Quality Assurance Testing	15%			$ 349,800
24		Contingency	20%			$ 466,500
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 3,428,500***

SEBRING REGIONAL AIRPORT (SEF)
SEBRING, FLORIDA
CONCEPTUAL ESTIMATE SUMMARY
LANDSIDE PROJECTS - MEDIUM-TERM (5-10 YEAR) CIP

			FY 2020			*Escalated to Program Year**		
Project	*Program Year*	*Project Description*	*Total Construction + Contingency + RI/QA Testing*	*Total Design Service Fees*	*Total Program 2020 Budget - Project Total*	*Total Construction + Contingency + RI/QA Testing*	*Total Design Service Fees*	*Total Program Year Budget - Project Total*
L4	**Med-Term**	**Construct Conventional Hangar on Southern Apron Area**	**$ 4,307,100**	**$ 319,000**	**$ 4,626,100**	**$ 4,994,900**	**$ 369,900**	**$ 5,364,800**
L4.1	2026	Construct 20,400 SF Conventional Hangar and Landside Access	$ 4,307,100	$ 319,000	$ 4,626,100	$ 4,994,900	$ 369,900	$ 5,364,800
L5	**Med-Term**	**Construct Conventional Hangars on Taxiway A**	**$ 15,046,400**	**$ 960,100**	**$ 16,006,500**	**$ 18,279,000**	**$ 1,165,000**	**$ 19,444,000**
L5.1	2027	Construct Supporting Airside Apron	$ 1,800,500	$ 160,000	$ 1,960,500	$ 2,140,200	$ 190,200	$ 2,330,400
L5.2	2028	Construct Three (3) 20,400 SF Conventional Hangars and Landside Access	$ 12,953,700	$ 767,600	$ 13,721,300	$ 15,782,800	$ 935,200	$ 16,718,000
L5.3	2028	Construct Stormwater Drainage Improvements - 'Priority B'	$ 292,200	$ 32,500	$ 324,700	$ 356,000	$ 39,600	$ 395,600
L6	**Med-Term**	**Construct Hayword Taylor Extension (2 of 2)**	**$ 1,291,200**	**$ 143,500**	**$ 1,434,700**	**$ 1,612,500**	**$ 179,200**	**$ 1,791,700**
L6.1	2029	Construct Road Extension	$ 1,291,200	$ 143,500	$ 1,434,700	$ 1,612,500	$ 179,200	$ 1,791,700
TOTAL - LANDSIDE - MEDIUM-TERM (5-10 YEAR) CIP PROJECTS:			***$ 20,644,700***	***$ 1,422,600***	***$ 22,067,300***	***$ 24,886,400***	***$ 1,714,100***	***$ 26,600,500***

* All totals are rounded. Escalation has been compounded to program year at a rate of 2.5% per year from FY 2020.

SEBRING REGIONAL AIRPORT (SEF) - CIP

L4.1 - Construct 20,400 SF Conventional Hangar and Landside Access

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes the construction of one conventional aircraft hangar (approx. 20,400 SF) with removal of existing apron pavement. Includes parking lot (approx. 7,900 SF) to support the hangar; demolition of existing pavement and reconstruction of new pavement is assumed for parking lot. Apron is not included in this estimate.

Program Year: **2026**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 143,700.00	$ 143,700
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 28,700.00	$ 28,700
3	C-105	Mobilization	1	LS	$ 143,700.00	$ 143,700
4	P-101	Saw-Cut and Connect to Existing Pavement	200	LF	$ 25.00	$ 5,000
5	FDOT	Recompact Subgrade - Parking Lot	900	SY	$ 3.00	$ 2,700
6	FDOT	Existing Pavement Removal	6,900	SY	$ 25.00	$ 172,500
7	FDOT	FDOT Index No. 285, Optional Base Group 6 - 8"	900	SY	$ 16.00	$ 14,400
8	FDOT	Asphalt Resurfacing for Parking Tie-In	200	TN	$ 120.00	$ 24,000
9	FDOT	Emulsified Asphalt Prime Coat for Parking Tie-In	225	GAL	$ 5.00	$ 1,125
10	HGR	Conventional Hangars - One (1) Building, 20,400 SF	20,400	SF	$ 120.00	$ 2,448,000
11	UTY	Utility Connections	1	ALLOW	$ 80,000.00	$ 80,000
12	FDOT	Pavement Marking	900	LF	$ 2.00	$ 1,800
13	D-705	Trench Drain	200	LF	$ 250.00	$ 50,000
14	D-701	Reinforced Concrete Pipe	400	LF	$ 118.00	$ 47,200
15	D-752	Concrete End Sections	2	EA	$ 1,750.00	$ 3,500
16	FDOT	Concrete Curb - Type D	420	LF	$ 21.50	$ 9,030
17	F-162	8' Chain-Link Fence with Barbed Wire	200	LF	$ 29.00	$ 5,800
18	FDOT	Directional Signage - Roadway	2	EA	$ 500.00	$ 1,000
19	T-904	Topsoil	175	CY	$ 30.00	$ 5,250
20	T-904	Sodding	1,000	SY	$ 3.00	$ 3,000
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ 3,190,400***
21		Design / Permitting Service Fees	10%			$ 319,000
22		Resident Inspection / Quality Assurance Testing	15%			$ 478,600
23		Contingency	20%			$ 638,100
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 4,626,100***

SEBRING REGIONAL AIRPORT (SEF) - CIP

L5.1 - Construct Supporting Airside Apron

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes the construction of paved apron (approx. 116,820 SF total) to support new aircraft hangars. Apron pavement section includes: 12" compacted subgrade, 12" limerock base, and 4" hot mix asphalt surface course. Apron for hangar development for L5.3 is included in this estimate.

Program Year: **2027**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 60,100.00	$ 60,100
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 12,000.00	$ 12,000
3	C-105	Mobilization	1	LS	$ 60,100.00	$ 60,100
4	P-151	Clearing and Grubbing / Stripping	4.0	AC	$ 14,445.00	$ 57,780
5	P-100	Mill and Resurface - 2" Depth, at Taxiway/Apron joint	150	SY	$ 8.00	$ 1,200
6	P-101	Saw-Cut and Connect to Existing Pavement	700	LF	$ 25.00	$ 17,500
7	P-152	Unclassified Excavation	10,075	CY	$ 20.00	$ 201,500
8	P-401	Hot Mix Asphalt Surface Course - 4"	3,100	TN	$ 120.00	$ 372,000
9	P-211	Limerock Base Course - 12"	4,400	CY	$ 55.00	$ 242,000
10	P-152	Stabilized Subgrade - 12"	13,000	SY	$ 4.00	$ 52,000
11	P-602	Emulsified Asphalt Prime Coat	3,300	GAL	$ 5.00	$ 16,500
12	P-603	Emulsified Asphalt Tack Coat	1,700	GAL	$ 5.00	$ 8,500
13	D-701	Reinforced Concrete Pipe	1,500	LF	$ 118.00	$ 177,000
14	D-752	Concrete End Sections	10	EA	$ 1,750.00	$ 17,500
15	D-751	Aircraft-Rated Inlets	2	EA	$ 10,000.00	$ 20,000
16	T-904	Topsoil	400	CY	$ 30.00	$ 12,000
17	T-904	Sodding	2,000	SY	$ 3.00	$ 6,000
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 1,333,700***
18		Design / Permitting Service Fees	12%			$ 160,000
19		Resident Inspection / Quality Assurance Testing	15%			$ 200,100
20		Contingency	20%			$ 266,700
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 1,960,500***

SEBRING REGIONAL AIRPORT (SEF) - CIP

L5.2 - Construct Three (3) 20,400 SF Conventional Hangars and Landside Access

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of three (3) conventional aircraft hangars, approx. 20,400 SF each (approx. 61,200 SF total), including landside access and vehicular parking areas (approx. 55,327 SF total). Pavement section for parking and roadway includes: 12” LBR=40 stabilized subgrade, 8" optional base group 6 material, and 2” asphalt surface course. Apron not included with this estimate.

Program Year: **2028**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 432,200.00	$ 432,200
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 86,400.00	$ 86,400
3	C-105	Mobilization	1	LS	$ 432,200.00	$ 432,200
4	P-151	Clearing and Grubbing / Stripping	4.0	AC	$ 14,445.00	$ 57,780
5	P-101	Saw-Cut and Connect to Existing Pavement	900	LF	$ 25.00	$ 22,500
6	P-152	Unclassified Excavation	3,750	CY	$ 20.00	$ 75,000
7	FDOT	LBR=40 Stabilized Subgrade Course - 12"	6,150	SY	$ 9.00	$ 55,350
8	FDOT	FDOT Index No. 285, Optional Base Group 6 - 8"	6,150	SY	$ 16.00	$ 98,400
9	FDOT	Superpave Asphaltic Concrete, 2"	715	TN	$ 120.00	$ 85,800
10	FDOT	Emulsified Asphalt Prime Coat	1,540	GAL	$ 5.00	$ 7,700
11	HNGR	Conventional Hangars - Three (3) Buildings, 20,400 SF each (61,200 SF total)	61,200	SF	$ 120.00	$ 7,344,000
12	UTY	Utility Connections	3	ALLOW	$ 80,000.00	$ 240,000
13	D-705	Trench Drain	900	LF	$ 250.00	$ 225,000
14	D-701	Reinforced Concrete Pipe	2,000	LF	$ 118.00	$ 236,000
15	D-752	Concrete End Sections	14	EA	$ 1,750.00	$ 24,500
16	D-751	Drainage Manholes	5	EA	$ 7,000.00	$ 35,000
17	FDOT	Concrete Curb - Type D	2,580	LF	$ 21.50	$ 55,470
18	FDOT	Pavement Marking	4,100	LF	$ 2.00	$ 8,200
19	FDOT	Directional Signage - Roadway	5	EA	$ 350.00	$ 1,750
20	T-904	Topsoil	1,500	CY	$ 30.00	$ 45,000
21	T-904	Sodding	9,000	SY	$ 3.00	$ 27,000
					TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)	***$ 9,595,300***
22		Design / Permitting Service Fees	8%			$ 767,600
23		Resident Inspection / Quality Assurance Testing	15%			$ 1,439,300
24		Contingency	20%			$ 1,919,100
					TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)	***$ 13,721,300***

SEBRING REGIONAL AIRPORT (SEF) - CIP

L5.3 - Construct Stormwater Drainage Improvements - 'Priority B'

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of drainage system improvements, with a total of 1,475 LF of piping. This project includes drainage structures and erosion control.

Program Year: **2028**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 9,800.00	$ 9,800
2	C-105	Mobilization	1	LS	$ 9,800.00	$ 9,800
3	C-102	Silt Fence*	2,950	LF	$ 3.00	$ 8,850
4	D-701	18" Reinforced Concrete Pipe*	675	LF	$ 87.00	$ 58,725
5	D-701	24" Reinforced Concrete Pipe*	600	LF	$ 118.00	$ 70,800
6	D-701	30" Reinforced Concrete Pipe*	200	LF	$ 142.00	$ 28,400
7	D-751	Ditch Bottom Inlet, Type D*	6	EA	$ 5,000.00	$ 30,000
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 216,400***
8		Design / Permitting Service Fees	15%			$ 32,500
9		Resident Inspection / Quality Assurance Testing	15%			$ 32,500
10		Contingency	20%			$ 43,300
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 324,700***

*OPINION FOR PROJECT PROVIDED BY ATKINS

SEBRING REGIONAL AIRPORT (SEF) - CIP

L6.1 - Construct Road Extension

MEDIUM-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of a new 40 ft. by 1,665 ft. paved road to extend Hayword Taylor Road (approx. 66,550 SF). Pavement section includes: 12" LBR-40 stabilized subgrade, 8" optional base group 6 material, and 2" asphalt surface course. Milling and overlay assumed at tie-ins to existing pavement. No roadway lighting included in estimate.

Program Year: **2029**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	FDOT	Contractor Quality Control Program	1	LS	$ 43,100.00	$ 43,100
2	FDOT	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 8,600.00	$ 8,600
3	FDOT	Mobilization	1	LS	$ 43,100.00	$ 43,100
4	FDOT	Clearing and Grubbing / Stripping	2.0	AC	$ 14,445.00	$ 28,890
5	FDOT	Fence Removal	1,700	LF	$ 7.00	$ 11,900
6	FDOT	Saw-Cut and Connect to Existing Pavement	100	LF	$ 25.00	$ 2,500
7	FDOT	Unclassified Excavation	4,510	CY	$ 20.00	$ 90,200
8	FDOT	Embankment / Drainage Ditch	12,350	CY	$ 20.00	$ 247,000
9	FDOT	LBR=40 Stabilized Subgrade Course - 12"	7,400	SY	$ 9.00	$ 66,600
10	FDOT	FDOT Index No. 285, Optional Base Group 6 - 8"	7,400	SY	$ 16.00	$ 118,400
11	FDOT	Superpave Asphaltic Concrete, 2"	900	TN	$ 120.00	$ 108,000
12	FDOT	Emulsified Asphalt Prime Coat	1,900	GAL	$ 5.00	$ 9,500
13	FDOT	Pavement Marking	5,000	LF	$ 2.00	$ 10,000
14	FDOT	8' Chain-Link Fence with Barbed Wire	2,000	LF	$ 29.00	$ 58,000
15	D-701	Reinforced Concrete Pipe	800	LF	$ 118.00	$ 94,400
16	D-752	Concrete End Sections	4	EA	$ 1,750.00	$ 7,000
17	FDOT	Directional Signage - Roadway	2	EA	$ 500.00	$ 1,000
18	FDOT	Topsoil	175	CY	$ 30.00	$ 5,250
19	FDOT	Sodding	1,000	SY	$ 3.00	$ 3,000
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 956,400***
20		Design / Permitting Service Fees	15%			$ 143,500
21		Resident Inspection / Quality Assurance Testing	15%			$ 143,500
22		Contingency	20%			$ 191,300
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 1,434,700***

SEBRING REGIONAL AIRPORT (SEF)
SEBRING, FLORIDA
CONCEPTUAL ESTIMATE SUMMARY
LANDSIDE PROJECTS - LONG-TERM (10-15 YEAR) CIP

			FY 2020			Escalated to Program Year*		
Project	Program Year	Project Description	Total Construction + Contingency + RI/QA Testing	Total Design Service Fees	Total Program 2020 Budget - Project Total	Total Construction + Contingency + RI/QA Testing	Total Design Service Fees	Total Program Year Budget - Project Total
L7	**Long-Term**	**Construct Carroll Shelby Road Addition**	**$ 69,907,200**	**$ 4,142,600**	**$ 74,049,800**	**$ 91,724,300**	**$ 5,435,500**	**$ 97,159,800**
L7.1	2031	Construct Carroll Shelby Road Redevelopment	$ 69,907,200	$ 4,142,600	$ 74,049,800	$ 91,724,300	$ 5,435,500	$ 97,159,800
TOTAL - LANDSIDE - LONG-TERM (10-15 YEAR) CIP PROJECTS:			***$ 69,907,200***	***$ 4,142,600***	***$ 74,049,800***	***$ 91,724,300***	***$ 5,435,500***	***$ 97,159,800***

* All totals are rounded. Escalation has been compounded to program year at a rate of 2.5% per year from FY 2020.

SEBRING REGIONAL AIRPORT (SEF) - CIP

L7.1 - Construct Carroll Shelby Road Redevelopment

LONG-TERM *CONCEPTUAL ESTIMATE and PROJECT DETAIL*

The project includes construction of a new 120 ft. right of way, containing an 18,000 ft. curbed four lane road with bike lanes, turn lanes as needed, and curbed median (approx. 1,775,800 SF total). The project also includes widening of the existing entry road, a new traffic circle, and road stubs for future use. Project includes pavement markings for a four-lane road, curbed and sodded median areas, roadway lighting, and development of wet and dry retention ponds. Pavement section includes: 12" LBR-40 stabilized subgrade, 8" optional base group 6 material, and 4" asphalt surface course. Assumed removal of existing pavement at intersections with new roadway.

Program Year: **2031**

Line No.	Item	DESCRIPTION	EST. QTY.	UNIT	BASE UNIT PRICE ($)	TOTAL AMOUNT
1	C-100	Contractor Quality Control Program	1	LS	$ 2,332,600.00	$ 2,332,600
2	C-102	Temporary Pollution, Erosion and Siltation Control	1	LS	$ 466,500.00	$ 466,500
3	C-105	Mobilization	1	LS	$ 2,332,600.00	$ 2,332,600
4	P-151	Clearing and Grubbing / Stripping	139.0	AC	$ 14,445.00	$ 2,007,855
5	FDOT	Earthwork - Dry Retention Ponds (19.2 AC) - 4' Depth	124,000	CY	$ 10.00	$ 1,240,000
6	FDOT	Earthwork - Wet Retention Ponds (78.3 AC) - 10' Depth	1,262,000	CY	$ 10.00	$ 12,620,000
7	FDOT	Stabilization - Retention Ponds	471,900	SY	$ 8.00	$ 3,775,200
8	P-152	Unclassified Excavation	120,250	CY	$ 20.00	$ 2,405,000
9	FDOT	Embankment / Drainage Ditch	133,200	CY	$ 20.00	$ 2,664,000
10	P-101	Saw-Cut and Connect to Existing Pavement	1,300	LF	$ 25.00	$ 32,500
11	FDOT	Full Depth Pavement Removal - Existing Roadway	17,200	SY	$ 25.00	$ 430,000
12	FDOT	LBR=40 Stabilized Subgrade Course - 12"	121,100	SY	$ 9.00	$ 1,089,900
13	FDOT	FDOT Index No. 285, Optional Base Group 6 - 8"	121,100	SY	$ 16.00	$ 1,937,600
14	FDOT	Superpave Asphaltic Concrete, 4"	28,200	TN	$ 120.00	$ 3,384,000
15	FDOT	Emulsified Asphalt Tack Coat	14,600	GAL	$ 5.00	$ 73,000
16	FDOT	Emulsified Asphalt Prime Coat	30,300	GAL	$ 5.00	$ 151,500
17	FDOT	Concrete Curb and Gutter, Type E	36,100	LF	$ 17.00	$ 613,700
18	FDOT	Concrete Curb and Gutter, Type F	47,500	LF	$ 24.00	$ 1,140,000
19	FDOT	Pavement Marking	54,000	SF	$ 2.00	$ 108,000
20	D-701	Reinforced Concrete Pipe	72,000	LF	$ 118.00	$ 8,496,000
21	D-701	Reinforced Concrete Pipe - For Connections	4,500	LF	$ 250.00	$ 1,125,000
22	FDOT	Drainage Inlet	180	EA	$ 4,000.00	$ 720,000
23	D-752	Concrete End Sections	12	EA	$ 2,500.00	$ 30,000
24	FDOT	*Roadway Lighting - Conduit and Pull Boxes Only (2 Miles, Both Sides)	1	ALLOW	$ 210,000.00	$ 210,000
25	FDOT	*Electrical Distribution	1	ALLOW	$ 1,380,000.00	$ 1,380,000
26	FDOT	*Intersection Traffic Light	2	EA	$ 56,800.00	$ 113,600
27	FDOT	Utility Relocation, Allowance	1	LS	$ 250,000.00	$ 250,000
28	FDOT	Directional Signage - Roadway	25	EA	$ 500.00	$ 12,500
29	T-904	Topsoil	13,400	CY	$ 30.00	$ 402,000
30	T-904	Sodding	80,000	SY	$ 3.00	$ 240,000
		TOTAL ESTIMATED CONSTRUCTION COST (2020 DOLLARS)				***$ 51,783,100***
31		Design / Permitting Service Fees	8%			$ 4,142,600
32		Resident Inspection / Quality Assurance Testing	15%			$ 7,767,500
33		Contingency	20%			$ 10,356,600
		TOTAL ESTIMATED PROGRAM BUDGET (2020 DOLLARS)				***$ 74,049,800***

*OPINION FOR ELEMENT PROVIDED BY ATKINS

Appendix F. Public Involvement Program

AFFIDAVIT OF PUBLICATION

HIGHLANDS NEWS-SUN
Published – Daily
SEBRING, HIGHLANDS COUNTY, FL

STATE OF FLORIDA,
COUNTY OF HIGHLANDS

Before the undersigned authority personally appeared Janet Emerson, who on oath says that she is an authorize published at Sebring, in Highlands County, Florida; that the attached copy of advertisement, being a notice in the matter of
SEBRING REGIONAL AIRPORT PUBLIC MEETING
FEBRUARY 20, 2020
was published in said newspaper in the issues of

FEBRUARY 1, 8, 2020

Affiant further says that the said HIGHLANDS NEWS-SUN is a newspaper published at Sebring, in said Highlands County, Florida, and that the said newspaper has heretofore been continuously published in said Highlands County, Florida, and has been entered as second class, mail matter at the post office in Sebring, in said Highlands County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Janet Emerson

Sworn to and subscribed before me this 10th day of February, 2020

Notary Public

(Notary Stamp)

NOTARY PUBLIC STATE OF FLORIDA
ROMONA D WASHINGTON
Commission # GG 333543
Expires June 20, 2023
Bonded Thru Budget Notary Services

Sebring Regional Airport
Public Meeting Advertisement

Sebring Regional Airport (SEF) is currently undergoing an update to Airport Master Plan. This 20-year plan is a comprehensive study of airport and describes short, medium, and long-term development strategy necessary to meet anticipated future demand of the airport.

Public is invited to attend a public meeting on the Airport Master Plan that will take place Thursday, February 20th, 2020. The public meeting will be from 2:30PM – 4:30PM. Meeting will be held at 128 Authority Lane Sebring Fl. 33870.

Sebring Airport Authority has retained services of Atkins North America in assisting with development of Airport Master Plan. Atkins North America is one of the world's most respected design, engineering, and project management consultants. Master Plan for Sebring Regional Airport is approaching its conclusion.

Sebring Regional Airport invites the public to attend master plan session on February 20th to learn more about the strategic process, review alternative development plans, and share ideas with staff.

Feb. 1, 8, 2020

THANK YOU!

Name ______________________ Phone ______________

Comment:

Sebring Regional Airport
Airport Master Plan Update
Public Meeting | February 20, 2020

THANK YOU!

Name ______________________ Phone ______________

Comment:

Sebring Regional Airport
Airport Master Plan Update
Public Meeting | February 20, 2020

Airports 101

Airport & Aviation Terminology

Airport Master Plan
An airport master plan is a comprehensive study of an airport and usually describes the short, medium, and long-term development plans to meet future aviation demand.

Aircraft Operation
The landing, takeoff or touch-and-go procedure by an aircraft on a runway at an airport.

Airport Improvement Program (AIP)
The AIP provides grants to public agencies, and in some cases, to private owners and entities, for the planning and development of public-use airports that are included in the NPIAS.

Airport Layout Plan (ALP)
A scaled drawing (or set of drawings), in either traditional or electronic form, of current and future airport facilities that provides a graphic representation of the existing and long-term development plan for the airport and demonstrates the preservation and continuity of safety, utility, and efficiency of the airport to the satisfaction of the FAA.

Airport Reference Code (ARC)
An ARC is a combination of the design aircraft's Aircraft Approach Category and Airplane Design Group. The ARC is used for planning and design only and does not limit the aircraft that may be able to operate safely on the airport.

Airport Reference Point (ARP)
The approximate geometric center of all usable runways at the airport.

Aircraft Approach Category (AAC)
A term used to specify a grouping of aircraft based upon approach speed in a landing configuration at their maximum certified landing weight.

Airplane Design Group (ADG)
A classification of aircraft based upon wingspan and tail height.

Based Aircraft
Based aircraft are those that have a lease either for storage facilities or space on a parking apron at the airport, for a majority of the year.

Building Restriction Line (BRL)
A notional line that identifies suitable and unsuitable locations for buildings on airports on the Airport Layout Plan.

Declared Distances
The distances the airport owner declares available for an aircraft's takeoff run, takeoff distance, accelerate-stop distance, and landing distance requirements. The distances are:
• Takeoff Run Available (TORA)
• Takeoff Distance Available (TODA)
• Accelerate-Stop Distance Available (ASDA)
• Landing Distance Available (LDA)

Airports 101

Airport & Aviation Terminology

Design Aircraft / Critical Aircraft
An aircraft with characteristics that determine the application of airport design standards for a specific runway, taxiway, taxilane, apron, or other facility. This aircraft can be a specific aircraft model or a composite of several aircraft using, expected, or intended to use the airport or part of the airport. (Also called “critical aircraft” or “critical design aircraft.”)

Displaced Threshold
A threshold that is located at a point on the runway beyond the beginning of the runway.

Enplanement
The boarding of a passenger or unit of cargo, freight, and mail on an aircraft at an airport.

Fixed Base Operator (FBO)
A business enterprise located at on airport that provides services to pilots including aircraft rental, training, fueling, maintenance, parking, and the sale of pilot supplies.

Hot Spot
A location on an airport movement area with a history of potential risk of collision or runway incursion, and where heightened attention by pilots and drivers is necessary.

Imaginary Surfaces
Described in Federal Aviation Regulations (FAR) Part 77 as established surfaces based on the runway that are used to identify objects that may impact airport plans or aircraft departure/arrival procedures or routes. There are five types of imaginary surfaces: horizontal, conical, primary, approach and transitional.

Instrument Approach Procedure (IAP)
A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. It is prescribed and approved for a specific airport by competent authority.

Itinerant Operations
Operations by aircraft that leaves the local airspace.

Large Aircraft
An aircraft with a maximum certificated takeoff weight of more than 12,500 lbs

Local Operations
Aircraft operations performed by aircraft that are based at the airport and that operate in the local traffic pattern or within sight of the airport, that are known to be departing for or arriving from flights in local practice areas within a prescribed distance from the airport, or that execute simulated instrument approaches at the airport.

Modification to Standards
Any approved nonconformance to FAA standards, other than dimensional standards for Runway Safety Areas (RSAs), applicable to an airport design, construction, or equipment procurement project that is necessary to accommodate an unusual local condition for a specific project on a case-by-case basis while maintaining an acceptable level of safety.

Movement Area
The runways, taxiways, and other areas of an airport that are used for taxiing or hover taxiing, air taxiing, takeoff, and landing of aircraft including helicopters and tilt-rotors, exclusive of loading aprons and aircraft parking areas

National Plan of Integrated Airport Systems (NPIAS)
The national airport system plan developed by the Secretary of Transportation on a biannual basis for the development of public use airports to meet national air transportation needs.

Airports 101

Airport & Aviation Terminology

National Environmental Policy Act (NEPA)

A U.S. Environmental law that promotes the enhancement of the environment. NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions. Using the NEPA process, agencies evaluate the environmental and related social and economic effects of their proposed actions. Agencies also provide opportunities for public review and comment on those evaluations.

Navigational Aid (NAVAID)

Electronic and visual air navigation aids, lights, signs, and associated supporting equipment.

Object Free Area (OFA)

An area centered on the ground on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by remaining clear of objects, except for objects that need to be in the OFA for air navigation or aircraft ground maneuvering purposes.

Obstacle Free Zone (OFZ)

The OFZ is the three-dimensional airspace along the runway and extended runway centerline that is required to be clear of obstacles for protection for aircraft landing or taking off from the runway and for missed approaches.

Runway Safety Area (RSA)

Defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot, or excursion from the runway.

Runway Protection Zone (RPZ)

A trapezoidal area at ground level prior to the threshold or beyond the runway end to enhance the safety and protection of people and property on the ground.

Small Aircraft

An aircraft with a maximum certificated takeoff weight of 12,500 lbs or less.

Terminal Area Forecast (TAF)

The official forecast of aviation activity, both aircraft and enplanements, at FAA facilities. This includes FAA-towered airports, federally contracted towered airports, non-federal towered airports, and many non-towered airports.

Taxilane

A taxiway designed for low speed and precise taxiing. Taxilanes are usually, but not always, located outside the movement area, providing access from taxiways (usually an apron taxiway) to aircraft parking positions and other terminal areas.

Taxiway

A defined path established for the taxiing of aircraft from one part of an airport to another.

Taxiway Design Group (TDG)

A number classification of aircraft based upon the aircraft main gear width, and distance from the cockpit to the main gear.

Threshold

The beginning of that portion of the runway available for landing. In some instances, the threshold may be displaced. “Threshold” always refers to landing, not the start of takeoff.

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SEBRING
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