AUGUSTA STATE AIRPORT

October 2013 Airport Layout Plan Update Narrative

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Maine Department of Transportation – Bureau of Transportation Systems Planning

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FAA AIP # 3-23-0003-027-2013

MaineDOT # 018450.00

Augusta State Airport

AIRPORT LAYOUT PLAN UPDATE NARRATIVE

BACKGROUND

Augusta State Airport (AUG) is a public use airport serving the general aviation and commercial air service needs of South Central Maine. The Airport is developed on 315 acres of land one nautical mile northwest of the central business district of Augusta, a city in Kennebec County, Maine and the State's capital. The Airport is owned and Sponsored by the State of Maine and operated under a management agreement with the City of Augusta. The Airport Manager and other airport staff are City employees. The Airport was a certificated commercial service facility under CFR 14 Part 139 as a Class III Airport for many years, but after the previous Essential Air Service air carrier operating 34 Seat SAAB 340 aircraft was changed to the current carrier flying 9-passenger Cessna 402's the Sponsor decided to drop the Part 139 certification to improve self-sustainability.

A number of recent improvements have been made at AUG necessitating the need to update the Airport Layout Plan (ALP). These improvements include the reconstruction and narrowing of Runway 17-35, installation of EMAS compliant Runway Safety Areas, removal of Taxiway Delta and Alpha, removal of a portion of the terminal apron, construction of a Remote Communications Outlet/Remote Transmitter Receiver (RCO/RTR) facility, updated sign and markings plan, obstruction removal, obstruction lighting, and construction of an FAA maintenance garage. Additionally, a number of future facility improvements have been identified for the Airport based on federal airport design requirements, the desires of existing airport tenants, and operational considerations. These future improvements include additional corporate style box hangars and possibly a less expensive roof only aircraft protection structure for small aircraft that are not used in the winter months. Relocating these aircraft by towing instead of taxiing from the current tiedown location to a simple protective structure would improve ramp availability for transient aircraft and reduce snow removal obstacles during the challenging winter months. A more dramatic solution to the constrained development area would permanently close the secondary runway 8-26. The following sections of this report will identify more specifically what the Airport Layout Plan Update is, the existing condition of the airport infrastructure and its properties, proposed future airport improvements, as well as provide a cursory review of anticipated implementation cost for the developed capital program.

Airport Layout Plan Update Study

Similar to an Airport Master Plan, the objective of updating an Airport Layout Plan is to determine the extent, type, and schedule of development needed to accommodate existing needs and future aviation demand at the airport of study. The ALP update differs from an Airport Master Plan in the scope and level of detail of the analysis performed. ALP updates tend to be focused on only the most substantive issues faced by an airport after gaining some understanding of the plausible aviation demand in the future. The Airport Master Plan on the other hand is a very comprehensive planning document which focuses on many of the same elements of an ALP update, but in much greater detail. Additionally, the ALP update is largely a graphical product depicting a variety of airport information with respect to both its existing and anticipated future conditions.

This study provides information regarding existing airport facilities and conditions, offers perspective relative to future levels of aeronautical activity, prescribes facility requirements over a 20-year planning horizon, and examines phasing and financing options for implementation of the specific development actions identified.

The ALP drawing set includes a depiction of the existing airport layout; an airport layout plan showing the proposed 20-year development for the airport; an obstruction analysis identifying obstructions to the FAR Part 77 surfaces (and other controlling airfield surfaces) based upon previously performed survey analysis acquired from multiple sources, and an airport property map showing parcel ownership and historical financial participation in parcel acquisitions.

EXISTING AIRPORT CONDITIONS

Airside Facilities

The Augusta State Airport is developed around two bi-directional runways and their supporting taxiway systems. Runway 17/35, measuring 5,001 feet long by 100 feet wide, is the Airport's primary runway and supports the majority of airport activities. Runway 17/35 is composed of an asphalt surface with a grooved surface to improve overall aircraft control when landing during a rain event. Runway 17/35 is rated for regular operations by aircraft weight 50,000 pounds or less with single wheel loading or 60,000 pounds or less with dual-wheel loading and is in excellent condition overall. This runway was recently reconstructed for the purpose of narrowing the original 150-foot wide runway to 100-feet and installing Engineered Material Arresting System (EMAS) at each end of the runway to ensure compliance with federally mandated Runway Safety Area (RSA) requirements.

Runway 8/26 is considered a secondary runway at the Airport as it is not required to ensure adequate wind coverage at the airfield – Runway 17/35 provides sufficient wind coverage for all aircraft by itself. This is an important conclusion from the development viewpoint and validated through analysis presented in **Appendix A** of this document. The Sponsor will need to discuss and determine the value of maintaining a second runway in the future. The potential land area for revenue generation would be dramatically increased if Runway 8-26 was decommissioned. Runway 8/26 measures 2,703 feet in length and 75 feet in width and is composed of an asphalt surface having no surface treatment. Runway 8/26 is rated for regular operations of aircraft weight 30,000 pounds or less with single wheel loading and is in good condition overall.

The existing runway system is served by a number of taxiways (between 40- and 50-foot in width). Runway 17/35 is primarily served by Taxiway Charlie which is a 40-foot wide asphalt taxiway parallel to the Runway and extending from its connection at Taxiway Alpha near the Runway 35 end to a point approximately 900 feet from the Runway 17 end.

In Modification of Standard 47, dated 1979, the FAA approved a nonstandard, less than full length taxiway noting that it would be extended in a future construction project. In an email on 8/15/2013, the FAA stated that it is no longer considered financially feasible to extend Charlie to the approach end of 17 due to the amount of earthen fill that would be required. A formal Modification of Standard request has been initiated to reflect that decision. The Modification of Standard 47, the email, and a draft of the modification of standard request are included in **Appendix B**. This appendix also includes a Modification of Standard approval 48 dated 1979 which addresses non-standard line of sight, and runway to taxiway centerline separations among other issues. Another updated draft Mod to Standard request is also included to allow these long standing existing conditions to continue.

Runway 8/26 is primarily served by Taxiway Echo which connects the apron areas to the Runway 8 end. The Runway 26 end is accessed via Taxiway Foxtrot which provides access from the east side of the apron areas to that Runway end. In addition to the Taxiways previously described, Taxiway Bravo is a cross-field taxiway located north of the Runway 17/35 and Runway 8/26 intersection. A number of connector taxiways exist between the primary taxiways and the Runways. These taxiways enable aircraft to access or depart the runway environment in a number of locations serving to maximize airfield capacity by minimizing aircraft runway occupancy times.

Supporting the runway and taxiway systems at AUG, a number of lighting systems are installed about the airfield and serve to increase operational safety during times of limited visibility. Runway 17-35 is equipped with High Intensity Runway Lighting (HIRLs) while Runway 8/26 is equipped with Medium Intensity Runway Lighting (MIRLs). Runway 17/35 is also equipped with a 4-box Precision Approach Path Indicator (PAPI) on each end. The ILS precision approach to the Runway 17 end is supported by a standard 2,400-foot Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MALSR) enabling pilots to descend on the electronic instrument glidepath to altitudes as low as 200 feet above ground level and in visibility conditions as low as ½ of a nautical mile prior to making a decision to land visually or execute a missed approach. The Runway 35 end is equipped with Runway End Identifier Lights (REILs). No additional visual aids or lighting systems beyond the MIRLs support operations on Runway 8/26. VOR/DME based non-precision approaches provide lateral guidance to the approach ends of runways 08, 17, 35, and a circling approach. The VOR with Distance Measuring Equipment (DME) antenna located midfield has a critical area of 1,000 feet to protect for signal interference. The proposed ALP identifies the existing location of the VOR/DME, as well as its critical area. The VOR 1,000-foot critical area is equivalent to a Building Restriction Line (BRL). Any proposed construction, grade change, massing of vehicles or aircraft within 1,000 feet of any VOR must be evaluated by the FAA in order to protect the integrity of the VOR operation. The area within the critical area must not be modified without prior approval from the FAA.

Augusta State Airport's existing runway data is tabulated in **Exhibit 1** on the following page.

Exhibit 1 Existing Runway Data

RUNWAY DATA					
ITEM		RUNWAY 17/35		RUNWAY 8/26	
RUNWAY CATEGORY		AIR CARRIER / GENERAL AVIATION		GENERAL AVIATION	
RUNWAY DIMENSIONS (L x W)		5,001' X 100'		2,703 X 75'	
EFFECTIVE GRADIENT (%)		0.80%		0.10%	
RUNWAY SAFETY AREA DIMENSIONS (WIDTH / LENGTH BEYOND RUNWAY END)		300' x 195' / 300' x 188' (EMAS on both ends)		120' x 150' & 120' x 240'	
MAX RUNWAY ELEVATION (AMSL)		349.79'		351.10'	
PAVEMENT TYPE		ASPHALT - GROOVED		ASPHALT	
PAVEMENT STRENGTH (x 1,000 LBS.)		50.0 SINGLE WHEEL / 60.0 DUAL WHEEL		30.0 SINGLE WHEEL	
DESIGN AIRCRAFT		KING AIR 200		PIPER NAVAJO	
RUNWAY LIGHTING		HIRL		MIRL	
RUNWAY MARKING		PRECISION		NON-PRECISION	
TAXIWAY LIGHTING		MITL		MITL	
RUNWAY DESIGN CODE (RDC)		B-II		A-I	
		RW17	RW35	RW8	RW26
TYPES OF INSTRUMENT APPROACH		ILS, GPS (LP,LNAV), VOR	GPS (LP,LNAV), VOR	GPS, VOR	VISUAL
APPROACH VISIBILITY MINIMUMS		1/2 MILE	1 MILE	1 MILE	VISUAL
NAVIGATIONAL AIDS		ILS /GPS / VOR(DME)	GPS / VOR(DME)	VOR	VISUAL
VISUAL AIDS		PAPI-4	PAPI-4	NONE	NONE
FAR PART 77 APPROACH CATEGORY		PRECISION	NON-PRECISION	NON-PRECISION	VISUAL
APPROACH SLOPE		50:1	34:1	34:1	20:1
RUNWAY END COORDINATES	LAT:	44° 19' 39.57"	44° 18' 55.53"	44° 19' 02.14"	44° 19' 14.64"
	LONG:	69° 48' 13.24"	69° 47' 42.11"	69° 47" 53.20"	69° 47' 20.36"
RUNWAY END ELEVATION		310.5'	347.2'	349.3'	351.1'
DISPLACED THRESHOLD COORDINATES	LAT:	N/A	N/A	N/A	N/A
	LONG:	N/A	N/A	N/A	N/A
DISPLACED THRESHOLD ELEVATION		N/A	N/A	N/A	N/A

NOTES:

1) ALL COORDINATES PROVIDED IN NAD 83
2) ALL ELEVATIONS PROVIDED IN NAVD 88

Landside and Support Facilities

A number of landside facilities exist at the Airport. Primarily, these include aircraft storage/maintenance hangars, Fixed-Base Operator (FBO) facilities, terminal building, maintenance facilities, and State/Federal buildings for storage and on-airfield equipment support. When the Airport supported commercial service with greater than nine seat aircraft they were required, per Part 139 regulations, to provide Aircraft Rescue and Fire Fighting (ARFF) services for those planes. A single bay garage addition was constructed on the north end of the Terminal building to house ARFF equipment. Snow Removal Equipment (SRE) is housed in a storage building on the west side of Runway 17-35. It is in excellent condition with four bays that can accommodate two vehicles each. Three of these are occupied by plows/ blowers and spreaders. The fourth bay has a heated sand storage stall that is showing signs of concrete wall spalling and cracks. Some of the on-airfield structures including the Maine DOT Storage Building and the CAP hangar (shown below) are considered to be at or beyond their design life and are being considered for demolition and replacement.

Exhibit 2 provides a tabulated list of on-airport structures, their use, size, and conditions.

Exhibit 2 Existing Facility Data

Structure	Use	Area (sq. ft.)	Condition
Terminal	Air Service, Bus Service, Rental Car, TSA, ARFF Garage, Restaurant	8,900	Fair
Maine Instrument Flight (MIF) Office	Office	4,430	Good
MIF Hangar	Aircraft Storage	6,800	Good
MIF Maintenance Hangar	Aircraft Maintenance	6,400	Unknown
MIF T-Hangars (25 Bays)			
Bldg # 7	Aircraft Storage	9,360	Good
Bldg #8	Aircraft Storage	6,336	Fair
Bldg #9	Aircraft Storage	11,492	Good
Civil Air Patrol (CAP) Hangar	Aircraft Storage	3,612	Fair
Maine DOT Building	Maintenance/Storage	3,260	Fair
Maine DOT Building	Storage	5,250	Poor
SRE Building	Storage/Maintenances Offices	11,200	Good

Maine DOT Storage Building

Civil Air Patrol Hangar

FACILITY REQUIREMENTS

The subsequent sections of this report will highlight basic facility requirements for AUG over the 20-year planning horizon. The identified facility requirements will be based on FAA design standards to which the Airport is obligated to adhere to per its federal grant obligations. In addition, the scenario put forth in the previous Master Plan which described transfer of a portion of Camp Keyes property to the Airport in order to develop additional based aircraft hangars is not likely to happen in the 20-year planning timeline. A more likely scenario to be examined is a deliberate decision by the Sponsor to permanently close runway 8/26 so as to provide additional developable land and minimize the financial burden on the State to maintain the airfield facilities.

Future Critical Aircraft and Airport Design Standards

Airfield improvements are planned and implemented according to the established Runway Design Code (RDC) and Taxiway Design Group (TDG). The RDC and TDG for each portion of an airfield are determined by the critical aircraft (aircraft with the widest wingspan, tallest tail height, and fastest approach speeds) that consistently makes substantial use of the airfield or portion thereof. FAA Order 5090.3B, Field Formulation of the National Plan of Integrated Airport Systems (NPIAS), defines "substantial use" as 500 or more annual aircraft operations (takeoffs and landings) or scheduled commercial service. An airfield's design or critical aircraft affects key aspects of airport design, such as the sizing of runways, taxiways/taxilanes, and the location of aircraft parking areas and other airport facilities.

The classification of a RDC is based on a combination of aircraft approach speed, wingspan, and tail height. The first character of the RDC (A, B, C, D, or E) represents the aircraft's approach speed and is called the Aircraft Approach Category (AAC). The second character of the RDC (I, II, III, IV, V, or VI) represents the aircraft wingspan and tail height and is called the Airplane Design Group (ADG). Each element of the RDC is independent and thus may represent a composite of one or more critical aircraft.

The previous airport layout plan prepared for AUG identified the Beechcraft 1900 (a B-II aircraft) and the Piper Navajo (mistakenly identified as a B-I when it is actually an A-I aircraft) as the critical aircraft for Runway 17-35 and Runway 8-26, respectively. Operational information derived from the FAA's Enhanced Air Traffic Management System Counts (ETMSC) database reveals that a number of B-II and larger aircraft make frequent use of Augusta's runway. This information is depicted in **Exhibit 3**. The Beech King Air 200/300 family is the most representative of the B-II critical aircraft that can be reasonably expected to use runway 17-35 and its associated infrastructure across the 20-year planning period. Runway 8-26 is used almost exclusively by A-I aircraft due to the length. For the purposes of updating AUG's Airport Layout Plan, the B-II aircraft will be utilized for spatial planning and regulatory compliance, both at present and into the future. FAA airfield design standards relative to A/B-I Small Aircraft, A/B-I, and A/B-II aircraft are identified in **Exhibit 4**, **Exhibit 5**, and **Exhibit 6**, respectively.

Exhibit 3 Operations by B-II or larger Aircraft, 2010-2012

Aircraft	ID	AAC	ADG	Operations
AC50 - Aero Commander 500	AC50	B	II	2
ASTR - IAI Astra 1125	ASTR	C	II	20
B190 - Beech 1900/C-12J	B190	B	II	5
B350 - Beech Super King Air 350	B350	B	II	45
BE18 - Beech 18	BE18	A	II	1
BE20 - Beech 200 Super King	BE20	B	II	342
BE30 - Raytheon 300 Super King Air	BE30	B	II	74
BE9L - Beech King Air 90	BE9L	B	II	14
C208 - Cessna 208 Caravan	C208	B	II	4
C25A - Cessna Citation CJ2	C25A	B	II	3
C25B - Cessna Citation CJ3	C25B	B	II	45
C441 - Cessna Conquest	C441	B	II	10
C501 - Cessna I/SP	C501	B	II	2
C510 - Cessna Citation Mustang	C510	B	II	38
C550 - Cessna Citation II/Bravo	C550	B	II	77
C560 - Cessna Citation V/Ultra/Encore	C560	B	II	132
C56X - Cessna Excel/XLS	C56X	C	II	179
C650 - Cessna III/VI/VII	C650	B	II	13
C680 - Cessna Citation Sovereign	C680	C	II	108
C750 - Cessna Citation X	C750	C	II	53
CL60 - Bombardier Challenger 600/601/604	CL60	C	II	35
E110 - Embraer EMB110	E110	B	II	1
F2TH - Dassault Falcon 2000	F2TH	B	II	51
F900 - Dassault Falcon 900	F900	B	II	148
FA20 - Dassault Falcon/Mystère 20	FA20	B	II	9
G150 - Gulfstream G150	G150	C	II	8
GLF2 - Gulfstream II/G200	GLF2	D	II	2
GLF3 - Gulfstream III/G300	GLF3	C	II	6
GLF4 - Gulfstream IV/G400	GLF4	D	II	58
			TOTAL	1485

Source: FAA ETMSC 2010-2012.

Table A7-1. Runway design standards matrix, A/B-I Small Aircraft

Aircraft Approach Category (AAC) and Airplane Design Group (ADG):		**A/B - I Small Aircraft**			
ITEM	**DIM** [1]	VISIBILITY MINIMUMS			
		Visual	Not Lower than 1 mile	Not Lower than 3/4 mile	Lower than 3/4 mile
RUNWAY DESIGN					
Runway Length	A	*Refer to paragraphs 302 and 304*			
Runway Width	B	60 ft	60 ft	60 ft	75 ft
Shoulder Width		10 ft	10 ft	10 ft	10 ft
Blast Pad Width		80 ft	80 ft	80 ft	95 ft
Blast Pad Length		60 ft	60 ft	60 ft	60 ft
Crosswind Component		10.5 knots	10.5 knots	10.5 knots	10.5 knots
RUNWAY PROTECTION					
Runway Safety Area (RSA)					
Length beyond departure end [10]	R	240 ft	240 ft	240 ft	600 ft
Length prior to threshold	P	240 ft	240 ft	240 ft	600 ft
Width	C	120 ft	120 ft	120 ft	300 ft
Runway Object Free Area (ROFA)					
Length beyond runway end	R	240 ft	240 ft	240 ft	600 ft
Length prior to threshold	P	240 ft	240 ft	240 ft	600 ft
Width	Q	250 ft	250 ft	250 ft	800 ft
Runway Obstacle Free Zone (ROFZ)					
Length		*Refer to paragraph 308*			
Width		*Refer to paragraph 308*			
Precision Obstacle Free Zone (POFZ)					
Length		N/A	N/A	N/A	N/A
Width		N/A	N/A	N/A	N/A
Approach Runway Protection Zone (RPZ)					
Length	L	1,000 ft	1,000 ft	1,700 ft	2,500 ft
Inner Width	U	250 ft	250 ft	1,000 ft	1,000 ft
Outer Width	V	450 ft	450 ft	1,510 ft	1,750 ft
Acres		8.035	8.035	48.978	79.000
Departure Runway Protection Zone (RPZ)					
Length	L	1,000 ft	1,000 ft	1,000 ft	1,000 ft
Inner Width	U	250 ft	250 ft	250 ft	250 ft
Outer Width	V	450 ft	450 ft	450 ft	450 ft
Acres		8.035	8.035	8.035	8.035
RUNWAY SEPARATION					
Runway centerline to:					
Parallel runway centerline	H	*Refer to paragraph 316*			
Holding Position [15]		125 ft	125 ft	125 ft	175 ft
Parallel taxiway/taxilane centerline [2, 4]	D	150 ft	150 ft	150 ft	200 ft
Aircraft parking area	G	125 ft	125 ft	125 ft	400 ft

Note:

- Values in the table are rounded to the nearest foot. 1 foot = 0.305 meters.

Table A7-2. Runway design standards matrix, A/B - I

Aircraft Approach Category (AAC) and Airplane Design Group (ADG):		A/B - I			
ITEM	**DIM** [1]	VISIBILITY MINIMUMS			
		Visual	Not Lower than 1 mile	Not Lower than 3/4 mile	Lower than 3/4 mile
RUNWAY DESIGN					
Runway Length	A	*Refer to paragraphs 302 and 304*			
Runway Width	B	60 ft	60 ft	60 ft	100 ft
Shoulder Width		10 ft	10 ft	10 ft	10 ft
Blast Pad Width		80 ft	80 ft	80 ft	120 ft
Blast Pad Length		100 ft	100 ft	100 ft	100 ft
Crosswind Component		10.5 knots	10.5 knots	10.5 knots	10.5 knots
RUNWAY PROTECTION					
Runway Safety Area (RSA)					
Length beyond departure end [10, 11]	R	240 ft	240 ft	240 ft	600 ft
Length prior to threshold	P	240 ft	240 ft	240 ft	600 ft
Width	C	120 ft	120 ft	120 ft	300 ft
Runway Object Free Area (ROFA)					
Length beyond runway end	R	240 ft	240 ft	240 ft	600 ft
Length prior to threshold	P	240 ft	240 ft	240 ft	600 ft
Width	Q	400 ft	400 ft	400 ft	800 ft
Runway Obstacle Free Zone (ROFZ)					
Length		*Refer to paragraph 308*			
Width		*Refer to paragraph 308*			
Precision Obstacle Free Zone (POFZ)					
Length		N/A	N/A	N/A	200 ft
Width		N/A	N/A	N/A	800 ft
Approach Runway Protection Zone (RPZ)					
Length	L	1,000 ft	1,000 ft	1,700 ft	2,500 ft
Inner Width	U	500 ft	500 ft	1,000 ft	1,000 ft
Outer Width	V	700 ft	700 ft	1,510 ft	1,750 ft
Acres		13.770	13.770	48.978	78.914
Departure Runway Protection Zone (RPZ)					
Length	L	1,000 ft	1,000 ft	1,000 ft	1,000 ft
Inner Width	U	500 ft	500 ft	500 ft	500 ft
Outer Width	V	700 ft	700 ft	700 ft	700 ft
Acres		13.770	13.770	13.770	13.770
RUNWAY SEPARATION					
Runway centerline to:					
Parallel runway centerline	H	*Refer to paragraph 316*			
Holding Position		200 ft	200 ft	200 ft	250 ft
Parallel taxiway/taxilane centerline [2, 4]	D	225 ft	225 ft	225 ft	275 ft
Aircraft parking area	G	200 ft	200 ft	200 ft	400 ft
Helicopter touchdown pad		*Refer to AC 150/5390-2*			

Note:

- Values in the table are rounded to the nearest foot. 1 foot = 0.305 meters.

Table A7-3. Runway design standards matrix, A/B - II

Aircraft Approach Category (AAC) and Airplane Design Group (ADG):		A/B - II			
ITEM	**DIM** [1]	VISIBILITY MINIMUMS			
		Visual	Not Lower than 1 mile	Not Lower than 3/4 mile	Lower than 3/4 mile
RUNWAY DESIGN					
Runway Length	A	*Refer to paragraphs 302 and 304*			
Runway Width	B	75 ft	75 ft	75 ft	100 ft
Shoulder Width		10 ft	10 ft	10 ft	10 ft
Blast Pad Width		95 ft	95 ft	95 ft	120 ft
Blast Pad Length		150 ft	150 ft	150 ft	150 ft
Crosswind Component		13 knots	13 knots	13 knots	13 knots
RUNWAY PROTECTION					
Runway Safety Area (RSA)					
Length beyond departure end [10, 11]	R	300 ft	300 ft	300 ft	600 ft
Length prior to threshold	P	300 ft	300 ft	300 ft	600 ft
Width	C	150 ft	150 ft	150 ft	300 ft
Runway Object Free Area (ROFA)					
Length beyond runway end	R	300 ft	300 ft	300 ft	600 ft
Length prior to threshold	P	300 ft	300 ft	300 ft	600 ft
Width	Q	500 ft	500 ft	500 ft	800 ft
Runway Obstacle Free Zone (ROFZ)					
Length		*Refer to paragraph 308*			
Width		*Refer to paragraph 308*			
Precision Obstacle Free Zone (POFZ)					
Length		N/A	N/A	N/A	200 ft
Width		N/A	N/A	N/A	800 ft
Approach Runway Protection Zone (RPZ)					
Length	L	1,000 ft	1,000 ft	1,700 ft	2,500 ft
Inner Width	U	500 ft	500 ft	1,000 ft	1,000 ft
Outer Width	V	700 ft	700 ft	1,510 ft	1,750 ft
Acres		13.770	13.770	48.978	78.914
Departure Runway Protection Zone (RPZ)					
Length	L	1,000 ft	1,000 ft	1,000 ft	1,000 ft
Inner Width	U	500 ft	500 ft	500 ft	500 ft
Outer Width	V	700 ft	700 ft	700 ft	700 ft
Acres		13.770	13.770	13.770	13.770
RUNWAY SEPARATION					
Runway centerline to:					
Parallel runway centerline	H	*Refer to paragraph 316*			
Holding Position		200 ft	200 ft	200 ft	250 ft
Parallel taxiway/taxilane centerline [2, 4]	D	240 ft	240 ft	240 ft	300 ft
Aircraft parking area	G	250 ft	250 ft	250 ft	400 ft
Helicopter touchdown pad		*Refer to AC 150/5390-2*			

Note:

- Values in the table are rounded to the nearest foot. 1 foot = 0.305 meters.

Airside Facility Requirements

The following sections will provide further insight into the existing airfield facilities at AUG and the airports overall level of compliance with airfield design and development standards set forth by the FAA as a means to identify and guide future airfield development/improvement interest at the Airport. To initiate this analysis approved modifications to standards in place at the Airport will be reviewed and a matrix developed to hone in on areas of concern on the airfield. Subsequently, a number of airside facility requirements will be presented, discussed, and included within the ALP drawing set developed as part of this effort.

Existing Modifications to Standards

A number of nonstandard conditions exist at AUG with respect to dimensional standards of Airport infrastructure and safety area, spatial relationships between Airport infrastructure, line-of-sight compliancy, and airspace conflicts. **Exhibit 7** tabulates the FAA approved modification to standards at AUG.

Exhibit 7 Existing Modifications to Standards

Record #	Condition	Status	Date	Action
MOS #19	Penetration to primary surface and 20:1 approach surface R/W 8-26	Approved	1/14/1977	Still Valid -No Action
MOS #21	Violation of primary surface and clear zone Runway 35	Approved	2/9/1977	Still Valid -No Action
MOS #22	Runway/taxiway separation less than 400' - (the design standard has changed to 300'. This Mod was written when Twy A existed but Twy C did not. However, Twy does not meet the standard at the 35 end.)	Approved	2/9/1977	Partially valid - No Action*
MOS #47	Nonstandard line-of-sight	Approved	8/18/1979	No Action. Airport to submit additional MOS request as mitigation via a full parallel Taxiway is too costly. See Appendix A
MOS #48	1. Safety area width; (Current RSA standard width is 300') 2. Parallel taxiway width; (Existing Taxiway width is 40', which is greater than the 35' standard) 3. Taxiway safety area; 4. Taxiway/rwy separation (Taxiway/Runway separation varies from 250' to 275', current standard is 300') 5. Runway longitudinal. grade 6. Bldg. Restriction. Line (BRLs are no longer a set distance)	Approved	8/18/1979	No Action
FAA RSA Determination	Deficient Runway Safety Areas on Runway 8	Approved	9/5/2008	Relocate Runway 8 Threshold 90'
	SRE BLDG within- VOR Critical Area	Approved	1991	Still Valid

Source: Updated from AUG ALP, 2008.

Substandard Airfield Elements

Beyond those substandard airfield conditions identified above, which have been reviewed and approved by the FAA, there are some airfield conditions which fail to meet federal directives for airport

design and should be mitigated through the Airport's capital improvement program in the coming years as funding allows. **Exhibit 8** provides a matrix analysis of airfield standards prescribed by the FAA for both B-II and A-I runways and how Runway 17-35 and Runway 8-26 meet those obligations. This analysis indicates deficiencies in the Runway 8 RSA and ROFA, lack of ownership/control of all RPZ areas, and separation standards for taxiways and hold position markings. In addition, the airport management has had numerous requests for additional hangar space. Currently, there is a lack of available space for corporate or charter multi-engine and jet aircraft with ADG II characteristics, (those with wingspans up to 79 feet and tail heights not exceeding 30 feet). These types of hangars are critical at a GA airport to provide maintenance space and weather protection for valuable corporate and charter customers. Another space issue at Augusta involves limited based aircraft winter tiedown areas. Some of these based small aircraft are not flown in the winter months and are tied down all winter in a central ramp area. This reduces the airports available ramp area for itinerant corporate aircraft and makes snow removal on the ramp challenging.

Summary of Airside Facility Requirements

As previously mentioned, the Airport Manager has been approached by developers and other individuals interested in building appropriately sized hangars. Three alternative layout plans for additional ADG I and II sized hangars using the currently constrained terminal area are shown as part of this ALP Update. In addition, in the event the Sponsor determines that only 17-35 needs to be maintained in the future, a possible full build out scenario with 8-26 no longer an active runway has been created and included in this study. The closure of 8-26 dramatically reduces the land constraints and allows for an equally dramatic increase in potential revenue through increased land and/or land and building leases. In addition, closing runway 8-26 would allow relocation or reconstruction of the existing T-hangars in a different location which in turn allows for additional itinerant and based aircraft parking close to the FBO. In the near future it is most prudent to downgrade the Runway to facilitate only small aircraft exclusively and refrain from incurring any additional grant obligations for that runway which may preclude its eventual closure.

If it is determined that 8-26 is critical to the airport then other alternatives must be explored to park aircraft over the winter months at locations that will not impact the itinerant ramp or impede snow removal. The most likely alternatives to create additional seasonal non-flyable tiedowns are on the west side of the field in the vicinity of the SRE storage facility. Due to terrain and grades the aircraft would be towed by an appropriate vehicle and not taxied to this seasonal tiedown area. Three alternatives are depicted in this report for that purpose with the Sponsor's preferred alternative being depicted on the Ultimate ALP.

Exhibit 8 Airfield Compliancy Matrix

	Required B-II Standard	Current RW17	Current RW35	Required A-I Standard	Current RW8	Current RW26
Runway Width	100'	100'		60'	75'	
Shoulder Width	10'	10' (Turf)		10'	10' (Turf)	
Runway Safety Area (RSA)						
Length Beyond Departure End	600'	*195'*	*188'*	240'	**147'**	240'
Length Prior to Threshold	600'	*195'*	*188'*	240'	**147'**	240'
Width	300'	300'		120'	120'	
Runway Object Free Area (ROFA)						
Length Beyond Departure End	600'	*200'*	*200'*	240'	**147'**	240'
Length Prior to Threshold	600'	*200'*	*200'*	240'	**147'**	240'
Width	800'	800'		400'	400'	
Runway Obstacle Free Zone (ROFZ)						
Length Prior to Runway End	200'	1,800'	200'	200'	**147'**	200'
Width	400'	400'		400'	400'	
Precision Obstacle Free Area (POFZ)						
Length	200'	200'	N/A	N/A	N/A	N/A
Width	800'	800'	N/A	N/A	N/A	N/A
Approach Runway Protection Zone (RPZ)						
Length	2,500'	2,500'	2,500'	1,000'	1,000'	1,000'
Inner Width	1,000'	1,000'	1,000'	500'	500'	500'
Outer Width	1,510'	1,510'	1,510'	700'	700'	700'
Acres (Owned)	78.914	**57.336**	**0.1**	13.77	**2.9**	**6.539**
Departure Runway Protection Zone (RPZ)						
Length	1,000'	N/A	N/A	1,000'	N/A	N/A
Inner Width	500'	N/A	N/A	500'	N/A	N/A
Outer Width	700'	N/A	N/A	700'	N/A	N/A
Acres (Owned/Controlled)	13.77	N/A	N/A	13.77	N/A	N/A
RUNWAY SEPARATION						
Runway Centerline to:						
Holding Position	250'	**215' - 218'**		200'	**130' - 200'**	
Parallel Taxiway/Taxilane Centerline	300'	**250' - 270'**		225'	**200'**	
Aircraft Parking Apron	400'	445'		200'	265'	
Helicopter Touchdown Pad		N/A	N/A		N/A	N/A

Notes:

1) *Italic* text denotes permissible substandard condition, **Bold** text denotes substandard condition.

2) Departure RPZ's not currently required as no displaced threshold exist.

3) Substandard RSA lengths prior to and beyond runway ends are permissible - mitigated by EMAS systems.

4) ROFZ exceeds limits prior to Runway 17 to provide Inner-Approach OFZ for Approach Lighting System protection.

Source: Hoyle, Tanner and Associates, Inc., 2013.

Landside Facility Requirements

Landside facility requirements are primarily predicated upon the level of aeronautical activities at an airport, the needs and desires of based aircraft owners, and the level of service an airport intends to provide to both its local and itinerant operators. **Appendix C** of this document offers some perspective on future levels of aeronautical activities at AUG by utilizing both historical trend and market share modeling techniques to forecast levels of traffic through a 20-year forecast horizon. However, such a forecasting effort only presents future expectations of activity based on historical events and does not account for the Airports ability to affect its own future, grow its own operations, or market its attractiveness new potential new tenants. As such, the future airport landside development depicted in the Airport Layout Plan takes a broader view of airport development in the future and is not tied explicitly to forecasted levels of activity, but rather presents a landside development plan capable of being phased in accordance with Airport needs.

A number of landside development scenarios were developed as part of this ALP update and discussed with Airport sponsor. **Appendix D** of this document depicts each of these alternative development layouts and establishes the preferred layout as depicted on the ALP drawings shown at the end of this report.

CAPITAL IMPROVEMENT PROGRAM

The preceding narrative has identified a number of projects necessary for Augusta State Airport to maintain compliance with federal standards for public airports and meet its grant obligations, accommodate the anticipated of levels of future aeronautical demand, and provide for substantive economic development opportunities. As previously recognized, specific improvements to both airside and landside elements of the Airport are recommended for implementation over the 20-year planning horizon. The projects included in the development plan and depicted on the ALP form the basis of the Airport's capital improvement program (CIP).

It is the primary purpose of this section to: (1) itemize the individual development projects or development related projects required to fulfill the preferred development plan for the Augusta State Airport as depicted on the ALP; (2) Establish a phasing plan for the development projects which is logical, efficient, and implementable; and (3) Review available funding sources and make assumptions as to the probable funding structure for each itemized project.

The CIP includes projects that represent the Airport's planned growth over the next 20 years. Additionally, the proposed facilities reflect strategic development initiatives intended to maximize the safety and utilization of the Airport. As part of the planning process, project phasing and cost estimates are included in the CIP in order to manage and plan for the implementation requirements associated with these development projects.

Development Phasing

Development phasing seeks to establish a tentative schedule for the various projects required to fulfill the future development goals of the Augusta State Airport. Essentially the schedule represents a prioritized airport development plan to meet regulatory issues, forecasted levels of activities, and/or development interest of the airport sponsor. Naturally, projects appearing in the first phase are of the greatest importance to the airport and have the least tolerance for delay. Additionally, some projects included in an early phase may be a prerequisite for other planned improvements in a later phase. The development phasing for AUG has been divided into three distinct phases as follows:

- Phase I: (0 to 5 years), 2014-2018
- Phase II: (6 to 10 years), 2019-2023
- Phase III: (11 to 20 years), 2024-2033

It should be pointed out here, however, that the phasing of individual projects should undergo periodic review to determine the need for changes based upon variations in forecast demand, available funding, economic conditions, and/or other conditions which may reasonably influence airport development. Additionally, other projects not foreseen in the report may be identified in the future and would, therefore, likely necessitate changes in the phasing of projects and the prioritization of the overall CIP. Further, the projects and overall development identified in the CIP, though tied to a time table, will only occur once the triggering demand and/or need is realized.

Phase I Near-Term Development (2014-2018)

In the first five years of the CIP projects include demolishing obsolete existing hangars and buildings and replacing them with additional apron or new hangars for corporate or business class transient aircraft, adding a lean-to storage structure on the north side of the existing SRE building to provide additional space for equipment storage, installing a new diesel above-ground storage tank and pump for SRE equipment, and creating a gravel winter tiedown area or snowshade on the west side of the field for non-winter flying based aircraft.

Phase II Mid-Term Development (2019-2023)

In the second five years of the CIP the primary focus will need to be on creating additional apron and corporate hangars on the east side of the field. Additional efforts will include providing upgraded fencing, security gates and automobile parking in the immediate vicinity of the hangars and aprons. Further, a new terminal building and expansion to the terminal area parking lot are slated for this development period.

Phase III Long-Term Development (2024-2033)

By the last ten years or Phase III of the CIP it is anticipated that as paving condition on Runway 8/26 deteriorates a decision will need to be made about the long term cost and benefit of Runway 8/26. The runway was reconstructed in 1991 and overlaid in 2002. By the end of its useful life an argument could be made to permanently close the runway since it is not needed to meet crosswind landing parameters. Closing 8/26 would reduce reconstruction and maintenance costs and dramatically increase the suitable land area for aeronautical development by the Sponsor and/or private developers. In addition, the useful life of the older nested T-hangars will be at an end and they could be razed or re-located to expand itinerant apron space nearest to the terminal. Furthermore, the existing commercial service terminal building at the Airport should be replaced in this phase to provide a more up-to-date and secure space for traveling passengers as well as make room for an expanded parking area.

Summary

The goal of any airport capital improvement program is to wisely plan for and use the resources available in a manner that most efficiently provides for the needs of the flying public. At the Augusta State Airport, with its constrained terminal development area it becomes very important to initially maximize the usable available ramp and hangar space for itinerant corporate, government, and business travelers followed by creating developable space for based aircraft tiedowns and hangars. Existing buildings that have reached the end of their useful life must be replaced with revenue producing tiedowns or hangars. Aircraft that are rarely used should be relocated to locations outside of the traditional operating area and

charged reduced seasonal tiedown fees. In the long term, hard decisions about closing a runway to reduce maintenance costs and provide additional aeronautical development areas must be made.

Exhibit 9 identifies Phase I, II, and III projects, their rough-order cost estimates, and the anticipated funding participation between project stakeholders.

Exhibit 9 Capital Improvement Program

Phase	Projects	Total Project	FAA Share	Maine DOT Share
Phase I (2014-2018)	Demolish bldgs 4, 5, and 6	75,000	67,500	7,500
	Build Replacement Corporate Sized Hangar To House Civil Air Patrol	400,000	360,000	40,000
	Construct Additional Transient Or Based Apron On East Ramp	300,000	270,000	30,000
	Construct Additional Storage Lean-To On North Side SRE Building	30,000		30,000
	Construct Gravel Winter Aircraft Tiedown Area On North West Side Of The Field	100,000	90,000	10,000
	Install Diesel AST for SRE Equipment	18,000	16,200	1,800
	Construct Corporate Sized Box Hangar(S) On East Side	300,000	270,000	30,000
		1,223,000	**1,073,700**	**149,300**
Phase II (2019-2023)	Construct Additional Tiedown Apron on East Side	500,000	450,000	25,000
	Construct 2 Corporate sized Box Hangars on the East Side	750,000	675,000	37,500
	Fencing, security Gates, and Automobile Parking Improvements	250,000	225,000	12,500
	New terminal building, old terminal demolition, and parking lot expansion.	2,500,000	2,225,000	250,000
		4,000,000	**3,575,000**	**325,000**
Phase III (2024-2034)	Decommission Runway 8/26 and change to Taxiway	250,000	225,000	12,500
	Construct new Nested T Hangars w/ Apron	1,000,000	900,000	50,000
	Construct Corporate sized Box Hangars	400,000	360,000	20,000
	Replace Commercial Service Terminal & Expand Parking	TBD	TBD	TBD
		1,650,000	**1,485,000**	**82,500**

AIRPORT LAYOUT PLAN DRAWINGS

Presented on the following pages are a series of individual drawings which together comprise the updated Airport Layout Plan (ALP) drawing set for Augusta State Airport (AUG). These drawings in their original form are formatted to be printed on 24" x 36" paper size in order to meet certain requirements prescribed by the FAA for ALP sets. As such, the reduced size drawings (11" x 17") presented in this document are not true half-size drawings and therefore not correctly scaled. No attempt should be made to utilize a scale ruler to take measurements from these reduced size drawings.

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE

AIRPORT LAYOUT PLAN
DRAWING SET

VICINITY MAP

LOCATION MAP

Augusta Your Maine Connection!
STATE AIRPORT

AIRPORT SPONSOR: MAINE DEPARTMENT OF TRANSPORTATION

AIRPORT OWNERSHIP AND MANAGEMENT

The Augusta State Airport is owned by the State of Maine and operated under the management of the City of Augusta, Airport Manager, John A. Guimond.

Augusta State Airport
75 Airport Road
Augusta, ME 04330

Maine Department of Transportation
16 State House Sta.
Augusta, ME 04333

FAA AIP# 3-23-0003-027-2013

STATE GRANT # 018450.00

AIRSPACE REVIEW: NRA-XXX-XXX-XXX

OCTOBER 2013

INDEX OF DRAWINGS

1	COVER SHEET
2	EXISTING FACILITIES DRAWING
3	AIRPORT LAYOUT PLAN
4	TERMINAL AREA PLAN #1 - EAST SIDE
5	TERMINAL AREA PLAN #2 - WEST SIDE
6	RUNWAY 17 INNER PORTION OF THE APPROACH SURFACE PLAN
7	RUNWAY 35 INNER PORTION OF THE APPROACH SURFACE PLAN
8	RUNWAY 8-26 INNER PORTION OF THE APPROACH SURFACE PLAN
9	FAR PART 77 AIRSPACE SURFACES #1
10	FAR PART 77 AIRSPACE SURFACES #2 AND OBSTRUCTION TABLE
11	AIRPORT PROPERTY MAP
12	AIRPORT PROPERTY DATA

PLANS PREPARED BY:

Hoyle, Tanner & Associates, Inc.

150 Dow Street | Manchester, NH 03101
Office: (603) 669-5555 | Fax: (603) 669-4168

On-Airport Buildings		
Building ID	Description	Elev. (AMSL)
1	Terminal	381.1'
2	FBO/Maine Instrument Flight	384.3'
3	FBO Maintenance Hangar	371.8'
4	Maintenance Garage/Offices - State	373.3'
5	Sand Storage - State	370.5'
6	Civil Air Patrol	361.2'
7	T-Hangars- Privately Owned	365.1'
8	T-Hangars- Privately Owned	365.7'
9	T-Hangars- Privately Owned	365.1'
10	VOR Control Building - FAA	375.0'
11	Snow Removal Equipment Storage	343.9'
12	Garage Buildings	±323.0'

-16.08056°

GRAPHIC SCALE
0' 400' 800'

MAGNETIC DECLINATION 16.08056° W
CHANGES 5.3' EAST / YR

Drawing name: I:\306402\data\From Zach Final 12.27.13\AUG_Augusta Maine_ALP_DWGs\03-4_AUG_ALP-&-TAP.dwg Dec 30, 2013 - 3:22pm

REVISIONS	
DATE	DESCRIPTION

Augusta Your Maine Connection! STATE AIRPORT

PROJECT

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE
AIRPORT LAYOUT PLAN UPDATE

SHEET TITLE

EXISTING AIRPORT CONDITIONS

Hoyle, Tanner & Associates, Inc.

AIP NO.: 3-23-0003-027-2013
PROJ. NO.: 306402
DRAWN: -ZEN
DESIGN: -ZEN/ERM
CHECKED: -ERM/NEG
DATE: OCTOBER 2013

SHEET 2 OF 12

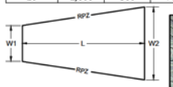
RUNWAY DATA

ITEM	RUNWAY 17/35				RUNWAY 8/26			
	EXISTING		PROPOSED		EXISTING		PROPOSED	
RUNWAY CATEGORY	AIR CARRIER / GENERAL AVIATION		SAME		GENERAL AVIATION		GENERAL AVIATAION - SMALL AIRCRAFT EXCLUSIVE	
RUNWAY DIMENSIONS (L x W)	5,001' X 100'		SAME		2,703 X 75'		2,613' x 75'	
EFFECTIVE GRADIENT (%)	0.80%		SAME		0.10%		SAME	
RUNWAY SAFETY AREA DIMENSIONS (WIDTH / LENGTH BEYOND RUNWAY END)	300' x 195' & 300' x 188' (EMAS on both ends)		SAME		120' X 150' & 120' X 240'		120' X 240' & SAME	
MAX RUNWAY ELEVATION (AMSL)	349.79'		SAME		351.10'		SAME	
PAVEMENT TYPE	ASPHALT - GROOVED		SAME		ASPHALT		SAME	
PAVEMENT STRENGTH (x 1,000 LBS.)	50.0 SINGLE WHEEL / 60.0 DUAL WHEEL		SAME		30.0 SINGLE WHEEL		SAME	
DESIGN AIRCRAFT	KING AIR 200		SAME		PIPER NAVAJO		SAME	
RUNWAY LIGHTING	HIRL		SAME		MIRL		SAME	
RUNWAY MARKING	PRECISION		SAME		NON-PRECISION / NON-PRECISION		SAME	
TAXIWAY LIGHTING	MITL		SAME		MITL		SAME	
AIRPORT REFERENCE CODE (ARC)	B-II		SAME		A-I		A-I (SMALL AIRCRAFT EXCLUSIVE)	
	RW17	RW35	RW17	RW35	RW8	RW26	RW8	RW26
TYPES OF INSTRUMENT APPROACH	ILS, GPS (LP,LNAV), VOR	GPS (LP,LNAV), VOR	SAME	SAME	GPS, VOR	VISUAL	SAME	SAME
APPROACH VISIBILITY MINIMUMS	1/2 MILE	1 MILE	SAME	SAME	1 MILE	VISUAL	SAME	SAME
NAVIGATIONAL AIDS	ILS /GPS / VOR(DME)	GPS / VOR(DME)	SAME	SAME	GPS/VOR(DME)	VISUAL	SAME	SAME
VISUAL AIDS	PAPI-4	PAPI-4	SAME	SAME	NONE	NONE	SAME	SAME
FAR PART 77 APPROACH CATEGORY	PRECISION	NON-PRECISION	SAME	SAME	NON-PRECISION	VISUAL	SAME	SAME
APPROACH SLOPE	50:1	34:1	SAME	SAME	34:1	20:1	20:1	SAME
RUNWAY END COORDINATES LAT:	44° 19' 39.57"	44° 18' 55.53"	SAME	SAME	44° 19' 02.14"	44° 19' 14.64"	44° 19' 02.56"	SAME
RUNWAY END COORDINATES LONG:	69° 48' 13.24"	69° 47' 42.11"	SAME	SAME	69° 47' 53.20"	69° 47' 20.36"	69° 47' 52.11"	SAME
RUNWAY END ELEVATION	310.5'	347.2'	SAME	SAME	349.3'	351.1'	349.4'	SAME
DISPLACED THRESHOLD COORDINATES LAT:	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISPLACED THRESHOLD COORDINATES LONG:	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DISPLACED THRESHOLD ELEVATION	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NOTES;
1) ALL COORDINATES PROVIDED IN NAD 83
2) ALL ELEVATIONS PROVIDED IN NAVD 88

RUNWAY PROTECTION ZONE DATA

RUNWAY END	EXISTING L (FT)	EXISTING W1 (FT)	EXISTING W2 (FT)	PROPOSED L (FT)	PROPOSED W1 (FT)	PROPOSED W2 (FT)
17	2,500	1,000	1,750	Same	Same	Same
35	2,500	1,000	1,750	Same	Same	Same
8	1,000	500	700	1,000	250	450
26	1,000	500	700	1,000	250	450



On-Airport Buildings

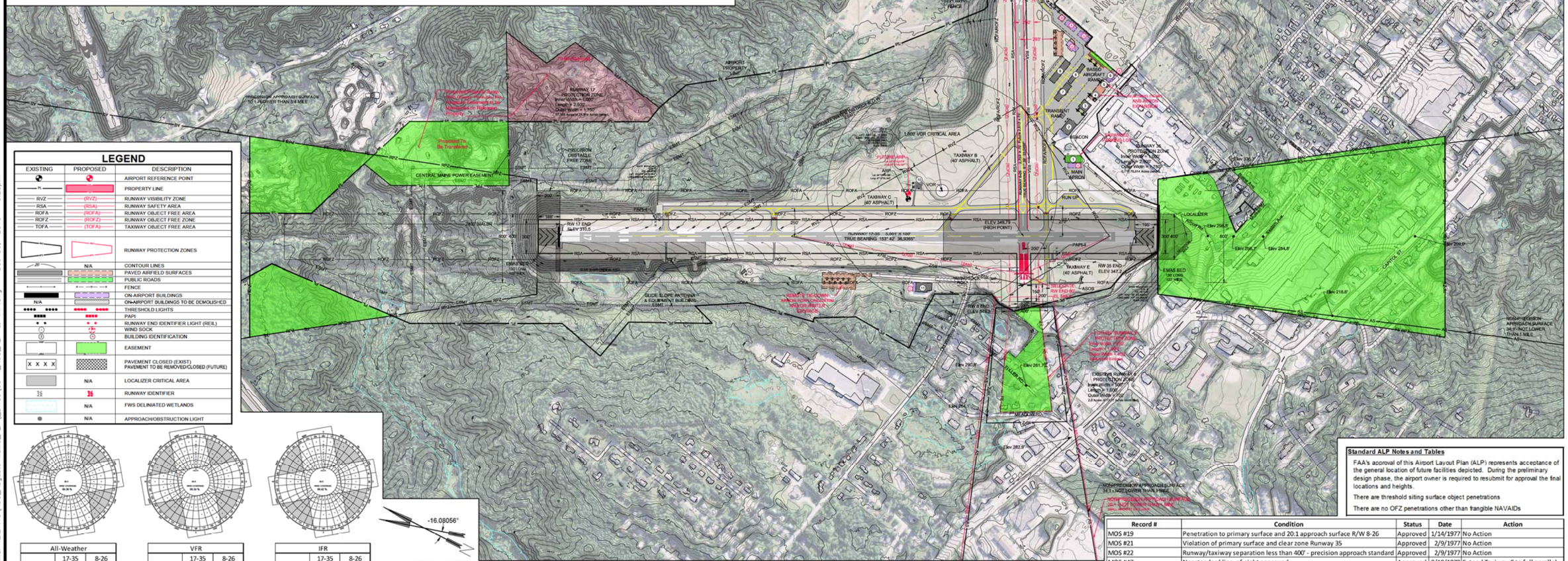
Building ID	Description	Elev. (AMSL)
1	Terminal	381.1'
2	FBO/Maine Instrument Flight	384.3'
3	FBO Maintenance Hangar	371.8'
4	Maintenance Garage/Offices - State	373.3'
5	Sand Storage - State	370.5'
6	Civil Air Patrol	361.2'
7	T-Hangars- Privately Owned	365.1'
8	T-Hangars- Privately Owned	365.7'
9	T-Hangars- Privately Owned	365.1'
10	VOR Control Building - FAA	375.0'
11	Snow Removal Equipment Storage	343.9'
12	Garage Buildings	±323.0'

Future On-Airport Buildings

Building ID	Description
A	Executive Hangars
B	Small Box Hangars
C	SRE Lean-To Addition
D	New Terminal Building

AIRPORT DATA TABLE

AIRPORT DATA	EXISTING	PROPOSED
Airport Elevation (MSL)	352'	Same
Airport Reference Point (NAD 83)		
Latitude	44° 19' 14.3363"	44° 19' 14.5377"
Longitude	69° 47' 50.3452"	69° 47' 49.7917"
Mean Max Temperature of Hottest Month	77°	77°
Airport & Terminal Area NAVAIDS	Seg Circle, Windsock, Beacon, VOR, ILS, GS	Same
Magnetic Variation	16.08056° W	Changing by 5.3° E per year
Date of Magnetic Variation	7/1/2013	N/A
NPIAS Service Level	Commercial Service	Same
State Service Level / Asset	Level 1 / Regional	Same
Wind Coverage:		
All Weather @ 10.5 knots	99.38%	
VFR @ 10.5 Knots	99.34%	
IFR @ 10.5 Knots	99.42%	
Airport Reference Code	B-II & A-I	Same + Small Acft (8-26)
Design Aircraft	King Air 200 & Piper Navajo	Same
Taxiway Lighting	MITL	MITL
Taxiway Marking	Centerline	Centerline



LEGEND

EXISTING	PROPOSED	DESCRIPTION
		AIRPORT REFERENCE POINT
		PROPERTY LINE
RVZ	(RVZ)	RUNWAY VISIBILITY ZONE
RSA	(RSA)	RUNWAY SAFETY AREA
ROFA	(ROFA)	RUNWAY OBJECT FREE AREA
ROFZ	(ROFZ)	RUNWAY OBJECT FREE ZONE
TOFA	(TOFA)	TAXIWAY OBJECT FREE AREA
		RUNWAY PROTECTION ZONES
20	N/A	CONTOUR LINES
		PAVED AIRFIELD SURFACES
		PUBLIC ROADS
		FENCE
		ON-AIRPORT BUILDINGS
N/A		ON-AIRPORT BUILDINGS TO BE DEMOLISHED
		THRESHOLD LIGHTS
		PAPI
		RUNWAY END IDENTIFIER LIGHT (REIL)
		WIND SOCK
		BUILDING IDENTIFICATION
		EASEMENT
		PAVEMENT CLOSED (EXIST) PAVEMENT TO BE REMOVED/CLOSED (FUTURE)
N/A		LOCALIZER CRITICAL AREA
36	36	RUNWAY IDENTIFIER
N/A		FWS DELINIATED WETLANDS
N/A		APPROACH/OBSTRUCTION LIGHT

All-Weather	17-35	8-26
10.5-Knots	95.32%	89.30%
13 - Knots	97.81%	N/A
Combined	99.36%	

VFR	17-35	8-26
10.5-Knots	94.87%	90.12%
13 - Knots	97.58%	N/A
Combined	99.34%	

IFR	17-35	8-26
10.5-Knots	97.05%	86.23%
13 - Knots	98.69%	N/A
Combined	99.42%	

Source: KAUG
Period: 2002-2012
Observations: 90.248 / 71.336 / 18.912
Source: National Climatic Data Center, Asheville North Carolina

GRAPHIC SCALE
0' 400' 800'
MAGNETIC DECLINATION 16.08056° W
CHANGES 5.3' EAST / YR

Standard ALP Notes and Tables

FAA's approval of this Airport Layout Plan (ALP) represents acceptance of the general location of future facilities depicted. During the preliminary design phase, the airport owner is required to resubmit for approval the final locations and heights.

There are threshold siting surface object penetrations

There are no OFZ penetrations other than frangible NAVAIDs

Record #	Condition	Status	Date	Action
MOS #19	Penetration to primary surface and 20:1 approach surface R/W 8-26	Approved	1/14/1977	No Action
MOS #21	Violation of primary surface and clear zone Runway 35	Approved	2/9/1977	No Action
MOS #22	Runway/taxiway separation less than 400' - precision approach standard	Approved	2/9/1977	No Action
MOS #47	Nonstandard line-of-sight approved	Approved	8/18/1979	Extend Taxiway C to full parallel
MOS #48	1. Safety area width; 2. Parallel tway width; 3. Tway safety area; 4. tway/rwy separation; 5. rwy long. Grade; 6. Bldg. restr. Line	Approved	8/18/1979	No Action
SRE Bldg - VOR	SRE Building within limits of VOR Critical Area	Approved	1991	No Action
FAA RSA Determination	Deficient Runway Safety Areas on Runway 17-35 and Runway 8	Approved	9/5/2008	Installed EMAS pads on 17 and 35, Relocate Runway 8 Threshold 90'

State Aviation Department Approval
This Airport Layout Plan Is Hereby Approved
Signature: _____ Date: _____
Name
Title

FAA Approval
This Airport Layout Plan Is Hereby Approved
Signature: _____ Date: _____
Name
Title

REVISIONS

DATE	DESCRIPTION

Augusta Your Maine Connection! STATE AIRPORT

PROJECT
AUGUSTA STATE AIRPORT
AUGUSTA, MAINE
AIRPORT LAYOUT PLAN UPDATE

SHEET TITLE
AIRPORT LAYOUT PLAN

Hoyle, Tanner & Associates, Inc.

AIP NO.: 3-23-0003-027-2013
PROJ. NO.: 306402
DRAWN: -ZEN
DESIGN: -ZEN/ERM
CHECKED: -ERM/NEG
DATE: OCTOBER 2013

SHEET 3 OF 12

Drawing name: I:\306402\data\From Zach Final 12.27.13\AUG_Augusta Maine_ALP_DWGs\03-4_AUG_ALP-&-TAP.dwg Dec 30, 2013 - 3:23pm

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7	T-Hangars- Privately Owned	365.1'
8	T-Hangars- Privately Owned	365.7'
9	T-Hangars- Privately Owned	365.1'
10	VOR Control Building - FAA	375.0'
11	Snow Removal Equipment Storage	343.9'
12	Garage Buildings	±323.0'

Future On-Airport Buildings	
Building ID	Description
A	Executive Hangars
B	Small Box Hangars
C	SRE Lean-To Addition
D	New Terminal Building

TAXIWAY F
(40' ASPHALT)

TAXIWAY E
(40' ASPHALT)

TAXIWAY B
(40' ASPHALT)

RUNWAY 8-26 2,703' X 75' Future 2,613' x 75')
TRUE BEARING 61° 39' 33.0468"

1,000' VOR CRITICAL AREA

-16.08056°

GRAPHIC SCALE
0' 100' 200'
MAGNETIC DECLINATION 16.08056° W
CHANGES 5.3' EAST / YR

Drawing name: H:\306402\data\From Zach Final 12.27.13\AUG_Augusta Maine_ALP_DWGs\03-4_AUG_ALP-&-TAP.dwg Dec 30, 2013 - 3:25pm

REVISIONS	
DATE	DESCRIPTION

Augusta Your Maine Connection! STATE AIRPORT

PROJECT
AUGUSTA STATE AIRPORT
AUGUSTA, MAINE
AIRPORT LAYOUT PLAN UPDATE

SHEET TITLE
TERMINAL AREA PLAN #1
EAST TERMINAL AREA
IMPROVEMENTS

Hoyle, Tanner & Associates, Inc.

AIP NO.: 3-23-0003-027-2013
PROJ. NO.: 306402
DRAWN: -ZEN
DESIGN: -ZEN/ERM
CHECKED: -ERM/NEG
DATE: OCTOBER 2013

SHEET 4 OF 12

On-Airport Buildings		
Building ID	Description	Elev. (AMSL)
1	Terminal	381.1'
2	FBO/Maine Instrument Flight	384.3'
3	FBO Maintenance Hangar	371.8'
4	Maintenance Garage/Offices - State	373.3'
5	Sand Storage - State	370.5'
6	Civil Air Patrol	361.2'
7	T-Hangars- Privately Owned	365.1'
8	T-Hangars- Privately Owned	365.7'
9	T-Hangars- Privately Owned	365.1'
10	VOR Control Building - FAA	375.0'
11	Snow Removal Equipment Storage	343.9'
12	Garage Buildings	±323.0'

Future On-Airport Buildings	
Building ID	Description
A	Executive Hangars
B	Small Box Hangars
C	SRE Lean-To Addition
D	New Terminal Building

RUNWAY 8-26 2,703' X 75' Future 2,613' x 75'
TRUE BEARING 61° 39' 33.0468"

TAXIWAY B
(40' ASPHALT)

1,000' VOR CRITICAL AREA

VOR

TAXIWAY C
(40' ASPHALT)

ARP
Lat: 44°19'14.339"
Long: 69°47'50.345"

Future ARP
Lat: 44°19'13.070"
Long: 69°47'49.782"

RUNWAY 17-35 5,001' X 100'
TRUE BEARING 153° 42' 36.9365"

137'
291'
25'
Remote Tie-Down Apron

ESMT

-16.08056°

GRAPHIC SCALE
0' 100' 200'
MAGNETIC DECLINATION 16.08066° W
CHANGES 5.3' EAST / YR

Drawing name: H:\306402\data\From Zach Final 12.27.13\AUG_Augusta Maine_ALP_DWGs\03-4_AUG_ALP-&-TAP.dwg Dec 30, 2013 - 3:26pm

REVISIONS	
DATE	DESCRIPTION

Augusta Your Maine Connection! STATE AIRPORT

PROJECT

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE
AIRPORT LAYOUT PLAN UPDATE

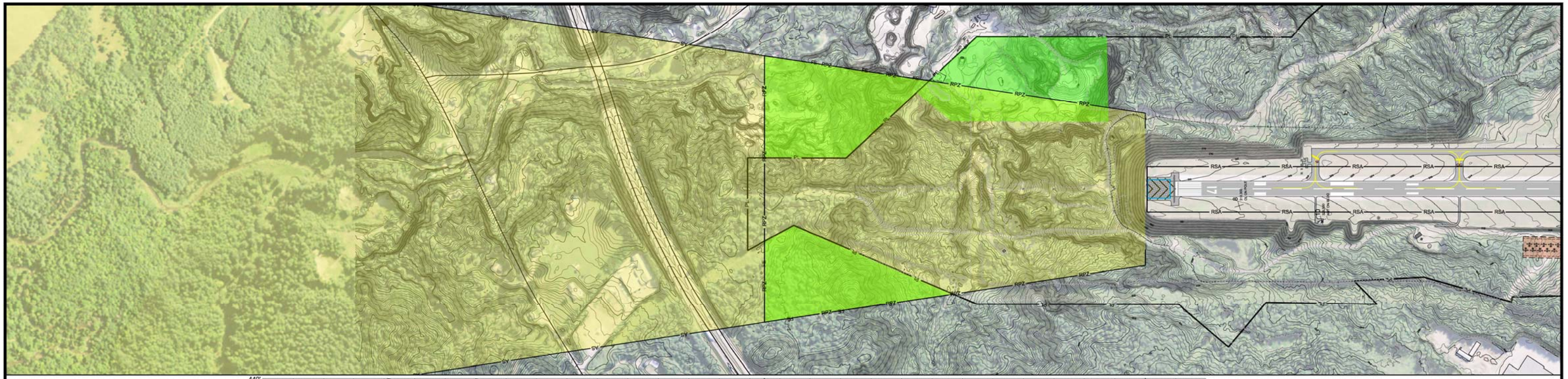
SHEET TITLE

TERMINAL AREA PLAN #2
WESTSIDE DEVELOPMENT
WINTER TIE DOWN APRON

Hoyle, Tanner & Associates, Inc.

AIP NO.:	3-23-0003-027-2013
PROJ. NO.:	306402
DRAWN:	-ZEN
DESIGN:	-ZEN/ERM
CHECKED:	-ERM/NEG
DATE:	OCTOBER 2013

SHEET 5 OF 12



-16.08056°

MAGNETIC DECLINATION 16.08056° W
CHANGES 5.3' EAST / YR

NO IDENTIFIED PENETRATIONS

LEGEND	
	ROADWAYS
	LIGHT POLES/POLES
	FENCES
	TREES
	OBS LIGHT

GRAPHIC SCALE
300' 0 600'
60' 0 30'

REVISIONS	
DATE	DESCRIPTION

Augusta Your Maine Connection! STATE AIRPORT

PROJECT
AUGUSTA STATE AIRPORT
AUGUSTA, MAINE
AIRPORT LAYOUT PLAN UPDATE

SHEET TITLE
RUNWAY 17
INNER PORTION OF THE
APPROACH SURFACE
PLAN AND PROFILE DRAWING

Hoyle, Tanner & Associates, Inc.

AIP NO.: 3-23-0003-027-2013
PROJ. NO.: 306402
DRAWN: -ZEN
DESIGN: -ZEN/ERM
CHECKED: -ERM/NEG
DATE: OCTOBER 2013

SHEET 6 OF 12

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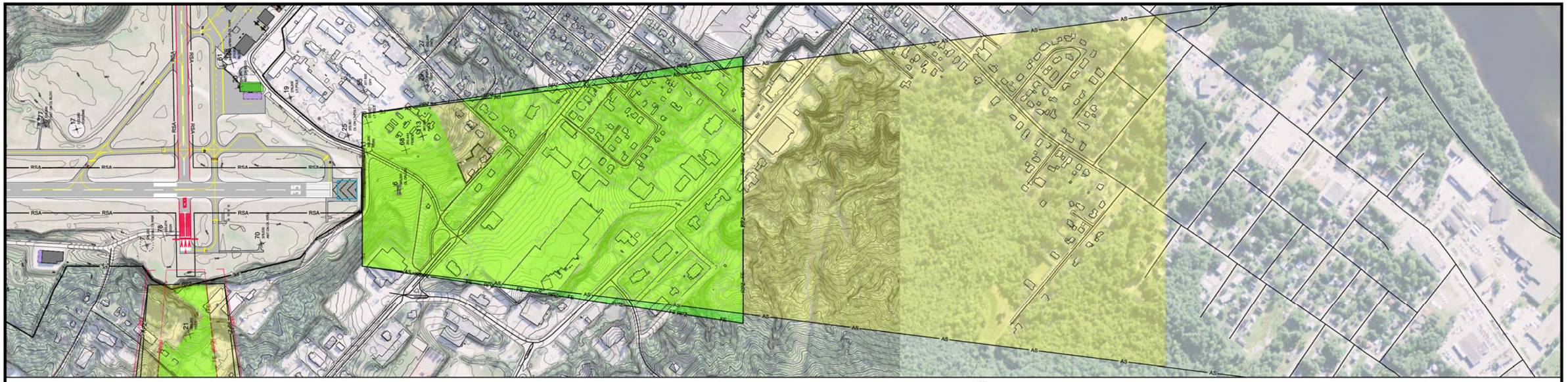
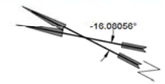




MAGNETIC DECLINATION 16.08056° W
CHANGES 5.3' EAST / YR

RUNWAY 35 OBSTRUCTION TABLE

KEY	DESCRIPTION	ELEVATION (AMSL)	PART 77 APPROACH SURFACE ELEVATION (AMSL)	APPROACH SURFACE PENETRATION (FT)	DISPOSITION
11	ROAD	355.300	348.0778559	7.22	Lighted
26	LT POLE	375.227	348.2716853	26.96	Lighted
113	POLE	387.000	358.7927206	28.21	Lighted

LEGEND

- ROADWAYS
- LIGHT POLES/POLES
- FENCES
- TREES
- OBS LIGHT

GRAPHIC SCALE
300' 0 600'
60' 0 30'

REVISIONS	
DATE	DESCRIPTION

Augusta Your Maine Connection! STATE AIRPORT

PROJECT

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE
AIRPORT LAYOUT PLAN UPDATE

SHEET TITLE

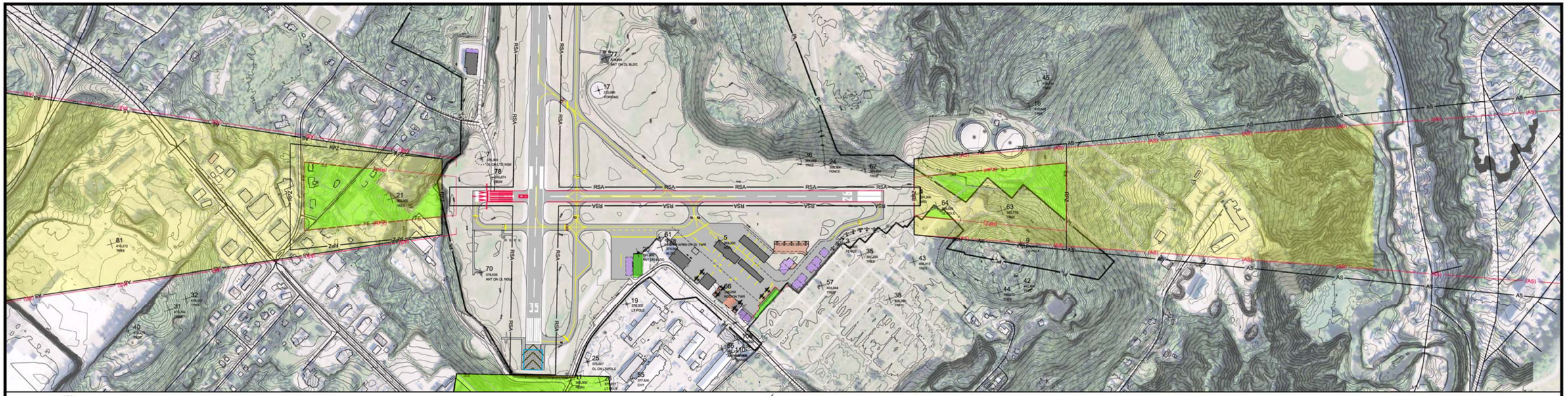
RUNWAY 35
INNER PORTION OF THE
APPROACH SURFACE
PLAN AND PROFILE DRAWING

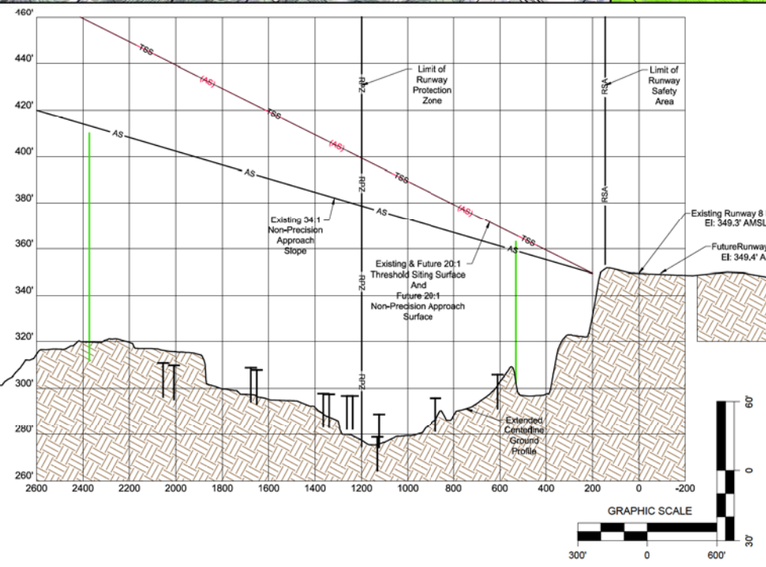
Hoyle, Tanner & Associates, Inc.

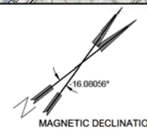
AIP NO.: 3-23-0003-027-2013
PROJ. NO.: 306402
DRAWN: -ZEN
DESIGN: -ZEN/ERM
CHECKED: -ERM/NEG
DATE: OCTOBER 2013

SHEET 7 OF 12

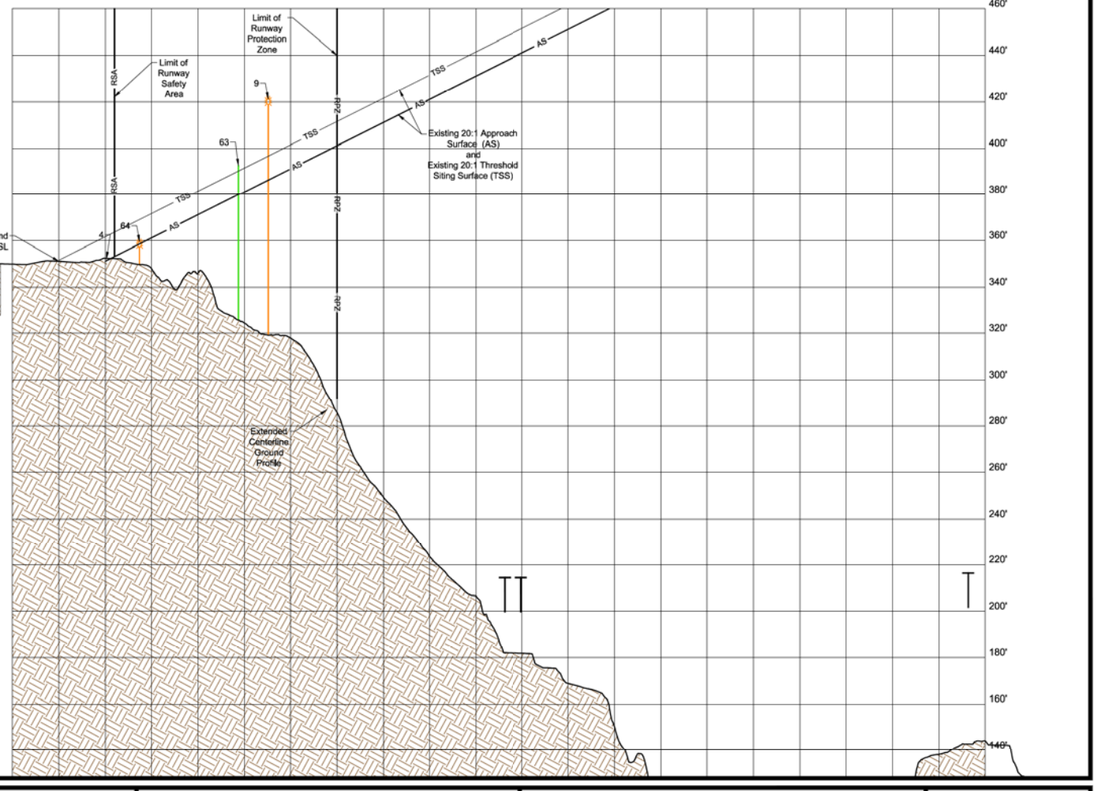
Drawing name: H:\306402\data\From Zach Final 12.27.13\AUG_Augusta Maine_ALP_DWGs\05-7_AUG_P&P.dwg Dec 30, 2013 - 4:30pm







MAGNETIC DECLINATION 16.08056° W
CHANGES 5.3' EAST / YR



LEGEND

ROADWAYS
LIGHT POLES/POLES
FENCES
TREES
OBS LIGHT

NO OBSTRUCTIONS TO RUNWAY 8

RUNWAY 26 OBSTRUCTION TABLE

KEY	DESCRIPTION	ELEVATION (AMSL)	PART 77 APPROACH SURFACE ELEVATION (AMSL)	APPROACH SURFACE PENETRATION (FT)	DISPOSITION
64	OL POLE	359.559	355.859	3.700	
63	TREE	392.770	368.401	24.369	
9	OL POLE	421.300	372.188	46.112	

REVISIONS	
DATE	DESCRIPTION

Augusta Your Maine Connection! STATE AIRPORT

PROJECT

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE
AIRPORT LAYOUT PLAN UPDATE

SHEET TITLE

RUNWAY 8-26
INNER PORTION OF THE
APPROACH SURFACE
PLAN AND PROFILE DRAWING

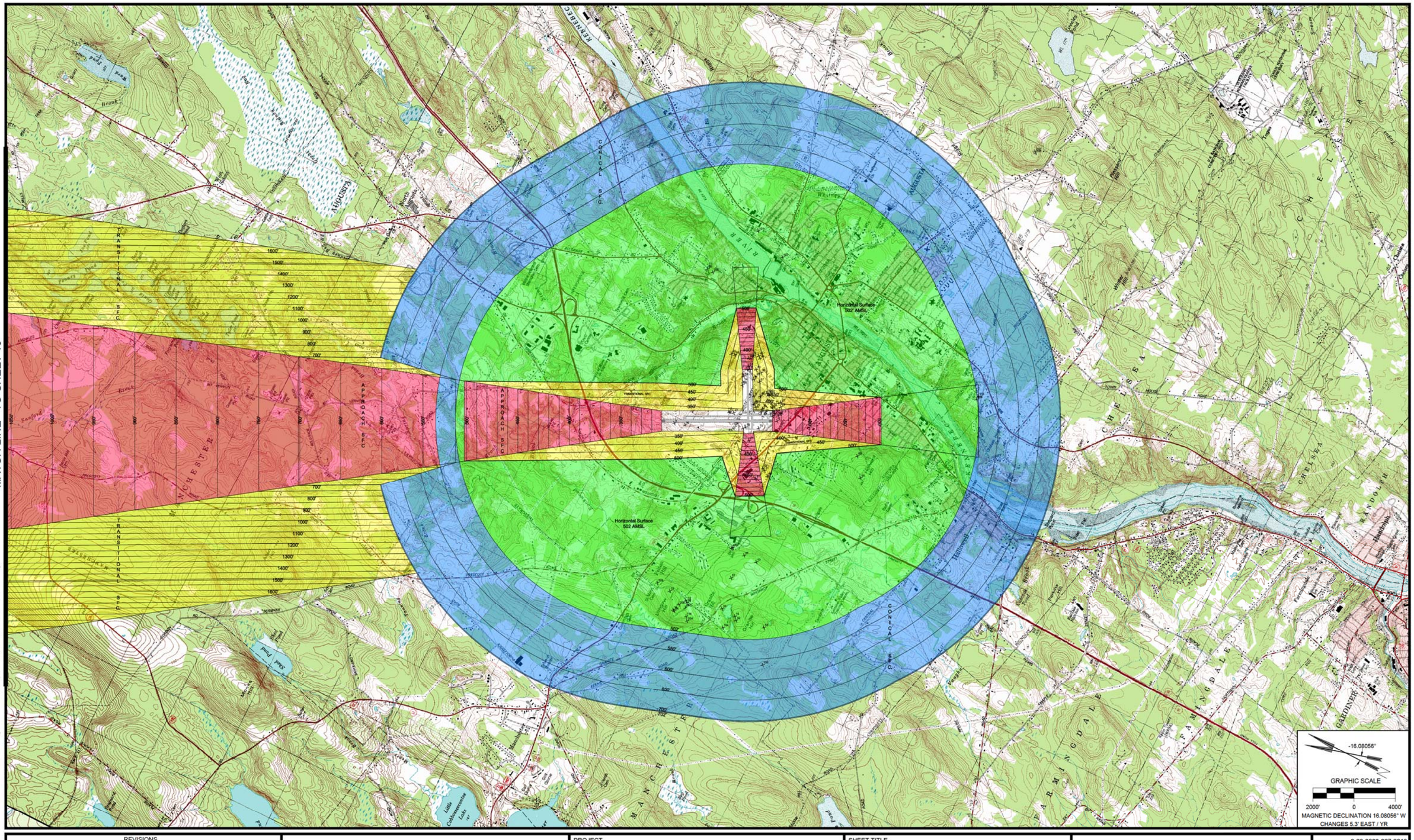
Hoyle, Tanner & Associates, Inc.

AIP NO.: 3-23-0003-027-2013
PROJ. NO.: 306402
DRAWN: -ZEN
DESIGN: -ZEN/ERM
CHECKED: -ERM/NEG
DATE: OCTOBER 2013

SHEET 8 OF 12

Drawing name: H:\306402\data\From Zach Final 12.27.13\AUG_Augusta Maine_ALP_DWGs\05--7_AUG_P&P.dwg Dec 30, 2013 - 3:30pm

MATCH LINE - TO SHEET 10



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REVISIONS	
DATE	DESCRIPTION

Augusta Your Maine Connection! STATE AIRPORT

PROJECT

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE
AIRPORT LAYOUT PLAN UPDATE

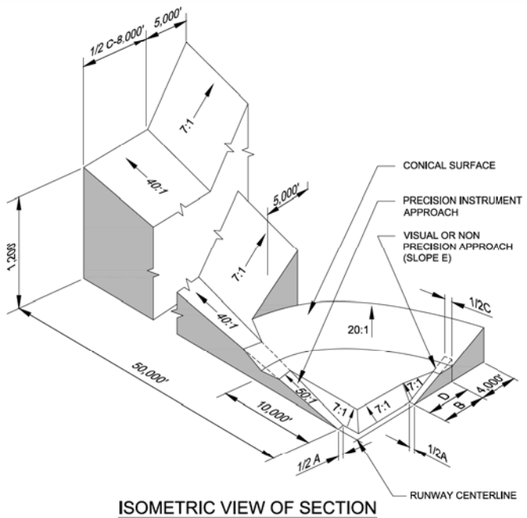
SHEET TITLE

PART 77 IMAGINARY SURFACES
SHEET 1

Hoyle, Tanner & Associates, Inc.

AIP NO.:	3-23-0003-027-2013
PROJ. NO.:	306402
DRAWN:	ZEN
DESIGN:	ZEN/ERM
CHECKED:	ERM/NEG
DATE:	OCTOBER 2013

SHEET 9 OF 12



ISOMETRIC VIEW OF SECTION

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	*

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

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:

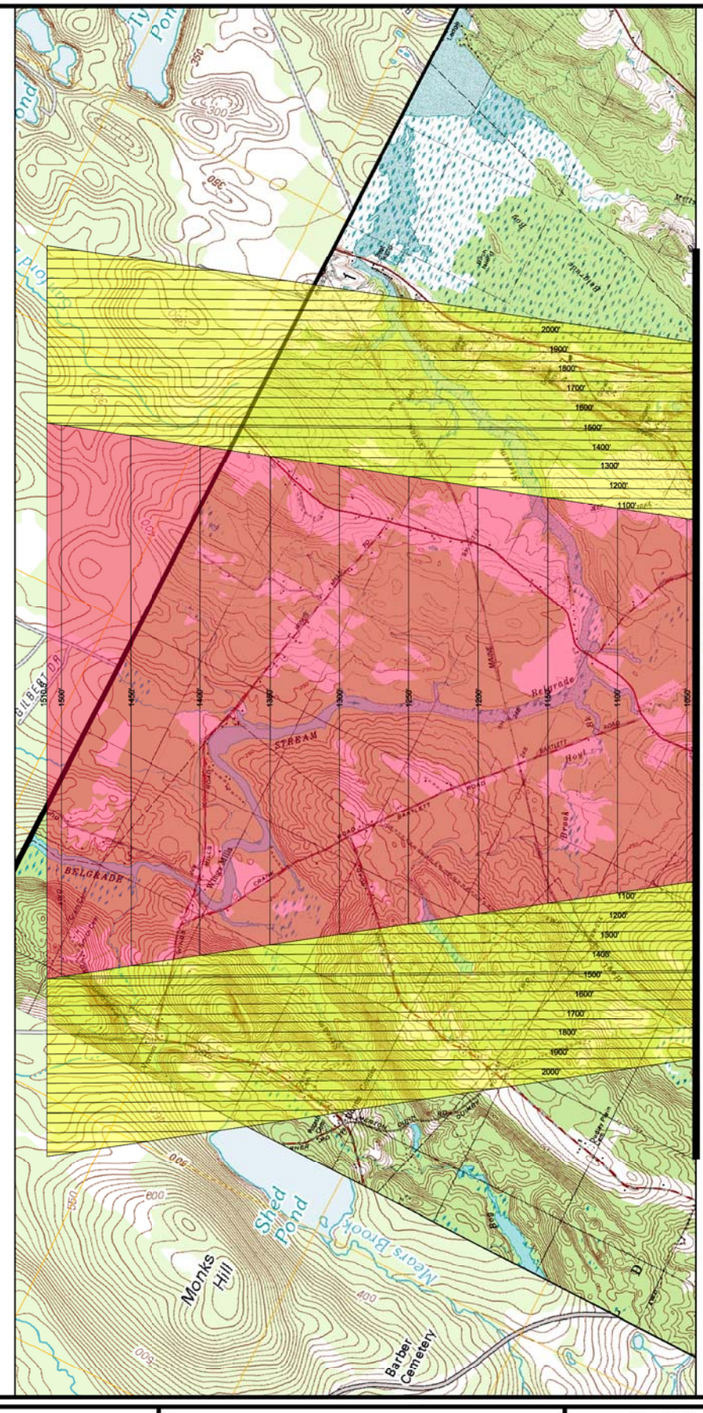
1. A HEIGHT OF FIVE HUNDRED (500) FEET ABOVE GROUND LEVEL AT THE SITE OF THE OBJECT ANYWHERE IN THE STATE.
2. A HEIGHT THAT IS TWO HUNDRED (200) FEET ABOVE GROUND LEVEL OR ABOVE THE ESTABLISHED AIRPORT ELEVATION, WHICHEVER IS HIGHER, WITHIN THREE (3) NAUTICAL MILES OF THE ESTABLISHED REFERENCED POINT 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.
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.
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.
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.

NOTE: FAR PART 77 IMAGINARY SURFACES ARE AS SHOWN ON THIS SHEET FOR AUGUSTA STATE AIRPORT. THESE SURFACES ARE DEPICTED BASED UPON EXISTING AND ULTIMATE AIRPORT DEVELOPMENT.

PART 77 OBSTRUCTION TABLE

OBJECT #	OBJECT DESCRIPTION	IMPACTED PT-77 SURFACE	PT-77 ELEV (FT. AMSL)	OBJECT HEIGHT (FT. AMSL)	PENETRATION HEIGHT (FT)	DISPOSITION
1	ANT ON OL MCWV TWR	HORIZONTAL	502.0	569.0	67.0	NONE
2	FENCE	APPROACH	351.2	358.3	7.1	APPLY TSS
3	FENCE	TRANSITIONAL	360.2	358.3	-1.9	NONE
4	GRD	APPROACH	351.4	354.3	2.9	APPLY TSS
5	HGR	TRANSITIONAL	356.4	363.3	6.9	NONE
6	OL ON LOC	APPROACH	363.1	345.3	-17.8	NONE
7	OL ON LTD WSK	PRIMARY	PRIMARY	376.3	ALG Height	Fixed by Func
8	OL ON POLE	PRIMARY	PRIMARY	318.3	ALG Height	Fixed by Func
9	OL POLE	APPROACH	386.3	421.3	35.0	NONE
10	ANT ON BLDG	PRIMARY	PRIMARY	329.3	ALG Height	Fixed by Func
11	RD(N)	APPROACH	352.7	355.3	2.6	APPLY TSS
12	TREE	HORIZONTAL	502.0	585.3	83.3	NONE
13	TREE	HORIZONTAL	502.0	508.3	6.3	NONE
14	TREE	HORIZONTAL	502.0	604.3	102.3	NONE
15	TREE	HORIZONTAL	502.0	574.3	72.3	NONE
16	TREE	TRANSITIONAL	405.1	417.6	12.6	TOP
17	VOR/DME	PRIMARY	PRIMARY	372.1	ALG Height	Fixed by Func
18	OL TWR	HORIZONTAL	502.0	522.7	20.7	NONE
19	LT POLE	TRANSITIONAL	359.2	376.3	17.1	NONE
20	ANT ON BLDG	TRANSITIONAL	366.4	394.3	27.9	NONE
21	TREE	APPROACH	365.5	363.3	-2.2	NONE
24	FENCE	PRIMARY	PRIMARY	356.3	ALG Height	Fixed by Func
25	OL ON LT POLE	PRIMARY	PRIMARY	375.5	ALG Height	Fixed by Func
26	LT POLE	APPROACH	348.1	375.2	27.1	NONE
27	TREE	TRANSITIONAL	409.7	422.2	12.6	TOP
29	TREE	TRANSITIONAL	378.2	407.7	29.5	TOP
31	TREE	TRANSITIONAL	478.0	416.7	-61.3	NONE
32	TREE	TRANSITIONAL	461.9	414.2	-47.7	NONE
33	OL TWR	HORIZONTAL	502.0	664.8	162.8	NONE
35	TREE	TRANSITIONAL	369.8	391.3	21.5	TOP
36	TREE	TRANSITIONAL	351.0	364.7	13.6	TOP
38	TREE	TRANSITIONAL	410.9	426.8	15.9	TOP
40	TREE	TRANSITIONAL	509.6	419.4	-90.3	NONE
41	TREE	HORIZONTAL	502.0	524.8	22.8	NONE
42	TREE	TRANSITIONAL	402.3	442.9	40.6	TOP
43	TREE	TRANSITIONAL	380.8	408.4	27.6	TOP
44	TREE	TRANSITIONAL	409.1	440.3	31.2	TOP
45	TREE	TRANSITIONAL	429.5	419.5	-10.0	NONE
50	TREE	HORIZONTAL	502.0	514.6	12.6	NONE
51	TREE	HORIZONTAL	502.0	538.0	36.0	NONE
52	TREE	HORIZONTAL	502.0	586.6	84.6	NONE
53	TREE	HORIZONTAL	502.0	518.8	16.8	NONE
54	TREE	HORIZONTAL	502.0	610.0	108.0	NONE
55	CHY	TRANSITIONAL	369.1	377.8	8.7	NONE
56	OL TWR	HORIZONTAL	502.0	598.8	96.8	NONE
57	TREE	TRANSITIONAL	398.4	403.9	5.6	TOP
61	ROD ON APBN ON OL TWR	TRANSITIONAL	308.1	398.8	90.6	NONE
62	TREE	PRIMARY	PRIMARY	369.7	AGL Height	REMOVE
63	TREE	APPROACH	379.8	392.8	12.9	REMOVE
64	OL POLE	APPROACH	358.5	359.6	1.0	NONE
65	ANT ON TWR	TRANSITIONAL	451.4	442.7	-8.7	NONE
66	ROD ON TWR	TRANSITIONAL	401.8	398.1	-3.7	NONE
68	FENCE	APPROACH	355.4	353.4	-2.0	NONE
69	TREE	HORIZONTAL	502.0	477.1	-24.9	NONE
70	ANT ON OL POLE	PRIMARY	PRIMARY	378.5	ALG Height	Fixed by Func
77	ANT ON OL BLDG	PRIMARY	PRIMARY	378.9	ALG Height	Fixed by Func
78	SIGN	PRIMARY	PRIMARY	355.7	ALG Height	Fixed by Func
81	TREE	APPROACH	457.5	410.3	-47.3	NONE
101	TOWER	HORIZONTAL	502.0	245.0	-257.0	NONE
102	STACK	HORIZONTAL	502.0	310.0	-192.0	NONE
103	TOWER	HORIZONTAL	502.0	496.0	-6.0	NONE
104	TOWER	HORIZONTAL	502.0	589.0	87.0	NONE
105	TOWER	CONICAL	564.8	565.0	0.2	NONE
106	TOWER	OUTSIDE PT77	N/A	794.0	N/A	NONE
107	TOWER	OUTSIDE PT77	N/A	524.0	N/A	NONE
108	BLDG	TRANSITIONAL	362.5	374.0	11.5	NONE
109	BLDG	TRANSITIONAL	448.8	459.0	10.2	NONE
110	TOWER	TRANSITIONAL	459.2	439.0	-20.2	NONE
111	POLE	APPROACH	350.1	375.0	24.9	LOWER
112	TOWER	HORIZONTAL	502.0	597.0	95.0	NONE
113	POLE	APPROACH	358.7	387.0	28.3	LIGTHED
114	TOWER	HORIZONTAL	502.0	675.0	173.0	NONE
115	TOWER	CONICAL	505.8	404.0	-101.8	NONE
201	CELL TOWER	HORIZONTAL	502.0	574.1	72.1	NONE
202	CELL TOWER	N/A	N/A	1378.0	N/A	NONE
203	CELL TOWER	HORIZONTAL	502.0	511.8	9.8	NONE
204	CELL TOWER	HORIZONTAL	502.0	557.7	55.7	NONE
205	CELL TOWER	HORIZONTAL	502.0	393.7	-108.3	NONE
206	CELL TOWER	HORIZONTAL	502.0	590.6	88.6	NONE
207	CELL TOWER	HORIZONTAL	502.0	360.9	-141.1	NONE

NOTES:
000 Series from eAOC points
100 Series from Maine DOF Ponts
200 Series from Maine GIS Cell Towers File



REVISIONS	
DATE	DESCRIPTION

Augusta Your Maine Connection! STATE AIRPORT

PROJECT
AUGUSTA STATE AIRPORT
AUGUSTA, MAINE
AIRPORT LAYOUT PLAN UPDATE

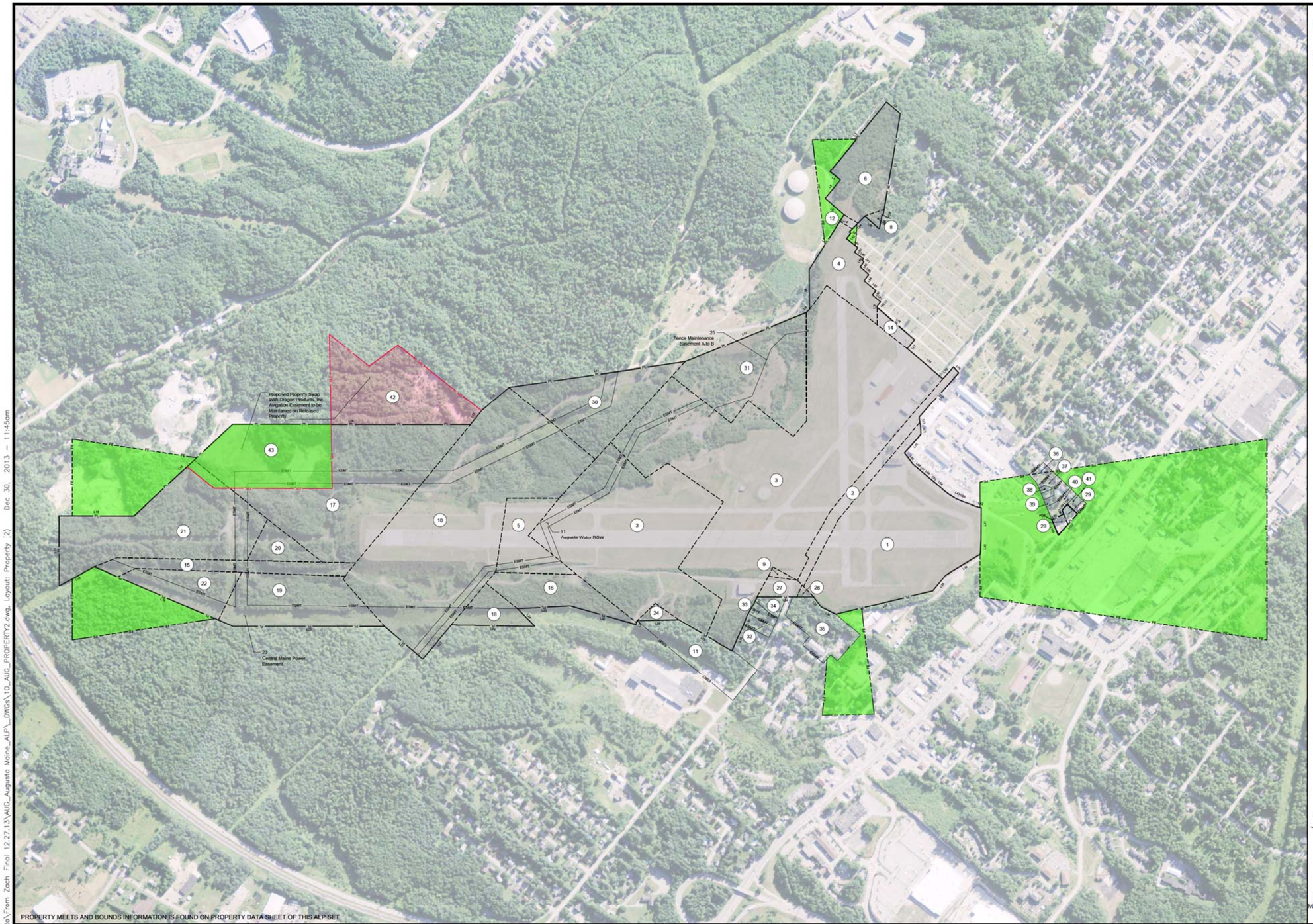
SHEET TITLE
PART 77 IMAGINARY SURFACES
SHEET 2
& OBSTRUCTION DATA

Hoyle, Tanner & Associates, Inc.

AIP NO.: 3-23-0003-027-2013
PROJ. NO.: 306402
DRAWN: -ZEN
DESIGN: -ZEN/ERM
CHECKED: -ERM/NEG
DATE: OCTOBER 2013

SHEET 10 OF 12

Drawing name: H:\306402\data\From Zach Final 12.27.13\AUG_Augusta Maine_ALP_DWGs\08-9_AUG_DATA_PT77.dwg Dec 30, 2013 - 3:28pm



NOTES:

1. The property boundary depicted here-in is not the result of a boundary survey by a licensed surveyor in the State of Maine. The meets and bounds provided on Sheet 12 of this ALP set are for informational purposes only and may not in anyway be construed as correct or accurate.

- Airport Property Boundary
- Future Airport Property
- Airport Parcels
- Existing Easement
- Future Easement
- 30 Parcel ID

-16.08056°

GRAPHIC SCALE

400' 0 400'

MAGNETIC DECLINATION 16.08056° W
CHANGES 5.3' EAST / YR

REVISIONS	
DATE	DESCRIPTION

Augusta Your Maine Connection! STATE AIRPORT

PROJECT

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE
AIRPORT LAYOUT PLAN UPDATE

SHEET TITLE

AIRPORT PROPERTY MAP
EXHIBIT-A

Hoyle, Tanner & Associates, Inc.

AIP NO.: 3-23-0003-027-2013
PROJ. NO.: 306402
DRAWN: -ZEN
DESIGN: -ZEN/ERM
CHECKED: -ERM/NEG
DATE: OCTOBER 2013

SHEET 11 OF 12

Drawing name: H:\306402\data\From Zach Final 12.27.13\AUG_Augusta Maine_ALP_DWGs\10_AIG_PROPERTY2.dwg, Layout: Property (2) Dec 30, 2013 - 11:45am

INVENTORY OF PARCELS

PARCEL NUMBER	GRANTOR	GRANTEE	INSTRUMENT	TOTAL ACREAGE	ACQUISITION DATE	K.C.R.D. BOOK/PAGE	REMARKS
1	C.N. Mulliken	State of Maine	Fee	30.5	6/11/1889	375/570	See note 1, 3
2	City of Augusta	State of Maine	Cert. of Discontinuance		8/18/1936		Winthrop Street discontinued, see note 3
3	A.B. Newhert	State of Maine	Fee	41.45	6/17/1941	777/210	See note 3
4	City of Augusta	State of Maine	Fee	5.4	6/17/1941	777/208	See note 3
5	W.S. Wyman	State of Maine	Fee	5.3	6/28/1941	779/294	See note 3
6	F. Robbins	State of Maine	Fee	7.22	07/14/1941	777/426	1/2 Interest in parcel shared with C.M. Pierce, See note 3
	C.M. Pierce	State of Maine	Fee	7.22	07/15/1941	777/352	1/2 Interest in parcel shared with F. Robbins, See note 3
7	City of Augusta	State of Maine	Fee	86	7/21/1941	777/410	See note 3
8	N.M. Katsikas	State of Maine	Fee	0.5	8/16/1941	796/342	See note 1, 3
9	G. Calzolari	State of Maine	Fee	0.3	8/14/1942	790/438	See note 3
10	Eastern Investment Co.	State of Maine	Fee	49.2	7/26/1951	914/269	FAAP 9-17-003-202, See note 1
11	State of Maine	Augusta Water District	Right of Way		12/11/1952	930/454	50' right of way
12	State of Maine	Augusta Water District				362/333	66' right of way
13	State of Maine	Cumberland Securities Corp.	Quitclaim	7.25	9/3/1957	1089/498	"Outsale", See note 3, FAA approval 4/18/1957
14	City of Augusta	State of Maine	Fee	1	2/20/1962		Plan Book 26- Page 16
15	Central Maine Power	State of Maine	Fee	4.69	5/27/1980	2296/94	ADAP 6-23-0003-07, Part 1
16	Central Securities Corp.	State of Maine	Fee	6.68	5/27/1980	2296/94	ADAP 6-23-0003-07, Part 2
17	V.E. Dunn and Son	State of Maine	Fee	43.66	5/27/1980	2296/94	ADAP 6-23-0003-07, Part 1, Mineral Rights Reserved to Grantor
18	V.K. and S.R. Peachey	State of Maine	Fee	2.63	5/27/1980	2296/94	ADAP 6-23-0003-07, Part 2
19	V.K. and S.R. Peachey	State of Maine	Fee	0.75	5/27/1980	2296/94	ADAP 6-23-0003-07, Part 1
20	V.K. and S.R. Peachey	State of Maine	Fee	3.44	5/27/1980	2296/94	ADAP 6-23-0003-07, Part 1
21	W.I. Arnold	State of Maine	Fee	21.29	5/27/1980	2296/94	ADAP 6-23-0003-07, Part 1
22	W.I. Arnold	State of Maine	Fee	4.66	5/27/1980	2296/94	ADAP 6-23-0003-07, Part 1
23	State of Maine	Central Maine Power	Easement Rights		9/7/1981	2421/257	
24	Cumberland Securities Corp	State of Maine	Fee	0.72	10/28/1987	3263/132	ADAP 6-23-0003-07, Part 2
25	City of Augusta	State of Maine	Easement		8/21/1989	3603/288	City of Augusta, maintenance easement of fence points A to B
26	Meadow Park Dev. Corp.	State of Maine	Fee	0.2	11/28/1989	3663/249	Acquired under AIP Project No. 3-23-0003-16-2007
27	Meadow Park Dev. Corp.	State of Maine	Fee	0.75	11/28/1989	3663/249	Acquired under AIP Project No. 3-23-0003-16-2007
28	City of Augusta	State of Maine	Fee	13.55	11/5/1993	4566/301	
29	City of Augusta	State of Maine	Fee	15.55	11/5/1993	4566/301	
30	Maine Home for Little Wanders	State of Maine	Fee	0.27	8/14/2007	9464/0091	AIP Project No. 3-23-0003-16-2007
31	William Pieske	State of Maine	Fee	0.29	8/15/2007	9464/0089	AIP Project No. 3-23-0003-16-2007
32	Heirs of John G. Burns and Mary F. Burns	State of Maine	Condemnation	0.57	7/14/2011	10824/282	AVIGATION EASEMENT AIP 3-23-003-25-2012
33	Gloria E. Pelletier	State of Maine	Condemnation	0.58	7/14/2011	10824/282	AVIGATION EASEMENT AIP 3-23-003-25-2012
34	MPDC IV, Inc.	State of Maine	Condemnation	0.75	7/14/2011	10824/282	AVIGATION EASEMENT AIP 3-23-003-25-2012
35	MPDC III, Inc.	State of Maine	Condemnation	4.6	7/14/2011	10824/282	AVIGATION EASEMENT AIP 3-23-003-25-2012
36	E. Bruce & Kathleen B Kirkham	State of Maine	Condemnation	0.44	4/29/2013	11367/33	AVIGATION EASEMENT AIP 3-23-003-28-2013
37	Sally C. Munroe	State of Maine	Condemnation	0.52	4/29/2013	11367/33	AVIGATION EASEMENT AIP 3-23-003-28-2013
38	Greater Augusta Utility District	State of Maine	Condemnation	0.09	4/29/2013	11367/33	AVIGATION EASEMENT AIP 3-23-003-28-2013
39	Joshua Nadel	State of Maine	Condemnation	0.63	4/29/2013	11367/33	AVIGATION EASEMENT AIP 3-23-003-28-2013
40	John A. Reny & Robert St. Onge	State of Maine	Condemnation	0.91	4/29/2013	11367/33	AVIGATION EASEMENT AIP 3-23-003-28-2013
41	Jeannette A. Lagace	State of Maine	Condemnation	0.33	4/29/2013	11367/33	AVIGATION EASEMENT AIP 3-23-003-28-2013
42	Dragon Products Company, Inc	State of Maine		15.17			Property Swap - FAA Approval
43	State of Maine	Dragon Products Company, Inc		13.95			Property Swap - FAA Approval - Avigation Easement Retained

Notes:
1. Total acreage for this parcel was developed by use of a polar planimeter.
2. Parcel subject to the right of the State to pass across for aeronautical purposes.
3. A.P-4 agreement surrendering leasehold to State of Maine, 03/19/1951.

Source: Maine Department of Transportation

POB N542643.45,E1138262.15

NAD83(HARN) / Maine CS2000 West

Point	Bearing	Distance (ft)	Point	Bearing	Distance (ft)
L1	S72° 54' 00"W	895.88	L49	S04° 45' 41"E	22.97
L2	S13° 10' 36"W	156.52	L50	S03° 10' 32"E	4.82
L3	S78° 18' 27"E	781.2	L51	S01° 13' 21"E	19.28
L4	N11° 35' 04"E	117.03	L52	S01° 44' 11"W	9.61
L5	S77° 55' 06"E	208.45	L53	S02° 05' 47"W	9.67
L6	N13° 13' 49"E	215.54	L54	S03° 45' 16"W	22.33
L7	S84° 55' 04"E	565.36	L55	S05° 12' 44"W	19.03
L8	N62° 18' 09"E	348.87	L56	S07° 28' 57"W	10.59
L9	S69° 57' 30"E	40.7	L57	S08° 01' 44"W	14.77
L10	S49° 09' 28"E	1138.84	L58	S09° 42' 55"W	14.39
L11	S35° 34' 27"E	1548.03	L59	S10° 25' 18"W	8.05
L12	S68° 20' 09"E	314.95	L60	S11° 24' 40"W	16.11
L13	S78° 18' 14"E	155.81	L61	S12° 23' 55"W	8.05
L14	S27° 15' 54"E	2070.45	L62	S13° 03' 12"W	8.05
L15	S70° 04' 21"E	1168.84	L63	S14° 23' 59"W	16.11
L16	S27° 09' 11"E	650	L64	S13° 09' 03"W	81.87
L17	N62° 37' 21"E	611.95	L65	S12° 54' 45"W	55.91
L18	N55° 47' 27"W	347.63	L66	S12° 27' 02"W	74.2
L19	N04° 01' 32"W	1310.44	L67	S14° 21' 53"W	45.68
L20	N27° 16' 13"W	1322.57	L68	S13° 08' 06"W	60.79
L21	N12° 57' 01"E	433.51	L69	S24° 52' 26"W	127.6
L22	N77° 01' 22"W	383.69	L70	N75° 37' 10"W	217.15
L23	N26° 21' 54"W	727.27	L71	S59° 05' 43"W	66.8
L24	S18° 19' 58"W	215.14	L72	S53° 35' 42"W	81.13
L25	N30° 28' 08"W	458.61	L73	N75° 53' 01"W	520.7
L26	N11° 23' 16"W	597.01	L74	S19° 53' 58"W	66.62
L27	S74° 40' 34"W	33.17	L75	S75° 27' 55"E	136.24
L28	N28° 47' 07"W	363.18	L76	S12° 36' 59"W	405.82
L29	N02° 43' 50"E	533.13	L77	N77° 00' 35"W	100.12
L30	S87° 14' 43"W	236.33	L78	S13° 06' 04"W	429.83
L31	S83° 38' 21"W	99.77	L79	S65° 06' 59"W	17.9
L32	N87° 07' 07"W	120.98	L80	N78° 16' 22"W	47.02
L33	S88° 15' 03"W	59.27	L81	S13° 08' 14"W	93.72
L34	N27° 16' 24"W	457.9	L82	N79° 06' 42"W	48.65
L35	N26° 23' 22"E	107.33	L83	S12° 05' 02"W	132.19
L36	N01° 03' 57"W	142.72	L84	N79° 21' 31"W	66.71
L37	N40° 50' 10"W	866.41	L85	S13° 18' 53"W	98.7
L38	N77° 31' 20"W	176.36	L86	N82° 21' 38"W	54.67
L39	N58° 27' 53"W	351.02	L87	S21° 26' 28"W	17.87
L40	S65° 20' 52"W	133.78	L88	N79° 37' 42"W	16.25
L41	S63° 17' 24"W	273.5	L89	S09° 11' 24"W	98.82
L42	S14° 49' 49"E	14.94	L90	N79° 43' 37"W	48.04
L43	S11° 28' 44"E	21.38	L91	S11° 15' 33"W	126.44
L44	S07° 37' 26"E	24.65	L92	N79° 23' 38"W	60.84
L45	S08° 00' 25"E	42.61	L93	S15° 25' 48"W	17.39
L46	S08° 00' 47"E	47.98	L94	N72° 32' 07"W	194.26
L47	S06° 39' 39"E	18.06	L95	N14° 21' 52"E	166.89
L48	S05° 39' 30"E	18.06	L96	S73° 50' 38"W	122.83

POB N540115.29,E1136585.43

NAD83(HARN) / Maine CS2000 West

Point	Bearing	Distance (ft)
L97	S52° 09' 02"E	114.48
L98	N40° 24' 14"E	35.82
L99	S82° 48' 52"E	25.96
L100	S71° 54' 11"E	42.81
L101	S15° 51' 00"W	119.84
L102	N75° 22' 16"W	249.70
L103	N40° 09' 20"E	146.19

NOTE:
The property boundary depicted on the preceding sheet is not the result of a boundary survey by a licensed surveyor in the State of Maine. The metes and bounds provided are for informational purposes only and may not in anyway be construed as correct or accurate.

REVISIONS

DATE	DESCRIPTION

Augusta Your Maine Connection! STATE AIRPORT

PROJECT

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE
AIRPORT LAYOUT PLAN UPDATE

SHEET TITLE

AIRPORT PROPERTY MAP
DATA SHEET

Hoyle, Tanner & Associates, Inc.

AIP NO.: 3-23-0003-027-2013
PROJ. NO.: 306402
DRAWN: -ZEN
DESIGN: -ZEN/ERM
CHECKED: -ERM/NEG
DATE: OCTOBER 2013

SHEET 12 OF 12

Drawing name: H:\306402\data\From Zach Final 12.27.13\AUG_Augusta Maine_ALP_DWGs\10_AUG_PROPERTY2.dwg, Layout: Property (2) Dec 30, 2013 - 11:45am

APPENDIX A
Wind Data

WIND DATA

Based on the airport development concept presented in this airport planning effort which explores the possibility of decommissioning the secondary runway, Runway 8-26, it is prudent to validate the wind condition at AUG across annual, seasonal, and monthly perspectives. According to the FAA, a crosswind runway is only warranted when the primary runway does not maintain 95 percent wind coverage on an annual basis with respect to its required crosswind coverage, which vary relative to the size of aircraft making substantial use of the facility. The FAA prescribed crosswind coverage values, as presented in AC 150/5300-13A are shown below.

Table 3-1. Allowable crosswind component per Runway Design Code (RDC)

RDC	Allowable Crosswind Component
A-I and B-I *	10.5 knots
A-II and B-II	13 knots
A-III, B-III, C-I through D-III D-I through D-III	16 knots
A-IV and B-IV, C-IV through C-VI, D-IV through D-VI	20 knots
E-I through E-VI	20 knots

* Includes A-I and B-I small aircraft.

For AUG, only 10.5- and 13-knot crosswind values were analyzed. The tables presented on the following page express the wind coverage at AUG for each runway independently for a variety of weather conditions (All Weather, VFR only weather, and IFR only weather) on an annual basis, seasonal basis, and monthly basis.

Appendix A – Fig 1 Wind Analysis Information

AUG WIND COVERAGE BREAKDOWN

	Runway 17/35 @ 10.5kt Crosswind			Runway 17/35 @ 13kt Crosswind			Runway 8/26 @ 10.5kt Crosswind		
	All Wx	VFR	IFR	All Wx	VFR	IFR	All Wx	VFR	IFR
Annual	**95.32%**	**94.87%**	**97.05%**	**97.81%**	**97.58%**	**98.69%**	**89.30%**	**90.12%**	**86.23%**
Spring	93.68%			97.09%			85.41%		
Summer	98.64%			99.50%			94.93%		
Fall	96.56%			98.31%			90.52%		
Winter	92.76%			96.52%			86.84%		
January	93.30%			96.77%			87.77%		
February	91.67%			95.84%			88.01%		
March	92.25%			96.38%			83.97%		
April	93.21%			96.76%			84.58%		
May	95.65%			98.17%			87.75%		
June	97.76%			99.13%			93.41%		
July	99.13%			99.68%			95.85%		
August	99.03%			99.70%			95.57%		
September	99.06%			99.72%			94.05%		
October	96.05%			98.19%			89.60%		
November	94.81%			97.17%			89.70%		
December	93.17%			96.85%			84.91%		

Note: Cells Highlighted in RED fall below the 95% threshold required by the FAA.

APPENDIX B

Modification to Standard For Taxiway C Extension, Runway Line-of-Sight, and Runway 8 End Relocation

NEW ENGLAND REGION
WAIVER OF AIRPORT STANDARDS
(or Deviation)

Airport: Augusta State Airport
Augusta, Maine

Deviation Summary: Applicable to Runway 17-35

ITEM	A. C. STANDARD	DEVIATION REQUESTED
1. Runway Safety Area Width	500'	400'
2. Parallel Taxiway Width	50'	40'
3. Taxiway Safety Area	110'	90'
4. Taxiway-Runway Separation	400'	250'
5. Runway Longitudinal Grade	0.5% at R/W ends 1/4 Length	Transition from 1.5% to 0.5% at R/W end
6. Building Restriction Line	750'	650'

The airport sponsor is planning improvements to the airport which will not meet standards because of terrain limitations and unusually high construction costs. Waivers are being considered to facilitate planning for the proposed construction.

1. Runway Safety Area Width, Runway 17-35
- Standard: AC 150/5335-4, Airport Design Standards Airport - Served by Air Carriers - Runway Geometrics. Paragraph 16.c, "The width of runway safety areas should be at least 500 feet".

Deviation: Runway extension (950') to be constructed with 400' Safety Area.

Justification: The existing safety area width at the end of the runway to be extended is 400 feet. The extension would be built to this same width because of the deep fills required (60' - 80'). It has been estimated that the saving will be $569,000. The minimum safety area beyond the edge of the 150' wide runway would be 125' in lieu of the standard 175'. Safety areas at runway ends will be increased from 50' to 200'.

2 & 3. Parallel Taxiway Width and Taxiway Safety Area Width, Runway 17-35
- Standard: AC 150/5335-1A, Airport Design Standards - Airports Served by Air Carriers - Taxiways. Paragraph 4 and Figures 3 and 4. Minimum taxiway width shown is 50' and minimum safety area width is 110'.

Deviation: Proposed taxiway 40'; safety area 90'.

Justification: This waiver and the others proposed are designed to compress standard lateral clearances to reduce earth fill quantities due to the great depths of fill required to extend the runway and build the taxiway. While this is an air carrier airport, it is appropriate to apply certain Basic and General Transport criteria because of the type of aircraft in use now and anticipated in the future. General aviation accounts for about 86% of total operations.

Basic and General Transport criteria allows a 40' taxiway and 90' safety area where a wheel tread under 25' is used. The DHC-6 which is the air carrier type aircraft in use at the airport has a wheel tread width of 12' - 6", and the FH-227 which is expected to be used after the runway is extended has a wheel tread of 23' - 8". Consequently, this reduced width seems reasonable.

A savings of $12,000 per 1000' of length can be realized by granting this waiver.

4. Taxiway-Runway Separation, Runway 17-35
- Standard: AC 150/5335-1A, Airport Design Standards - Airports Served by Air Carriers - Taxiways, Paragraph 4 and Figures 3 and 4. Minimum taxiway-runway separation is 400'.

Deviation: Proposed separation 250'.

Justificaion: Evaluation of dimensions of aircraft which possibly might utilize the airport indicate simultaneous passing of aircraft under normal circumstances would occur without mishap. For example, FH-227's passing, both on edge of pavement nearest one another, would have a wing tip clearance of 84'. In area of deep fill proposal would produce an estimated savings of $59,200 per 1000' of taxiway.

5. Runway Longitudinal Grade, Runway 17-35
- Standard: AC 150/5325-2C, Airport Design Standards - Airports Served by Air Carriers - Surface Gradient and Line of Site, Paragraph 7.b(1).

Longitudinal Grade. The maximum longitudinal grade is 1.5%; however, the longitudinal grade may not exceed 0.5% in the first and last quarters of the runway length. It is desirable to keep longitudinal grades to a minimum.

Deviation: Proposed extension of 950' will not provide 0.5% grade for one quarter length of the runway.

Justification: The existing longitudinal grade of the last quarter of the end to be extended is at 1.5%. The transition from 1.5% to the 0.5% requires a vertical curve which takes up nearly all of the extension before leveling off to 0.5% Any further extension could continue at 0.5%. Under the circumstances it would not be practical to tear up several hundred feet of existing pavement and add to the already deep fill to obtain the standard design.

6. Building Restriction Line, Runway 17-35
- Standard: AC 150/5335-4, Airport Design Standards - Airports Served by Air Carriers - Runway Geometrics, Paragraph 12.d. The AC states, "although a case-by-case evaluation should be made, the building restriction line normally should be at least 750' from the runway centerline.

Deviation: The proposed building line is 650'.

3.

Justification: This is not a normal situation. The airport is on the top of a hill with severe space limitations especially in the terminal area. The existing terminal building is approximately 650' from the runway centerline and consequently, this distance has been established. This distance will protect the 7:1 transitional surface from penetrations by one story buildings such as hangars.

COORDINATION:

Concurrence: _____ ANE-610 — April 20, 1979 Date

Concurrence: _____ ANE-620 — 4/27/79 Date

Concurrence: _____ ANE-200 — 8/2/79 Date

Concurrence: _____ ANE-400 — 8/6/79 Date

APPROVED: _____ GERALD D. CURTIN for Chief, Airports Division, ANE-600 — Aug 18, 1979 Date

From: bob.siris@faa.gov
Sent: Thursday, August 15, 2013 4:04 PM
To: McDougal, Evan R.
Cc: Barry.Hammer@faa.gov; John Guimond (jguimond@augustaairport.org); Gonzalez, Nils; Tim LeSeige (Tim.LeSiege@maine.gov); Nelson, Zacheriah E.
Subject: Re: FW: AUG mod to standard for Taxiway C
Attachments: pic19156.jpg; 1979 RWY 35 LOS Waiver No.47.pdf

Evan

I do remember this. What would need to happen next is the airport would need to submit a mod to standard request form to the FAA. I can send you a copy of that form if you don't have it. In this case you would probably send it to Ralph for approval as it is generated as part of planning effort and not as a design effort toward a specific construction project. Either way, I support what you are doing and I can can give Ralph the background.
Do you have some cost estimates as to what it would take to make it standard? I know that figure would off the charts.

-bob

From: "McDougal, Evan R." <emcdougal@hoyletanner.com>

To: Barry Hammer/ANE/FAA@FAA, Bob Siris/ANE/FAA@FAA

"John Guimond (jguimond@augustaairport.org)" <jguimond@augustaairport.org>, "Tim LeSeige (Tim.LeSiege@maine.gov)" <Tim.LeSiege@maine.gov>, "Nelson, Zacheriah E." <znelson@hoyletanner.com>, "Gonzalez, Nils" <ngonzalez@hoyletanner.com>

Date: 08/15/2013 03:48 PM

Subject: FW: AUG mod to standard for Taxiway C

Hi Barry and Bob,

Attached is an old waiver that discussed the line of sight issue at AUG and refers to the extension of Taxiway C “in the future” to improve the situation but not correct the problem. I believe Bob looked at it with Nils and John during a visit and said that FAA would not consider it feasible to extend the taxiway due to the large amount of fill required.
If that is true, could we get a Modification of Standard letter for the files to put the parallel extension to rest? It would be helpful for the ALP update that we are in the middle of. Other MOS that we have on file include:

Record #	Condition	Status	Date	Action
MOS #19	Penetration to primary surface and 20:1 approach surface R/W 8-26	Approved	1/14/1977	No Action
MOS #21	Violation of primary surface and clear zone Runway 35	Approved	2/9/1977	No Action

MOS #22	Runway/taxiway separation less than 400' - precision approach standard	Approved	2/9/1977	No Action
MOS #47	Nonstandard line-of-sight approved	Approved	8/18/1979	No Action
MOS #48	1. Safety area width; 2. Parallel tway width; 3. Tway safety area; 4. tway/rwy separation; 5. rwy long. grade; 6. Bldg. restr. Line	Approved	8/18/1979	No Action
FAA RSA Determination	Deficient Runway Safety Areas on Runway 8	Approved	9/5/2008	Shift Runway 8 Threshold 90'

Thanks,

Evan R. McDougal, C.M.

FAA NEW ENGLAND REGION
MODIFICATION OF AIRPORT DESIGN STANDARDS

BACKGROUND

1. AIRPORT:	2. LOCATION(CITY,STATE):	3. LOC ID:
Augusta State	Augusta, Maine	AUG

4. EFFECTED RUNWAY/TAXIWAY:	5. APPROACH (EACH RUNWAY):	6. AIRPORT REF. CODE (ARC):
Runway 17-35/C	X_ PIR	B II Runway 17/35

7. DESIGN AIRCRAFT (EACH RUNWAY/TAXIWAY):
Beechcraft B200 Runway 17-35
Piper Navaho Runway 8/26

MODIFICATION OF STANDARDS

8. TITLE OF STANDARD BEING MODIFIED (CITE REFERENCE DOCUMENT):
Runway Line of Sight Requirements AC 150/5300-13A,
Full Length Parallel Taxiway Requirements - AC 150/5300-13A
Runway Centerline to Taxiway Centerline Spacing - AC 150/5300-13A

9. STANDARD/REQUIREMENT:
AC 150/5300-13A, Para 305 b (1). Runways without Full Parallel Taxiways. Any point 5 feet (1.5 m) above the runway centerline must be mutually visible with any other point 5 feet (1.5 m) above the runway centerline.
AC 150/5300-13A, Table 3-4. Standards for Precision Approach Procedures with Vertical Guidance (APV) Lower than 250 ft Height Above Threshold (HATh) A full-length parallel taxiway meeting separation requirements is required.
AC 150/5300-13A, Table 3-4. Standards for Precision Approach Procedures with Vertical Guidance (APV) Lower than 250 ft Height Above Threshold (HATh) For Runway 17 with AAC and ADG of B-II and a CAT 1 ILS with visibility minimums lower than ¾ mile the required separation between Runway centerline and Parallel Taxiway Centerline is 300 Ft. The existing separation ranges between 250 and 275 feet.

10. PROPOSED:
- Maintain the existing conditions.

11. EXPLAIN WHY STANDARD CANNOT BE MET (FAA ORDER 5300.1E):
The attached previously approved Modification of Standards waivers #47 and #48 dated 8/19/1979 approved waivers to the line of sight, full parallel taxiway, and runway to taxiway centerline separation standards in part assuming the full length and separation would be corrected during a future construction effort. The estimated construction costs to extend Taxiway C to full length at the required 300 foot separation now exceeds 5 million dollars and is therefore cost prohibitive.

12. DISCUSS VIABLE ALTERNATIVES (FAA ORDER 5300.1E): Construct a full length parallel taxiway at the standard separation at a cost in excess of $5 million dollars.

13. STATE WHY MODIFICATION WOULD PROVIDE ACCEPTABLE LEVEL OF SAFETY (FAA ORDER 5300.1E):

The airport has been operating with insufficient line of sight, a partial parallel taxiway to the precision instrument runway and reduced runway centerline to taxiway centerline separation for many years with no reported safety issues.

ATTACH ADDITIONAL SHEETS AS NECESSARY – INCLUDE SKETCH/PLAN

FAA NEW ENGLAND REGION
MODIFICATION OF AIRPORT DESIGN STANDARDS

MODIFICATION:	LOCATION: Augusta State Airport, Maine	PAGE 2 OF 2
14. SIGNATURE OF ORIGINATOR:	15. ORIGINATOR'S ORGANIZATION:	16. TELEPHONE:
17. DATE OF LATEST FAA SIGNED ALP:		
18. ADO RECOMMENDATION:	19. SIGNATURE:	20. DATE:
21. FAA DIVISIONAL REVIEW (AT, AF, FS):		

ROUTING SYMBOL	SIGNATURE	DATE	CONCUR	NON-CONCUR

COMMENTS:

22. AIRPORTS' DIVISION FINAL ACTION:

[ ] UNCONDITIONAL APPROVAL	[ ] CONDITIONAL APPROVAL	[ ] DISAPPROVAL

DATE:	SIGNATURE:	TITLE:

CONDITIONS OF APPROVAL:

NEW ENGLAND REGION
WAIVER OF AIRPORT STANDARDS
(or Deviation)

Airport: Augusta State Airport
Augusta, Maine

Deviation Summary: Proposed runway extension and other improvements will not provide standard runway line of sight.

Standard: AC 150/5325-2C, Chg. 1, Airport Design Standards - Airports Served by Air Carriers - Surface Gradient and Line-of-Sight, Paragraph 8.a.(1).

Airports Not Having a 24-hour Control Tower. Runway grade changes shall be such that any two points 5 feet (1.5 meters) above the runway centerline will be mutually visible for the entire runway length. However, if the runway has a parallel taxiway for its full length, runway grade changes may be such that an unobstructed line-of-sight will exist from any point 5 feet (1.5 meters) above the runway centerline to all other points 5 feet (1.5 meters) above the runway centerline within a distance of half the length of the runway.

Deviation: Line-of-sight will be provided for one half the length of the runway, but full parallel taxiway will not be built until later.

Justification: °Safety will be greatly improved over existing conditions.

°The State does not have matching funds at this time to provide the parallel taxiway which is estimated to cost a total of $1,247,000. This is an interim condition, the taxiway will be constructed at a later date.

Additional documentation filed: Evaluation Report attached.

Letter from Mr. DiPietro to Mr. Whittington dated March 8, 1979.

Airport Master Plan

Coordination: ANE-610, ANE-620, ANE-200, ANE-400 and ANE-500

See Evaluation Report for concurrence.

Authority to waive: Order NE 1100.3B, paragraph 5.n.

Recommended: W O Scearce Date 8/18/79

Approved: W O Scearce Date Aug 18 '79

Prepared by: F J Baird Date 4/19/79

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
NEW ENGLAND REGION

EVALUATION REPORT

Waiver of Line-of-Sight Standard
Runway 17-35, Augusta State Airport
Augusta, Maine

BACKGROUND

An Airport Master Plan for the Augusta State Airport is being prepared by a private consultant. One of the principal recommendations of the plan is to extend the instrument runway from 4205 feet to 5000 feet. The runway gradient and line-of-sight would be improved to the extent that an unobstructed line-of-sight would exist from any point 5 feet above the runway centerline to all other points 5 feet above the runway centerline within a distance of half the length of the runway. To meet the standards specified in Advisory Circular 150/5324-2C, Change 1, a full length parallel taxiway would be required under the proposed line-of-sight condition because it will be several years before an ATCT is a realistic possibility.

The cost to provide the runway extension and line-of-sight for one half the runway length is estimated to be $4,373,000. The cost of the full length parallel taxiway is estimated at $1,247,000. The State has the resources to provide its 20% share of the runway work under ADAP, but not for the taxiway. Consequently, the State wishes to postpone the taxiway construction to a later date and, therefore, equests a waiver of the line-of-sight standards during the interim period. The State has carefully weighed the advantages and disadvantages of the two phase proposal. Reference is made to letter dated March 8, 1979 to Mr. Robert Whittington from Mr. Richard P. DiPietro, Director, Bureau of Aviation, Maine Department of Transportation, in which Mr. DiPietor describes the State's position.

DISCUSSION

Certificated air carriers have served the airport for many years with the conditions as they exist today. The principal runway has a line-of-sight deficiency and has no parallel taxiway. A localizer has been installed under an F & E contract and a glide slope and approach lights were to be installed before the runway extension proposal delayed the project.

The proposed runway extension will not only improve the line-of-sight, but will provide 200 foot safety areas at both ends of the runway in lieu of the existing 50 foot areas. The extension will be built on a vertical curve leveling off to a grade of 0.5% at the runway end in lieu of a 1.5% grade which exists at that end now. In evaluating the merits of the waiver request the following alternative was considered:

Alternative: Correct line-of-sight by removing hump and building parallel taxiway to existing 4205 foot runway at an estimated cost of $2,178,000.

dvantages: Comply with line-of-sight safety standard.

Disadvantages:

1. G. S. and MALSR to be installed at great expense, must be relocated when runway is extended. Initial installation of MALSR estimated at $500,000.

2. Relocation of G. S. and MALSR would have to be done at State expense with no federal aid.

3. State legislature, by a special act, has appropriated $600,000 as matching funds for "extenstion of runway". No state money available for this alternative.

4. No correction of gradient at Runway 17 end, now 1.5%; air carrier standard is 0.5%.

5. Runway could not accommodate many corporate jets which wish to use the airport now and some air carrier equipment forecast for the near future.

CONCLUSION

The most economical and feasible approach to this situation is to extend the runway, improve line-of-sight, provide minimum safety areas at runway ends and install a G. S. and ALS as a first step toward obtaining a 5000' runway with a full ILS. The line-of-sight problem has existed since the airport was built, but will meet standards when the second phase of construction is completed.

RECOMMENDATION

It is the recommendation of this report that a waiver of standards be permitted to allow extension of the runway and other improvements without construction of a parrallel taxiway as required since line-of-sight for only half the length of the runway will be provided. It is understood that a parallel taxiway will be built, as a second phase, at a later date when Federal and State resources are available.

Prepared By: P. J. Baird Date Apr. 19, 1979

Recommended: W. M. Cronan Date April 20, 1979 / 4/27/79
ANE-610/620

Concurrence: Date 8/2/79
ANE-200

Concurrence: Date 8/6/79
ANE-400

Approved: Date August 18, 1979
GERALD D. CURTIN
Chief, Airports Division, ANE-600

FAA NEW ENGLAND REGION
MODIFICATION OF AIRPORT DESIGN STANDARDS

BACKGROUND

1. AIRPORT:	2. LOCATION(CITY,STATE):	3. LOC ID:
Augusta State	Augusta, Maine	AUG

4. EFFECTED RUNWAY/TAXIWAY:	5. APPROACH (EACH RUNWAY):	6. AIRPORT REF. CODE (ARC):
Runway 08	___ PIR __X_ NPI ___ VISUAL	A-1 Runway 8/26 B II Runway 17/35

7. DESIGN AIRCRAFT (EACH RUNWAY/TAXIWAY):
Beechcraft B200 Runway 17-35
Piper Navaho Runway 8/26

MODIFICATION OF STANDARDS

8. TITLE OF STANDARD BEING MODIFIED (CITE REFERENCE DOCUMENT):
Runway Entrance Taxiway AC 150/5300-13A,
Aligned Taxiway AC 150/5300-13A
Runway Centerline Spacing AC 150/5340-1L
Runway Edge Light Spacing AC 150/5340-30G

9. STANDARD/REQUIREMENT:
AC 150/5300-13A, Para 410. b. Configuration**.** The standard design of a runway entrance taxiway is at right angles to the runway at the end of a runway where the threshold and beginning of takeoff coincide.
AC 150/5300-13A, Para 416. Aligned taxiways prohibited. An aligned taxiway is one whose centerline coincides with a runway centerline..
AC 150/5340-1L, Para 2.4e. Characteristics. A runway centerline marking consists of a line of uniformly spaced stripes and gaps and of uniform width. The stripes are 120 feet in length and the gaps are 80 feet in length.
AC 150/5340-30G, Para 2.1.2.a (2) (a) The edge lights are uniformly spaced and symmetrical about the runway centerline, such that a line between light units on opposite sides of the runway is perpendicular to the runway centerline.

10. PROPOSED:
- Aligned Taxiway. The runway entrance taxiway would remain at its current location and the runway end and threshold would be relocated 90 feet to the east to create a standard runway safety area.
- There would be an aligned taxiway marked in accordance with AC 150/5340-1L, Appendix A, Fig 8.
- Runway centerline markings would remain as currently marked and be non-standard spacing from runway midpoint to the intersection of 08/26 and 17/35.
- 08 threshold lights would be relocated and runway edge lights would have non-standard spacing on the 08 runway end.

11. EXPLAIN WHY STANDARD CANNOT BE MET (FAA ORDER 5300.1E): Spending funds relocating the entrance taxiway, removing pavement, re-spacing MIRLS and centerline stripes prior to a future decision to reconstruct or decommission the runway is not justified based on the local conditions for a secondary A-1 runway.

12. DISCUSS VIABLE ALTERNATIVES (FAA ORDER 5300.1E): The runway end and threshold can be relocated by repainting, moving the threshold lights outboard of the threshold, and adding a short inline taxilway from the existing entrance taxiway to the relocated threshold.

13. STATE WHY MODIFICATION WOULD PROVIDE ACCEPTABLE LEVEL OF SAFETY (FAA ORDER 5300.1E):

The relocation of the runway end and threshold 90 feet to the east with the entrance taxiway and taxiway markings remaining in their current location should not cause pilot confusion. The overrun RSA will be partially paved , clearly marked, and identified as an aligned Taxiway.

ATTACH ADDITIONAL SHEETS AS NECESSARY – INCLUDE SKETCH/PLAN

FAA NEW ENGLAND REGION
MODIFICATION OF AIRPORT DESIGN STANDARDS

MODIFICATION:	LOCATION: Augusta State Airport, Maine	PAGE 2 OF 2
14. SIGNATURE OF ORIGINATOR:	15. ORIGINATOR'S ORGANIZATION:	16. TELEPHONE:
17. DATE OF LATEST FAA SIGNED ALP:		
18. ADO RECOMMENDATION:	19. SIGNATURE:	20. DATE:
21. FAA DIVISIONAL REVIEW (AT, AF, FS):		

ROUTING SYMBOL	SIGNATURE	DATE	CONCUR	NON-CONCUR

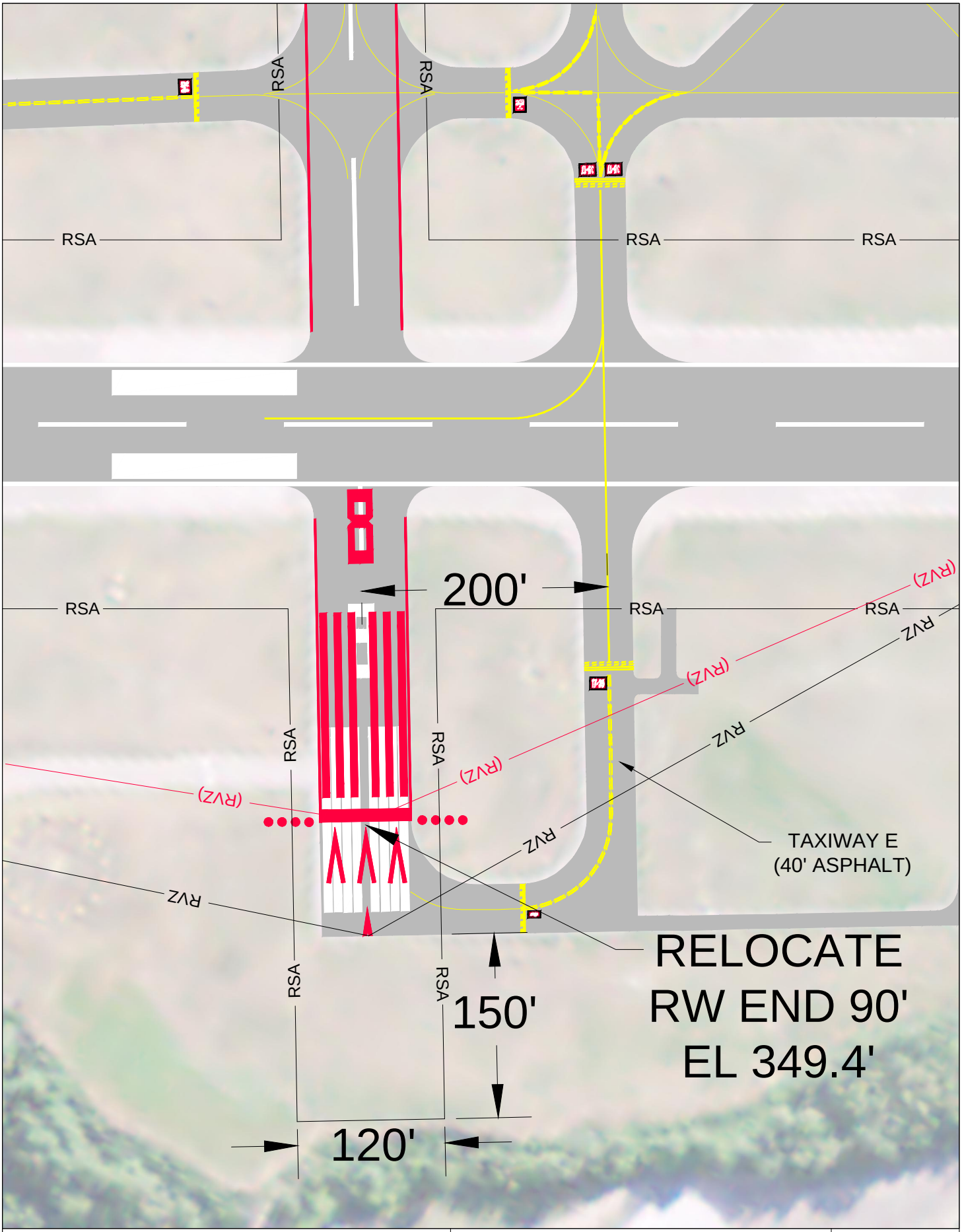
COMMENTS:

22. AIRPORTS' DIVISION FINAL ACTION:

[ ] UNCONDITIONAL APPROVAL	[ ] CONDITIONAL APPROVAL	[ ] DISAPPROVAL

DATE:	SIGNATURE:	TITLE:

CONDITIONS OF APPROVAL:



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AUGUSTA STATE AIRPORT
AUGUSTA, MAINE

Modification to Design Standard Exhibit

EXHIBIT

1 of 1

APPENDIX C

Aviation Forecast Matrix

FORECAST METHODOLOGY

The forecasting matrix presented on the following page represents a very cursory effort into aeronautical activity forecasting for AUG. Specifically, only two methodologies were employed in this forecasting effort. The first is a simple linear trend method. Trend line analysis examines historical growth trends in activity at a specific airport and applies the historical trends to current demand levels to produce projections of future activity. Trend line analysis assumes that activity, and the factors which have historically affected activity, will continue to influence demand levels at similar rates over an extended period of time. Linear time series trend projections are typically used to provide baseline forecast that reflect stable market conditions. The second methodology employed in this analysis is a simple market share analysis. Market share analysis as a method for projecting future aeronautical activity is a relatively easy method to use, and can be applied to any measure for which a reliable higher-level forecast is available. Historical shares are calculated and used as a basis for projecting future shares. This approach is a "top-down" method of forecasting since forecasts of larger aggregates are used to derive forecasts for smaller elements of the system – in this case Augusta State Airport. For the purpose of performing market share analysis for AUG, data relative to the State of Maine, the FAA's Northeast Region, and the entire U.S. was reviewed across a variety of metrics including commercial enplanements, general aviation operations, and based aircraft.

The future values for specific aeronautical operations or based aircraft at AUG shown on the following page is simply the resultant product of applying the calculations relative to two methodologies described above to historical operational or based aircraft data at AUG. The information is for reference only and may not be quality indication of future airport activities as neither of these methodologies take into account internal or external market forces which may shape the activity at AUG in the future.

Appendix B – Fig 1 Forecast Matrix

	TREND ANALYSIS												MARKET SHARE ANALYSIS																							
	Enplanements			Commercial Ops			**GA Ops**			Based AC			**Enplanements**						**Commercial Operations**						General Aviation Operations						**Based Aircraft**					
Year	Short-Term	Mid-Term	Long-Term	Short-Term	Mid-Term	Long-Term	Short-Term	Mid-Term	**Long-Term**	Short-Term	Mid-Term	Long-Term	State 3 Year Avg. Share	***State 20 Year Avg Share***	ANE 3 Year Avg. Share	ANE 20 Year Avg. Share	National 3 Year Avg Share	National 20 Year Avg Share	***State 3 Year Avg. Share***	State 20 Year Avg Share	ANE 3 Year Avg. Share	ANE 20 Year Avg. Share	National 3 Year Avg Share	National 20 Year Avg Share	State 3 Year Avg. Share	State 20 Year Avg Share	ANE 3 Year Avg. Share	ANE 20 Year Avg. Share	National 3 Year Avg Share	National 20 Year Avg Share	State 3 Year Avg. Share	**State 20 Year Avg Share**	ANE 3 Year Avg. Share	ANE 20 Year Avg. Share	National 3 Year Avg Share	National 20 Year Avg Share
2013	5,177	4,994	4,689	5,300	5,300	5,323	25,500	25,500	**25,556**	27	26	27	4,352	***4,416***	4,401	4,093	4,577	4,366	***5,054***	7,482	5,160	9,145	5,112	9,441	25,258	25,748	25,014	24,793	25,416	29,328	27	**47**	27	43	27	42
2014	5,822	5,417	4,775	5,300	5,300	5,345	25,500	25,500	**25,612**	27	25	25	4,398	***4,463***	4,458	4,145	4,699	4,482	***5,029***	7,445	5,168	9,159	5,096	9,411	25,274	25,764	25,049	24,827	25,517	29,444	27	**47**	27	43	27	43
2015	6,546	5,876	4,863	5,300	5,300	5,368	25,500	25,500	**25,669**	27	24	24	4,448	***4,513***	4,540	4,222	4,828	4,606	***5,004***	7,407	5,180	9,181	5,071	9,365	25,290	25,780	25,083	24,862	25,618	29,561	27	**47**	28	44	28	43
2016	7,361	6,373	4,953	5,300	5,300	5,391	25,500	25,500	**25,725**	27	23	22	4,500	***4,566***	4,625	4,301	4,955	4,727	***4,978***	7,369	5,195	9,207	5,032	9,294	25,306	25,796	25,118	24,896	25,720	29,678	27	**48**	28	44	28	43
2017	8,278	6,913	5,045	5,300	5,300	5,414	25,500	25,500	**25,782**	27	22	21	4,550	***4,616***	4,710	4,379	5,080	4,846	***4,951***	7,329	5,209	9,232	5,003	9,241	25,322	25,813	25,153	24,931	25,823	29,797	27	**48**	28	44	28	44
2018	9,308	7,498	5,138	5,300	5,300	5,438	25,500	25,500	**25,839**	27	21	19	4,605	***4,673***	4,793	4,457	5,198	4,958	***4,951***	7,329	5,237	9,282	5,000	9,235	25,338	25,829	25,189	24,966	25,927	29,917	27	**48**	28	45	28	44
2019	10,467	8,133	5,232	5,300	5,300	5,461	25,500	25,500	**25,896**	27	20	18	4,661	***4,730***	4,878	4,536	5,318	5,073	***4,952***	7,331	5,266	9,333	4,998	9,230	25,355	25,846	25,225	25,002	26,033	30,040	27	**48**	29	45	29	45
2020	11,770	8,822	5,329	5,300	5,300	5,484	25,500	25,500	**25,953**	27	19	17	4,718	***4,788***	4,965	4,616	5,442	5,191	***4,954***	7,333	5,296	9,386	4,996	9,227	25,371	25,863	25,261	25,037	26,141	30,164	27	**48**	29	46	29	45
2021	13,236	9,569	5,427	5,300	5,300	5,508	25,500	25,500	**26,010**	27	18	16	4,776	***4,846***	5,053	4,699	5,568	5,311	***4,955***	7,335	5,326	9,439	4,994	9,224	25,388	25,880	25,297	25,073	26,249	30,289	27	**48**	29	46	29	45
2022	14,884	10,379	5,527	5,300	5,300	5,531	25,500	25,500	**26,067**	27	18	15	4,834	***4,905***	5,143	4,782	5,697	5,434	***4,957***	7,338	5,356	9,493	4,993	9,222	25,405	25,897	25,334	25,110	26,360	30,416	27	**48**	29	46	29	46
2023	16,737	11,258	5,629	5,300	5,300	5,555	25,500	25,500	**26,125**	27	17	14	4,893	***4,965***	5,235	4,868	5,828	5,560	***4,959***	7,341	5,387	9,549	4,993	9,221	25,422	25,915	25,370	25,146	26,472	30,546	27	**49**	30	47	30	46
2024	18,820	12,212	5,733	5,300	5,300	5,579	25,500	25,500	**26,182**	27	16	13	4,953	***5,025***	5,329	4,955	5,964	5,689	***4,961***	7,344	5,419	9,605	4,993	9,221	25,439	25,932	25,407	25,183	26,585	30,677	27	**49**	30	47	30	47
2025	21,163	13,246	5,839	5,300	5,300	5,603	25,500	25,500	**26,240**	27	16	12	5,013	***5,087***	5,425	5,044	6,102	5,821	***4,964***	7,348	5,452	9,662	4,993	9,221	25,457	25,950	25,445	25,220	26,701	30,810	27	**49**	30	48	30	47
2026	23,798	14,367	5,946	5,300	5,300	5,627	25,500	25,500	**26,298**	27	15	11	5,074	***5,149***	5,522	5,135	6,245	5,957	***4,967***	7,353	5,485	9,721	4,999	9,233	25,474	25,968	25,483	25,257	26,818	30,945	28	**49**	30	48	30	47
2027	26,761	15,584	6,056	5,300	5,300	5,651	25,500	25,500	**26,356**	27	14	11	5,136	***5,211***	5,622	5,227	6,391	6,097	***4,970***	7,358	5,518	9,780	5,006	9,246	25,492	25,986	25,521	25,295	26,937	31,082	28	**49**	31	48	31	48
2028	30,092	16,904	6,168	5,300	5,300	5,675	25,500	25,500	**26,414**	27	14	10	5,198	***5,275***	5,723	5,322	6,542	6,240	***4,974***	7,363	5,552	9,841	5,014	9,261	25,510	26,004	25,559	25,333	27,058	31,222	28	**49**	31	49	31	48
2029	33,838	18,335	6,282	5,300	5,300	5,699	25,500	25,500	**26,472**	27	13	9	5,262	***5,339***	5,827	5,418	6,696	6,387	***4,978***	7,369	5,587	9,903	5,022	9,276	25,528	26,023	25,597	25,371	27,180	31,363	28	**49**	31	49	31	49
2030	38,051	19,888	6,397	5,300	5,300	5,724	25,500	25,500	**26,530**	27	13	9	5,326	***5,404***	5,933	5,516	6,854	6,538	***4,982***	7,375	5,623	9,965	5,031	9,292	25,546	26,041	25,636	25,410	27,305	31,507	28	**49**	31	50	31	49
2031	42,788	21,572	6,515	5,300	5,300	5,748	25,500	25,500	**26,589**	27	12	8	5,391	***5,470***	6,040	5,616	7,017	6,693	***4,987***	7,382	5,659	10,029	5,042	9,311	25,564	26,060	25,675	25,449	27,432	31,653	28	**49**	32	50	32	50
2032	48,115	23,399	6,636	5,300	5,300	5,773	25,500	25,500	**26,647**	27	12	7	5,456	***5,536***	6,150	5,719	7,184	6,853	***4,991***	7,389	5,695	10,094	5,052	9,331	25,583	26,079	25,715	25,488	27,560	31,802	28	**50**	32	51	32	50
2033	54,105	25,381	6,758	5,300	5,300	5,798	25,500	25,500	**26,706**	27	11	7	5,522	***5,604***	6,262	5,823	7,356	7,016	***5,972***	7,092	6,714	7,347	7,209	11,489	25,602	26,098	25,755	25,527	27,691	31,953	28	**50**	32	51	32	50
AAGR: 2013-2033	12.5%	8.5%	1.8%	0.00%	0.00%	0.43%	0.00%	0.00%	**0.22%**	0.00%	4.16%	6.52%	1.20%	***1.20%***	1.78%	1.78%	2.40%	2.40%	***0.84%***	0.27%	1.33%	1.09%	1.73%	0.99%	0.07%	0.07%	0.15%	0.15%	0.43%	0.43%	0.27%	**0.29%**	0.83%	0.86%	0.83%	0.83%

APPENDIX D

Landside Development Alternatives

LANDSIDE DEVELOPMENT ALTERNATIVES

The landside development alternatives presented on the following pages were developed as part of this Airport Layout Plan Update and used in consultation with Airport sponsor so as to identify the future development items depicted on the ALP drawings provided to the FAA as well as to support Airport decision making and solidify a vision for the Airport's future. These alternatives identified two major areas for future landside development on the west and east sides of the Airport and additionally examined a single development option if Runway 8/26 were to be decommissioned. The development options on the Airports west side examine options for constructing a winter storage apron which would allow aircraft not in active service in the winter months to be stored off of the Airport's primary transient apron thereby freeing up space and improving the utility of this existing apron. As a result of grade considerations and the need to minimize cost, the development alternatives on the Airports west side were created with the understanding that aircraft wintering on this apron would be towed to and from this apron. No taxiing would take place into or out of this facility. The development alternatives on the Airport's east side all examine the potential to improve the existing transient/based aircraft apron near the FBO and terminal building while also providing additional hangar facilities. The single runway alternative developed was created so as to provide some perspective as to the spatial constraints and land areas available for development should Runway 8/26 be decommissioned and be maintained as a taxiway in the future.

After consultation with the Airport management and Sponsor Westside Development #2 (W-2) and Eastside Development #4 (E-4) were selected as the preferred development concepts to be included on the Airport Layout Plan. These alternatives were argued to support the airports future development goals with minimal cost and least interference with the ultimate concept of decommissioning Runway 8-26. W-2 would utilize the tow road North of the existing SRE building to provide access to a small apron to be constructed northwest of the SRE building capable of supporting the winter storage needs of approximately 10 single-engine aircraft. Some concern was raised relative to the wingtip clearance of aircraft with terrain while on this tow road, but preliminary modeling eased these concerns for smaller Group I aircraft, especially high wing airplanes. E-4 was also selected to be depicted on the ALP as this concept would allow for additional revenue streams to be realized by the airport (for either land or facility leases) in the short term, without impacting the future development which may take place after the closure of Runway 8-26. Additionally, E-4 would improve the existing apron utility by improving access and connectivity and providing additional aircraft tie down positions.

EXHIBIT W-1

WESTSIDE DEVELOPMENT ALTERNATIVE #1

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE

OFZ ROFZ ROFZ ROFZ ROFZ ROFZ ROFZ ROFZ ROFZ ROFZ

RSA RSA RSA RSA RSA RSA RSA RSA RSA

320 322 324 326 328 330 334

RVZ RVZ RVZ RVZ (RVZ) RVZ (RVZ) RVZ

RSA RSA RSA RSA RSA RSA RSA RSA RSA

ROFZ ROFZ ROFZ ROFZ ROFZ ROFZ ROFZ ROFZ ROFZ

25'

12.5'

Potential T-Shade

330

308'

115'

330

12.5'

ROFA ROFA ROFA ROFA ROFA ROFA ROFA ROFA ROFA

Remote Tie-Down Apron

320 340 360 062

-16.08056°

100 50 0 100

KEY MAP

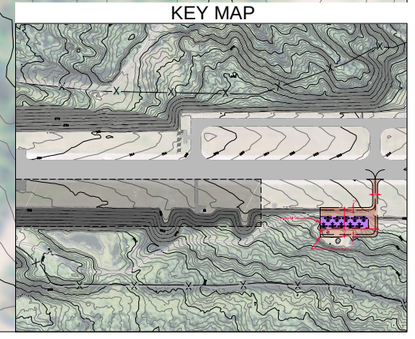

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EXHIBIT W-2

WESTSIDE DEVELOPMENT ALTERNATIVE #2

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE

RVZ (RVZ) RVZ (RVZ) RVZ (RVZ) RVZ (RVZ) RVZ (RVZ) RVZ (RVZ) RVZ (RVZ) RVZ (RVZ) RVZ

RSA RSA RSA RSA RSA RSA RSA RSA

ROFZ ROFZ ROFZ ROFZ ROFZ ROFZ ROFZ ROFZ

ROFA ROFA ROFA ROFA ROFA ROFA ROFA ROFA ROFA

330 340 320 330 310 300 290 320 310

25'

137'

291'

Remote Tie-Down Apron

Lean-To Addition

-16.08056°

100 50 0 100

KEY MAP

Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101-1227
Tel 603-669-3555
Fax 603-669-4168
Web Page: www.hoyletanner.com

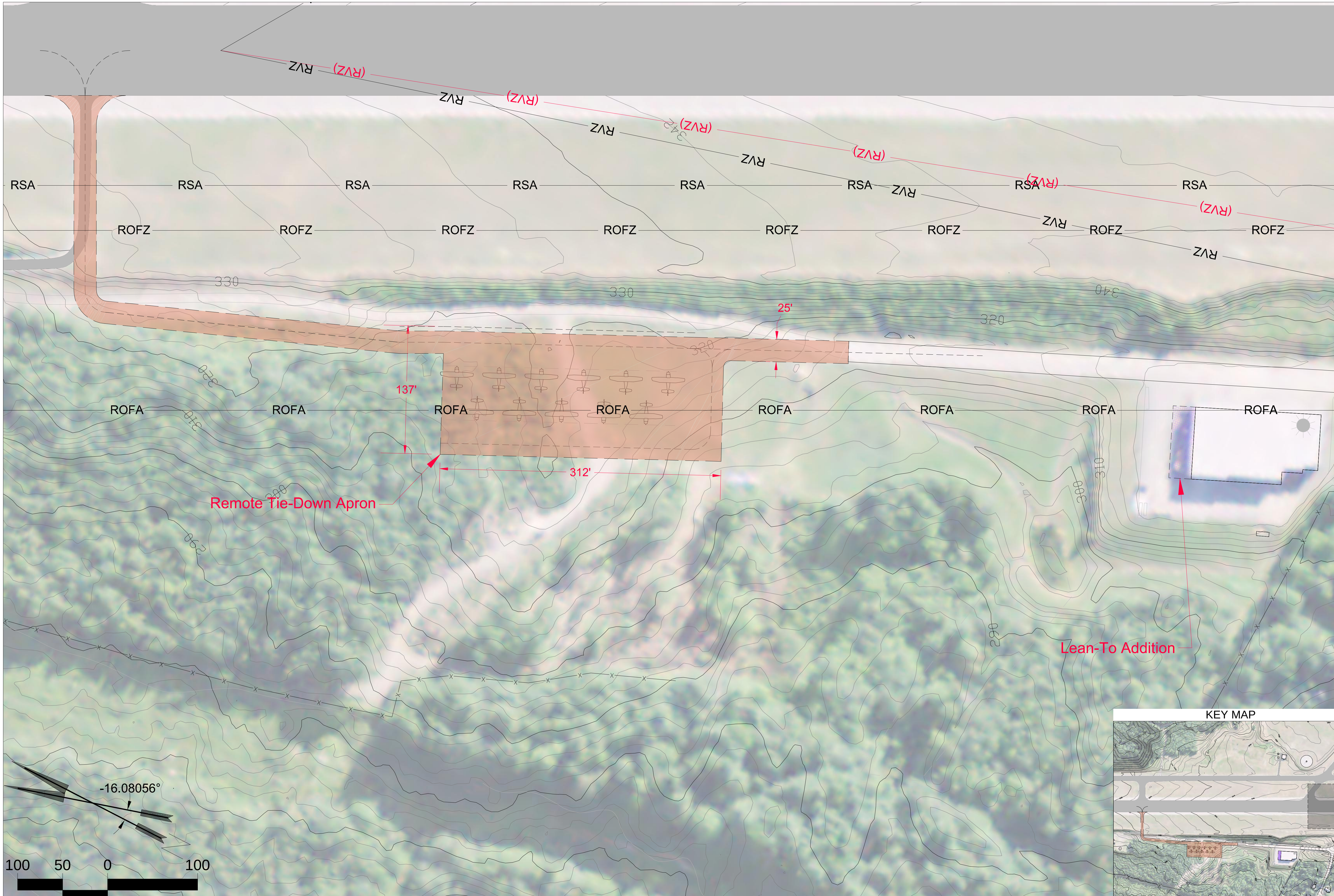

EXHIBIT W-3

WESTSIDE DEVELOPMENT ALTERNATIVE #3

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE

Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101-1227
Tel 603-669-5555
Fax 603-669-4168
Web Page: www.hoyletanner.com

EXHIBIT W-4

WESTSIDE DEVELOPMENT ALTERNATIVE #4

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE

RVZ
(RVZ)
RSA
ROFZ
ROFA
25'
140'
500'
Remote Tie-Down Apron
Lean-To Addition
-16.08056°
100 50 0 100
KEY MAP

Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101-1227
Tel 603-669-5555
Fax 603-669-4168
Web Page: www.hoyletanner.com

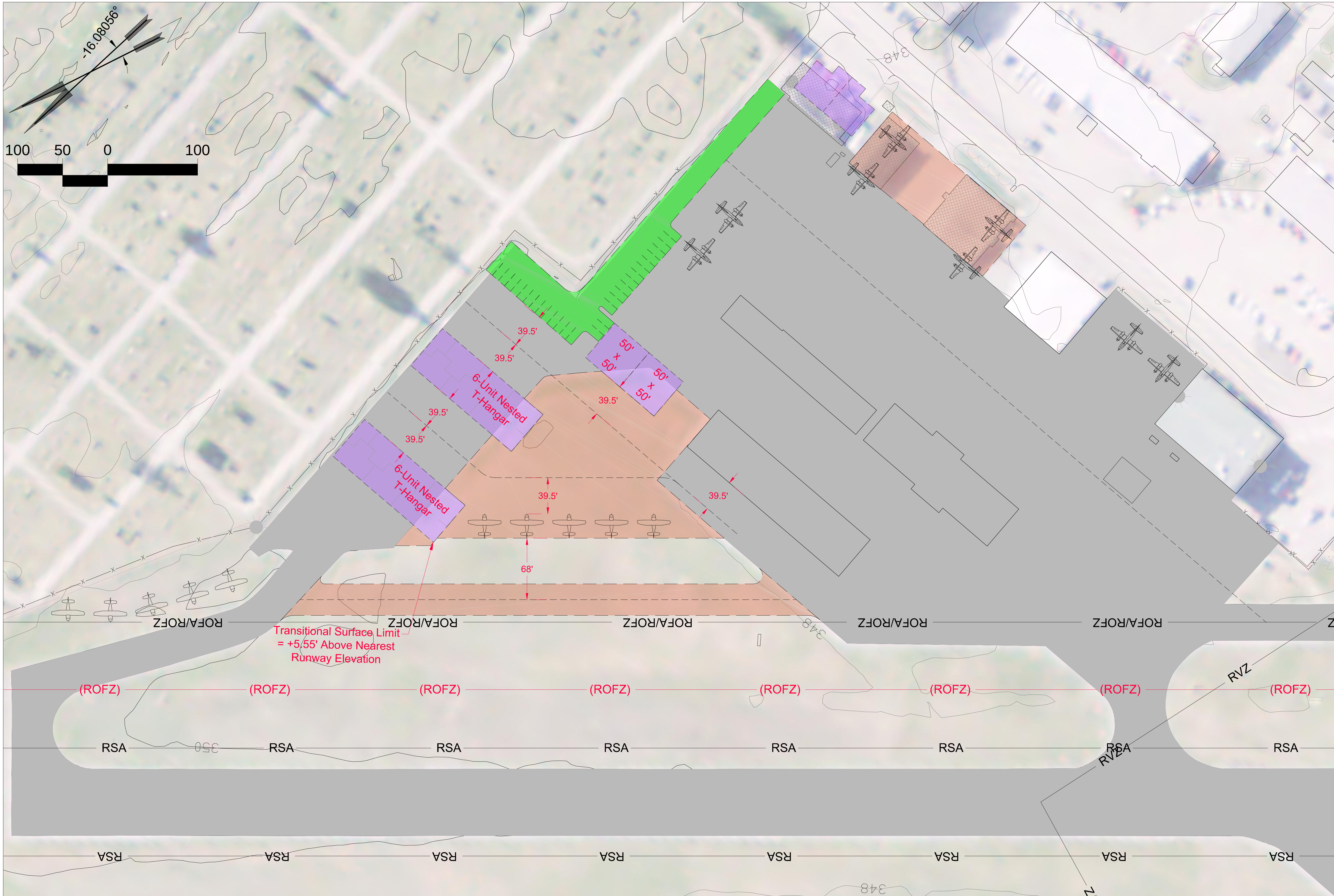

EXHIBIT
E-1

EASTSIDE DEVELOPMENT ALTERNATIVE #1

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE

Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101-1227
Tel 603-669-5555
Fax 603-669-4168
Web Page: www.hoyletanner.com

16.08056°

100 50 0 100

Small Executive Hangar
50' x 52.5'
With Office Space

57.5

39.5'

39.5'

39.5'

39.5'

57.5'

348

ROFA/ROFZ

(ROFZ)

RSA

350

RVZ

KEY MAP

EXHIBIT E-2

EASTSIDE DEVELOPMENT ALTERNATIVE #2

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE

Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101-1227
Tel 603-669-5555
Fax 603-669-1958
Web Page: www.hoyletanner.com

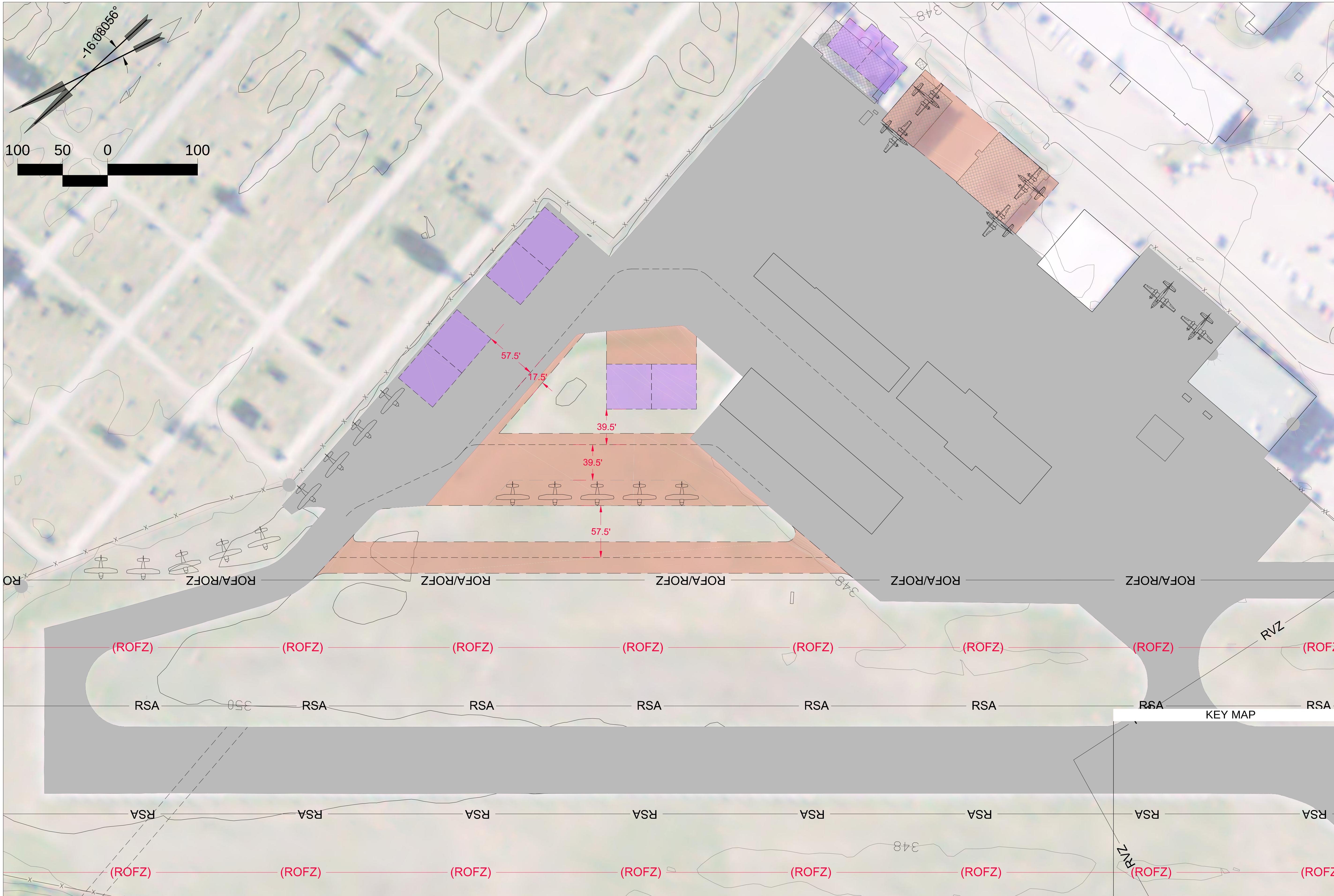

EXHIBIT E-3

EASTSIDE DEVELOPMENT ALTERNATIVE #3

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE

Hoyle, Tanner & Associates, Inc.
150 Dow Street
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Fax 603-669-4168
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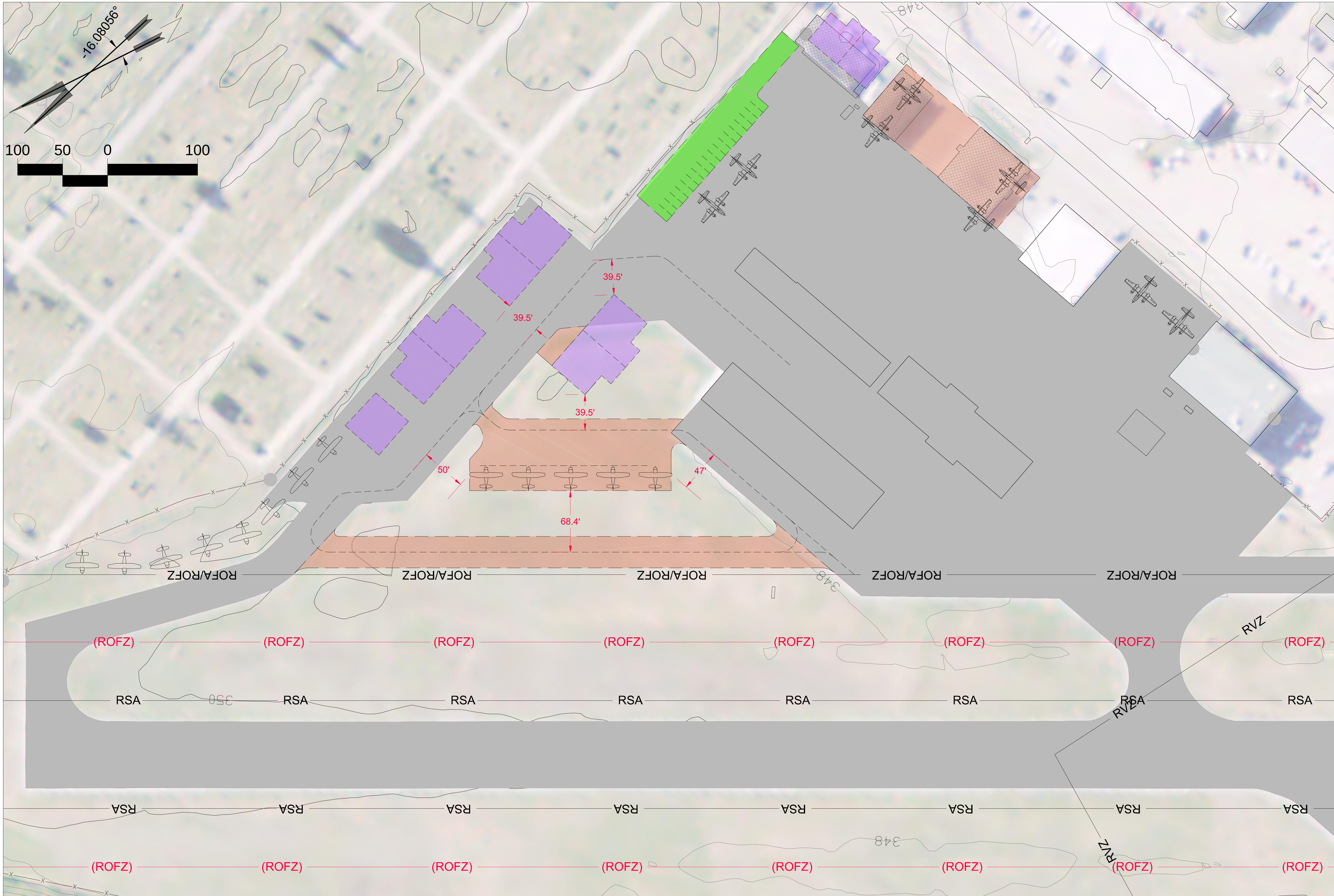


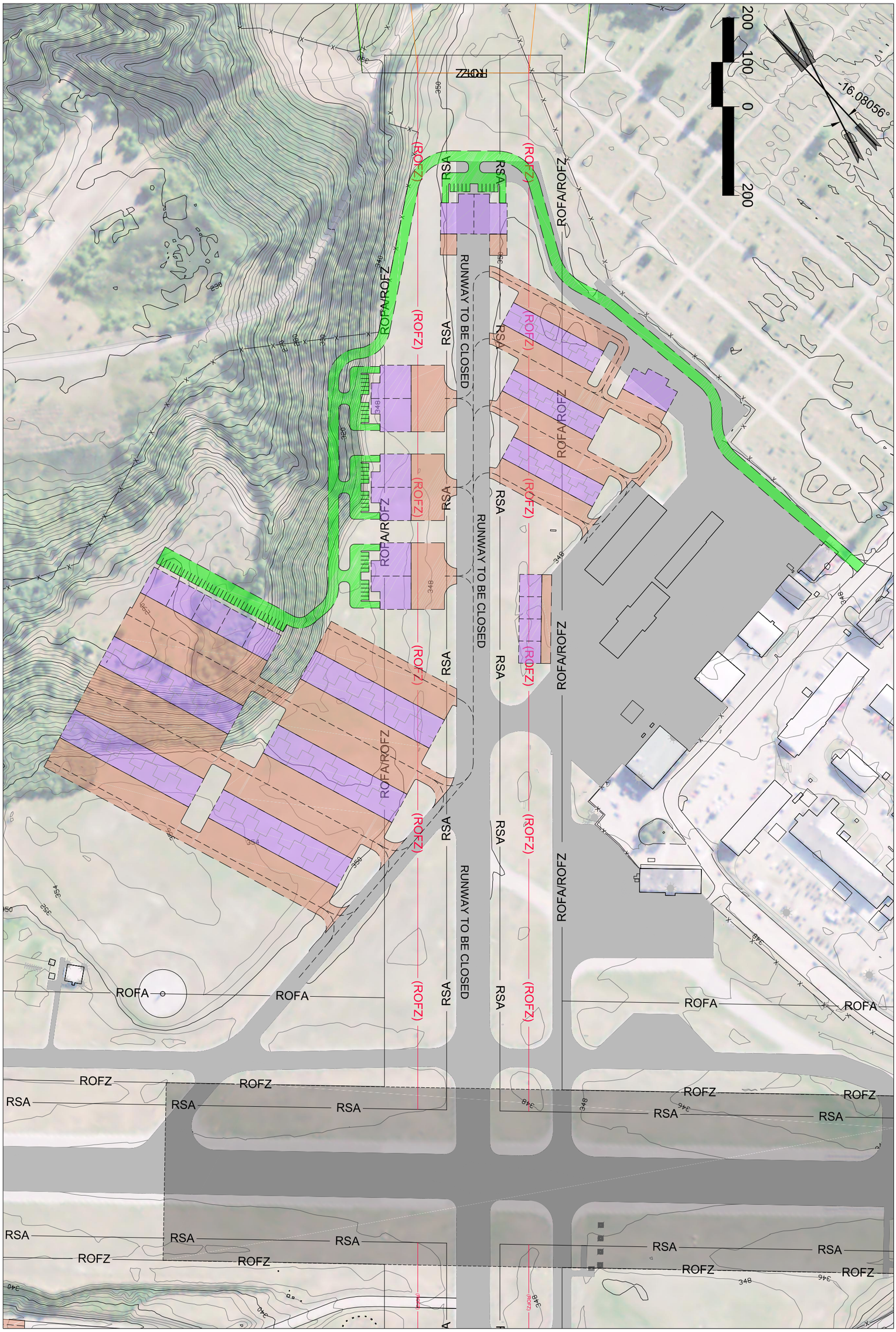
EXHIBIT E-4

EASTSIDE DEVELOPMENT ALTERNATIVE #4

AUGUSTA STATE AIRPORT
AUGUSTA, MAINE

150 Dow Street
Manchester, NH 03101-1227
Tel 603-669-5555
Fax 603-669-4168
Web Page: www.hoyletanner.com

Hoyle, Tanner & Associates, Inc.



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AUGUSTA STATE AIRPORT
AUGUSTA, MAINE

SINGLE RUNWAY ALTERNATIVE #1

EXHIBIT
SRW-1