DALTON MUNICIPAL AIRPORT
JOLLY FIELD

DALTON, GEORGIA

WORK AUTHORIZATION NO. 2018-1
AIRPORT LAYOUT PLAN UPDATE

AP019-9033-35(313) (Project Identification No.)

October 3, 2018 Date:

It is agreed to undertake the following work in accordance with the provisions of the Agreement between the City of Dalton (OWNER) and Barge Design Solutions, Inc. (E/A) dated May 15, 2017.

Scope of Services:

E/A will provide the following services: Airport Layout Plan Update. See Attached Exhibit A – Scope of Work for a more detailed description of the services to be provided.

Time of Performance:

E/A will complete E/A services in time to meet the grant deadlines.

Compensation:

E/A will provide the following basic services (lump sum) as indicated in the attached Exhibit B:

TOTAL BASIC SERVICES = $ 143,175

Agree as to Scope of Services, Time of Performance and Compensation:

The City of Dalton	Barge Design Solutions, Inc.
_____	_____
Date: _____	Date: _____
Witness: _____	Witness: _____

EXHIBIT A

SCOPE OF WORK
for
AIRPORT LAYOUT PLAN UPDATE

GDOT PROJECT NUMBER: AP019-9033-35(313) WHITFIELD COUNTY

INTRODUCTION

This scope of services identifies requisite elements necessary to update the existing Dalton Municipal Airport Layout Plan (ALP) drawing set and narrative report on file for the City of Dalton. An ALP drawing set and narrative report will be the final products of this project and will identify improvements necessary to accommodate aviation activity at the airport during the 20-year planning period, serve as the airport's guide to future development, and meet grant assurance requirements to maintain a current, approved ALP. The Aviation Program Office of the Georgia Department of Transportation (Department) will review and conditionally approve these ALP documents on behalf of the Federal Aviation Administration (FAA), under the State Block Grant Program.

Components and preparation for both the Airport Layout Plan (ALP) narrative and the drawings set include all items in the FAA's Standard Operating Procedures (SOPs) 2.00, *Standard Procedure for FAA Review and Approval of Airport Layout Plans (ALPs)*, dated October 1, 2013, and FAA Advisory Circular (AC) 150/5300-13A (latest change), *Airport Design*, and other applicable FAA Orders, Federal Aviation Regulations (FAR) and ACs. Additionally, the ALP update will be completed in accordance with applicable portions of the following (latest change):

- FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures;*
- FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions;*
- FAA Order 8260.3B, *United States Standard for Terminal Instrument Procedures (TERPS);*
- 14 CFR Part 77, *Objects Affecting Navigable Airspace*;
- FAA Order 5000.3D, *Coordination with the Federal Highway Administration*;
- FAA Order 7400.2, *Procedures for Handling Airspace Matters;*
- FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS);*
- FAA Order 5100.38D, *Airport Improvement Program (AIP) Handbook;*
- FAA Order 7031.2C, *Airway Planning Standard Number One – Terminal Air Navigation Facilities and Air Traffic Control Standard;*
- Other FAA Advisory Circulars, Orders and Regulations, as required.

The Consultant will be responsible for submitting a completed copy of the ALP checklist with the ALP submittal to the airport, GDOT, and FAA. The ALP will contain sufficient data to obtain approvals from the FAA.

ELEMENT 1: PROJECT FORMULATION

The Consultant will prepare a scope of work, time schedule, and man-hour fee proposal for the City of Dalton's approval.

ELEMENT 2A: NARRATIVE REPORT

- **INTRODUCTION**

  The Consultant will start the report off with a succinct introduction that will explain and identify objectives, key issues, and the purpose of the ALP update.

- **INVENTORY OF EXISTING CONDITIONS**

  The Consultant will collect Airport and community data from the FAA, the Department, the airport sponsor and other available sources. This will include both data relative to the Dalton Municipal Airport and the surrounding community, such as land use plans and zoning regulations. Known environmental considerations will be noted during this element; however, a detailed environmental overview of potential impacts will only be prepared as a separate Environmental Assessment (EA). If an EA was completed prior to the start of this ALP Update, the findings from this EA must be included in the narrative report in order to fulfill the environmental requirements outlined in the FAA Checklist. In addition, the Consultant will perform inventories of all physical facilities within the present boundary of the airport, including buildings, runways, taxiways, aprons, internal roadways, visual and electronic approach aids. Specifically, the inventory will identify and describe existing facilities as to quality, type, and condition. In addition a description of the required aeronautical survey will be summarized to address topographic and obstruction survey needs to accomplish the ALP Update requirements.

- **FORECASTS OF AVIATION ACTIVITY**

  The Consultant will utilize historical data on aeronautical activity collected in the Inventory of Existing Conditions task above, and in consideration of FAA Terminal Area Forecasts (TAF) and any other relevant aviation forecasts (i.e., state system plan forecasts), as well as appropriate local and regional demographic characteristics and forecasts, activity projections for the 5-, 10-, and 20-year time frames will be prepared by the Consultant. These forecasts will form the basis for the future airport development program. Socio-economic projections, past trends, and existing FAA and Georgia Statewide Airport System Plan forecasts will be reviewed and analyzed. The analysis will result in either the re-validation of a prior forecast or the establishment of newer simplified forecasts including:

  - Based aircraft by type and number;
  - Local/itinerant and total operations; and,
  - Operations by activity types

- **FACILITY REQUIREMENTS**

  The re-validation of the existing and future critical aircraft anticipated to use the Dalton Municipal Airport throughout the 20-year planning period will be identified. This also provides the airport design standards as defined in the FAA AC 150/5300-13A, *Airport Design*; Federal Aviation Regulation (FAR) Part

77; and other FAA ACs and Orders as appropriate. This element will be critical in the development of the ALP drawing set and will identify the following requirements:

- Airport Reference Code (ARC);
- Runway length;
- Runway and taxiway width;
- Runway Design Code (RDC);
- Approach Reference Code (APRC);
- Departure Reference Code (DPRC);
- FAR Part 77 Surfaces;
- Consideration of pavement needs and strength required;
- All appropriate runway and taxiway design standards;
- Obstruction clearing;
- Instrument approaches requirements;
- Lighting, marking, and signage; and,
- Wind coverage.

Additional analysis will be conducted to determine the requirements for the following facilities:

- T-hangar and open bay hangar space;
- Tie-down and transient aircraft apron;
- Terminal Facilities;
- Fuel storage;
- Navigational aids;
- Weather reporting capability;
- Maintenance requirements; and,
- Land acquisition.

The first four sections of the narrative report (i.e., Introduction, Inventory of Existing Conditions, Forecasts of Aviation Activity and Facility Requirements) will be submitted to GDOT as a working paper for review and approval prior to completing the subsequent sections of the Narrative Report. The Department is required to review and approve any aviation forecast as well as the critical aircraft determination. Once the Department approves the forecast and any revisions requested on previous drafts, the Consultant will start work on the subsequent sections of the Narrative Report.

- **ALTERNATIVE ANALYSIS**

Alternative development layouts will be produced on an as-needed basis for each functional area, depending on the findings of the facility requirements. Any and all alternatives developed will comply with the applicable FAA design standards. A maximum of two (2) alternative layouts will be evaluated for each element analyzed. The merits and shortcomings for each alternative and the rationale for the preferred alternative will be explained in the narrative report. Conditions requiring analysis, such as declared distances, displaced threshold, or non-standard airport features that may require a Modification of Standards (MOS) will be documented in the narrative report and in the ALP drawing set. All preferred alternatives must be shown in the ALP drawing set.

- **IMPLEMENTATION PLAN**

  This section of the narrative report will provide guidelines for recommended airport improvements that were identified in previous sections of the narrative report to be included in the next five-year Capital Improvements Plan (CIP). An explanation will be provided for each CIP project in the narrative report, and also listed in a table that shows each proposed project and the estimated federal, state and local cost for each project in the five-year CIP.

- **CAPITAL IMPROVEMENT PLAN**

  This task will update the Airport Capital Improvement Plan (CIP) submitted annually to the Department. The CIP lists costs and phasing of proposed improvements at the airport and is required when applying for Federal and State funding assistance.

  Developments recommended during the 20-year planning period will be classified in three general development phases. These phases represent the short (5 years), intermediate (10 years), and long-term (20 years) planning periods. The development costs will be broken into amounts eligible for Federal and State funding programs and amounts requiring local participation. Particular focus will be given to detailing estimated costs for short-term development projects. In the first five years, development costs will be shown on a year-to-year basis and prepared at a level of detail consistent with master planning. A detailed five-year CIP will be provided to the FAA and the Department, and will be included in the narrative report. All applicable projects listed on the CIP must be shown in the ALP drawing set to be considered for federal and state funding.

ELEMENT 2B: AIRPORT LAYOUT PLANS

The Airport Layout Plan (ALP) drawing set will be prepared in digital drawing format. Shading and other techniques will be used to indicate the phasing of proposed airport improvement projects. The ALP drawing set will include topographic information obtained from GDOT, USGS mapping, and other federal and state agencies. All sheets within the ALP drawing set must follow the requirements listed in the FAA Checklist, and adhere to requirements set forth by the FAA AC 150/5300-13A, *Airport Design*; Federal Aviation Regulation (FAR) Part 77; and other FAA ACs and Orders. Drawings that will be included in the ALP drawing set are as follows:

- **Title Sheet** - This sheet serves as the plan set cover sheet and provides information to include the airport name, airport sponsor and contact information, grant number, location, and ALP preparer. An index of drawings, graphic representations of the airport location (Scale 1”=500,000” or aeronautical sectional chart), and airport vicinity (Scale 1”=24,000” or USGS quadrangle map) will also be shown on the title sheet.

- **Airport Data Sheet** – This sheet will provide vital information pertinent to the airport, such as: runway and taxiway geometry information, safety critical information, wind information, etc. This sheet can also be combined with the Airport Layout Drawing, as long as the additional information does not clutter the drawing.

- **Airport Layout Drawing** – This sheet shows existing and future airport facilities and serves as the airport’s 20-year development guide. The drawing will include existing and future airside and landside

facility identifications, description labels, imaginary surfaces, and all required dimensions set forth by FAA requirements.

- **Airport Airspace Drawing** – This drawing depicts airport imaginary airspace surfaces based on 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace* for the full extent of all airport development. This drawing will show, in plan view over a USGS Quadrangle base map, all FAR Part 77 surfaces, based on the ultimate runway lengths. This sheet will also show profile views of ultimate approaches. If the profile views cannot fit on this sheet, then the profile views must be drawn on a separate sheet that directly follows the Airport Airspace Drawing sheet. In addition, the Airport Airspace Drawing sheet will also include obstruction data tables. Obstructions within the inner approaches will not be listed in these obstruction data tables, or shown on the drawing. All airspace obstructions for the portions of the surfaces excluded from the Inner Portion of the Approach Surface Drawing (i.e., FAR Part 77 primary, outer approach, horizontal, transitional, and conical surfaces) must be shown on the drawing.

- **Inner Portion of the Approach Surface Drawing** – This sheet depicts the plan and profile view of the inner portion of the approach surface to the runway and a tabular listing of all surface penetrations. The drawing will depict the airport imaginary airspace surfaces contained in 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*. The drawing will depict threshold siting surface associated with United States Standards for Instrument Procedures (TERPS). The drawing viewport(s) will be drawn from the runway threshold to a point on the approach slope 100 feet above the runway threshold elevation. The size of the viewport may restrict each sheet to just one runway end in the plan and profile viewports. Obstruction data for these surfaces will be shown in data tables.

- **Runway Departure Surface Drawing** – This sheet is required for each runway that is designated for instrument departures. The drawing will depict departure surfaces in plan and profile, and adhere to the requirements set forth by the AC 150/5300-13A, *Airport Design*. The drawing viewport(s) will be drawn at a minimum scale of 1”=1000’ Horizontal; 1”=100’ Vertical to show the entire 40:1 departure surface. The size of the viewport may restrict each sheet to just one runway end for the plan and profile drawings. Obstruction data for these surfaces will be shown in data tables.

- **Terminal Area Plan Drawing** – This plan consists of one or more drawings with large-scale depiction of areas with significant terminal facility development. Such a drawing is typically an enlargement of a portion of the ALP. All separations between hangars and airside facilities, taxilanes, and immovable objects will be shown with dimensions.

- **Airport Property Map/Exhibit A** – The Consultant must adhere to the requirements of the FAA AC 150/5100-17, *Land Acquisition and Relocation*. The project team has determined that an Exhibit “A” property map and boundary survey will be required. The Consultant will use FAA Checklist and the FAA ARP SOP 2.00 and 3.00 Exhibit “A” Guidance while preparing the Exhibit A drawing and all associated data tables.

ELEMENT 3: PROJECT DOCUMENTATION

Project documentation (deliverables) will consist of both the ALP drawing set and the narrative report. The narrative report will be printed on 8.5"x11" paper and will be spiral bound. The paper size of the ALP set will be 24"x36" (ARCH D). Any other ALP paper size must be coordinated with the Department prior to the printing of the ALP set. The steps of the deliverables process during the draft and final stages are as follows:

- **Initial Draft Submittal to the Department** – One electronic and hard copy each of the draft narrative report and Draft ALP drawing set will be delivered to the Department Planning Manager, along with a completed FAA Checklist 2.00 and 3.00.

- **FAA Circularization Draft Submittal to the Department** – Upon concurrence of the revisions based on Department comments, the Consultant will send two (2) spiral bound paper copies of the final narrative report, and two (2) paper copies of the full ALP drawing set to the Department Planning Manager, along with one electronic copy each of the final narrative report and ALP drawing set in PDF format.

- **Final Submittal to the Department** – Upon concurrence of revisions based on FAA and Department comments, the Consultant will send five locally approved paper copies of the ALP drawing set to the Department Planning Manager for Conditional Approval.

  Interim electronic copies or paper copies may be required as needed for additional review. The Department will send the final narrative report and conditionally approved copies of the ALP drawing set to the Sponsor, FAA, and Consultant. Additional copies may be sent for approval if the Sponsor or Consultant would like additional stamped copies.

  In addition to final ALP copies, the Consultant will also provide final copies of AutoCAD files to the Airport Sponsor and the Department. These files must be in 2010 DWG format, and saved on a compact disc (CD). Prior to the start of the ALP Update, the Consultant will coordinate with their sub-contracted surveying company that will be preparing the Geographic Information System (GIS) data, Planimetrics and Ortho-Rectified Aerials to ensure that all layers in the CAD files are layered according to Chapter 5 of the FAA AC 150/5300-18B, *Survey and Data Standards for Submission of Aeronautical Data Using Airports GIS*.

ELEMENT 4: MEETINGS and COORDINATION

Two (2) meetings with the Department and the City are assumed for the ALP Update described in this scope of services. The first meeting will be an ALP kickoff meeting between the City of Dalton, the Consultant and the Department. The City of Dalton and the Consultant will coordinate with Department representatives to determine the best time for this meeting. The Consultant will schedule the second meeting with the City of Dalton once viable alternatives are found from the alternatives analysis phase of the ALP Update. The Consultant will work with the City of Dalton to select preferred alternatives to include in the five-year CIP and will depict the projects in the ALP drawing set.

Exhibit B

Dalton Municipal Airport - ALP Update

Cost Summary

ELEMENT 1. PROJECT FORMULATION	
Labor Subtotal	**$2,133.13**
Direct Cost	**$0.00**
TOTAL (Lump Sum)	**$2,133.13**
ELEMENT 2A. NARRATIVE REPORT	
Labor Subtotal	**$23,440.76**
Direct Cost	**$575.25**
TOTAL (Lump Sum)	**$24,016.01**
ELEMENT 2B. ALP DRAWING SET	
Labor Subtotal	**$103,111.60**
Direct Expenses	**$0.00**
TOTAL (Lump Sum)	**$103,111.60**
ELEMENT 3. PROJECT DOCUMENTATION	
Labor Subtotal	**$2,690.40**
Direct Expenses	**$1,200.00**
TOTAL (Lump Sum)	**$3,890.40**
ELEMENT 4. MEETINGS AND DOCUMENTATION	
Labor Subtotal	**$8,873.80**
Direct Expenses	**$1,150.50**
TOTAL (Lump Sum)	**$10,024.30**

ALP Total $143,175

PROJECT FORMULATION

Element 1: Project Formulation	*Hourly Breakdown*														*Total Man Hours*	*Labor Cost*
	Principal	*Project Manager*	*Civil Engineer 1*	*Civil Engineer 2*	*Electrical Engineer*	*Designer*	*Architect*	*Sr. Aviation Planner*	*Aviation Planner*	*Cadd Operator*	*Admin*	*RLS/Survey Manager*	*Survey Crew (2-Person)*	*Survey Crew (3-Person)*		
	$242.77	*$191.98*	*$127.58*	*$101.54*	*$202.22*	*$98.98*	*$207.34*	*$170.65*	*$143.35*	*$73.38*	*$78.09*	*$104.95*	*$131.40*	*$183.45*		
A & E Contract Preparation		*4*						*8*							*12*	*$ 2,133.13*
Use below if subconcultant preforms this task and not above																
Subconsultant's Rates ----->																
															0	*$ -*
Coordination and Admin. For subconsultant (no hours, percentage)																*$ -*
LABOR TOTAL	*0*	*4*	*0*	*0*	*0*	*0*	*0*	*8*	*0*	*0*	*0*	*0*	*0*	*0*		*$ 2,133.13*

NARRATIVE REPORT

Element 1A: Preparation of Narrative Report Chapters	*Hourly Breakdown*														*Total Man Hour*	*Labor Cost*
	Principal	*Project Manager*	*Civil Engineer 1*	*Civil Engineer 2*	*Electrical Engineer*	*Designer*	*Architect*	*Sr. Aviation Planner*	*Aviation Planner*	*Cadd Operator*	*Admin*	*RLS/Survey Manager*	*Survey Crew (2-Person)*	*Survey Crew (3-Person)*		
	$242.77	*$191.98*	*$127.58*	*$101.54*	*$202.22*	*$98.98*	*$207.34*	*$170.65*	*$143.35*	*$73.38*	*$78.09*	*$104.95*	*$131.40*	*$183.45*		
Introduction								4							4	$ 682.60
Inventory of Existing Conditions								24							24	$ 4,095.60
Forecasts of Aviation Activity								24							24	$ 4,095.60
Facility Requirements			2					16							18	$ 2,985.56
Alternative Analysis			40							8					48	$ 5,690.15
Implementation Plan			4					6							10	$ 1,534.21
Capital Improvement Plan			20					8		6					34	$ 4,357.04
Use below if subconcultant preforms this task and not above																
Subconsultant's Rates ----->																
															0	$ -
Coordination and Admin. For subconsultant (no hours, percentage)																$ -
LABOR TOTAL	*0*	*0*	*66*	*0*	*0*	*0*	*0*	*82*	*0*	*14*	*0*	*0*	*0*	*0*		*$ 23,440.76*

Direct Expenses

Mileage	*$354.25*	*650 miles round trip @ $0.545/mi.*
Hotel	*$171.00*	
Per Diem	*$50.00*	
	$575.25	

AIRPORT LAYOUT PLAN DRAWING SET

Element 1B: Preparation of the Airport Layout Plan (ALP) Drawing Set	***Hourly Breakdown***														***Total Man Hours***	***Labor Cost***
	Principal	***Project Manager***	***Civil Engineer 1***	***Civil Engineer 2***	***Electrical Engineer***	***Designer***	***Architect***	***Sr. Aviation Planner***	***Aviation Planner***	***Cadd Operator***	***Admin***	***RLS/Survey Manager***	***Survey Crew (2-Person)***	***Survey Crew (3-Person)***		
	$242.77	***$191.98***	***$127.58***	***$101.54***	***$202.22***	***$98.98***	***$207.34***	***$170.65***	***$143.35***	***$73.38***	***$78.09***	***$104.95***	***$131.40***	***$183.45***		
Title Sheet										2					*2*	*$ 146.76*
Airport Data Sheet								*10*		12					*22*	*$ 2,587.05*
Airport Layout Drawing		*6*						*24*		40					*70*	*$ 8,182.67*
Airport Airspace Drawing			*6*					*20*		22					*48*	*$ 5,792.82*
Inner Portion of the Approach Surface Drawing			*6*					*16*		16					*38*	*$ 4,669.94*
Runway Departure Surface Drawing								*12*		14					*26*	*$ 3,075.11*
Terminal Area Plan Drawing		*4*						*8*		18					*30*	*$ 3,453.96*
Airport Property Map/Exhibit A								*8*				*38*			*46*	*$ 5,353.29*
Boundary Survey of Airport															*0*	*$ -*
Total (Barge Design Soultions)																***$ 33,261.60***
Use below if subconcultant preforms this task and not above																
Subconsultant's Rates ----->																
Photogrammetry and Mapping - Woolpert																*$ 7,800.00*
Additional Scope for Spec -18B and AGIS - Woolpert																*$ 55,700.00*
Coordination and Admin. For subconsultant (no hours, percentage)																*$ 6,350.00*
LABOR TOTAL	*0*	*10*	*12*	*0*	*0*	*0*	*0*	*98*	*0*	*124*	*0*	*38*	*0*	*0*		***$ 103,111.60***

PROJECT DOCUMENTATION

Element 2: Project Documentation	*Hourly Breakdown*														*Total Man Hours*	*Labor Cost*
	Principal	*Project Manager*	*Civil Engineer 1*	*Civil Engineer 2*	*Electrical Engineer*	*Designer*	*Architect*	*Sr. Aviation Planner*	*Aviation Planner*	*Cadd Operator*	*Admin*	*RLS/Survey Manager*	*Survey Crew (2-Person)*	*Survey Crew (3-Person)*		
	$242.77	*$191.98*	*$127.58*	*$101.54*	*$202.22*	*$98.98*	*$207.34*	*$170.65*	*$143.35*	*$73.38*	*$78.09*	*$104.95*	*$131.40*	*$183.45*		
Initial Hard Copy and Electronic Copy of Draft Narrative Report and ALP to the Department for Review								*1*		4	*2*				*7*	*$ 620.35*
FAA Circularization - Two Hard Copies of Narrative Report and ALP to the Department for FAA Circularization								*2*		4	*2*				*8*	*$ 791.00*
Final - Submit five final hard copiies of ALP set to the Department for conditioal approval								*2*		4	*2*				*8*	*$ 791.00*
Submittal of AutoCAD files in 2010 DWG format to the Department and Airport Sponsor								*2*		2					*4*	*$ 488.06*
Use below if subconcultant preforms this task and not above																
Subconsultant's Rates ----->																
															0	*$ -*
Coordination and Admin. For subconsultant (no hours, percentage)																*$ -*
LABOR TOTAL	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*7*	*0*	*14*	*6*	*0*	*0*	*0*		*$ 2,690.40*

MEETINGS AND COORDINATION

Element 3: Meetings and Coordination	*Hourly Breakdown*														*Total Man Hours*	*Labor Cost*
	Principal	*Project Manager*	*Civil Engineer 1*	*Civil Engineer 2*	*Electrical Engineer*	*Designer*	*Architect*	*Sr. Aviation Planner*	*Aviation Planner*	*Cadd Operator*	*Admin*	*RLS/Survey Manager*	*Survey Crew (2-Person)*	*Survey Crew (3-Person)*		
	$242.77	*$191.98*	*$127.58*	*$101.54*	*$202.22*	*$98.98*	*$207.34*	*$170.65*	*$143.35*	*$73.38*	*$78.09*	*$104.95*	*$131.40*	*$183.45*		
ALP Kickoff Meeting		*8*						*17*							*25*	*$ 4,436.90*
Development Alternatives Selection Meeting		*8*						*17*							*25*	*$ 4,436.90*
Use below if subconcultant preforms this task and not above																
Subconsultant's Rates ----->																
															0	*$ -*
Coordination and Admin. For subconsultant (no hours, percentage)																*$ -*
LABOR TOTAL	*0*	*16*	*0*	*0*	*0*	*0*	*0*	*34*	*0*	*0*	*0*	*0*	*0*	*0*		*$ 8,873.80*

Direct Expenses

Mileage	*$708.50*	*(2 Trips) 650 miles round trip @ $0.545/mi.*
Hotel (2 Nights)	*$342.00*	
Per Diem	*$100.00*	
	$1,150.50	

WOOLPERT
ARCHITECTURE | ENGINEERING | GEOSPATIAL

September 4, 2018

D. Keith Shippey, C.M.
Barge Design Solutions
2047 West Main Street, Suite 1
Dothan, Alabama 36301

RE: Proposal: Aeronautical Survey at Dalton Municipal Airport (DNN)

Dear Mr. Shippey:

We appreciate the opportunity to provide a proposal for supporting Barge Design Solutions with geospatial services at the Dalton Municipal Airport (DNN) in Dalton, GA. The fee and bulleted list of scope functions is understood to be completed in accordance with the FAA Advisory Circulars 150/5300-16A, -17C, change 1 and -18B, change 1 and FAA SOP 2.00, Standard Procedure for FAA Review and Approval of Airport Layout Plans.

Project Understanding

Woolpert understands that this project is focused on the update of an Airport Layout Plan. Woolpert's role will be focused on meeting the requirements of AC-18B, Table 2-1, Survey Requirements Matrix, for the Airport Layout Plan (ALP) column and performing these three main tasks:

1) Obstruction analysis for AC 150/5300-18B, Vertically Guided Approach Obstruction Identification Surfaces as shown in Attachment "A" for Existing Runway 14/32.

2) Obstruction analysis for FAR Part 77, PIR surface for existing Runway 14 and FAR Part 77, Non-Precision Type C for existing Runway 32. Airspace analysis for Runway Type 6 and 9 for existing Runway 14 and Runway Type 5 and 9 for existing Runway 32, pursuant to Draft Table 3-2, AC 150/5300-13A, Change 2.

3) Planimetric/topographic mapping of Mapping Limits as shown in Attachment "B."

Task 01 - Obstruction analysis for AC 150/5300-18B, Vertically Guided Approach Obstruction Identification Surfaces as shown in Attachment "A" for Existing Runways 14/32.

- Initiate and complete the AGIS Project set up process for a project on the AGIS web portal as an Airport Layout Plan – Periodic Update.
  - Develop SOW and plans as required.
- PACS/SACS have not been established at DNN, Temporary Survey Marks (TSMs) will be established for the basis of control in accordance with AC-16A.
- Ground survey to be performed by Woolpert.
- Establish photogrammetric control and collect stereo imagery covering the surface area defined by the Vertically Guided Runway standards.
  - Estimated 18 control points and 5 check points.
  - Collect imagery at an imagery scale of 1"=800', flight layout will be provided.
  - Collected with leaf-on conditions.
- Geo-referencing of aerial photography.
- Runway critical point survey on all usable runways.
- Runway profile survey on all usable runways.

11301 Carmel Commons Blvd., Suite 300
Charlotte, NC 28226
704.526.3018

- Navigational aid inventory for NAVAIDs associated to the airport (within 10 NM of ARP) including the associated perpendicular points.
- Obstruction analysis for objects penetrating the Vertically Guided surfaces.
    - Woolpert will request existing obstruction data for DNN from the FAA for review of the OIS. **This is a value-added service where the airspace around DNN and the existing obstacles would be updated, rather than new obstacles being created in the FAA's database, on top of what already resides there.**
    - Woolpert will collect objects penetrating the OIS using the Object Density Selection Criteria (ODSC) as specified in Section 2.7.1.6 of AC 150/5300-18B.
- Development of new ortho-photography for the 18B Vertically Guided Surface area.
    - Pixel resolution of 0.5-feet over the entire survey area.
- Collect major landmark features within imagery coverage.
- Population of calculable and required attributes.
- Develop an AGIS compliant data files containing the safety critical data required to achieve instrument approach procedure development.
- Develop the final reports and deliver to AGIS.
    - Imagery Acquisition Report
    - Final Project Report

Task 02 - Obstruction analysis for FAR Part 77, PIR (truncated to 20,200') for Existing Runway 14 and FAR Part 77, Non-Precision Type C for Existing runway 32. Airspace analysis for Runway Type 6 and 9 for Existing Runway 14 and Airspace analysis for Runway Type 5 and 9 for Existing Runway 32, pursuant to Draft Table 3-2, AC 150/5300-13A, Change 2.

- Obstruction analysis for surface penetrations of the FAR Part 77 surfaces.
    - The existing Runway 14 is a PIR surface (PIR surface will be truncated to 20,200').
    - Existing Runway 32 is a Non-Precision Type C surface.
    - FAR Part 77 analysis will include Primary, Approach, Transition, Horizontal, and Conical surfaces.
    - FAR Part 77 analysis will include an AutoCAD file to be incorporated into the ALP.
    - Draft Table 3-2, AC-13A surface analysis for Existing Runway 14/32.
        - Runway Type 6 and 9 for Runway 14
        - Runway Type 5 and 9 for Runway 32
- Woolpert will collect objects penetrating the above-specified OIS using the object density selection criteria as specified in Section 2.7.1.6 of AC 150/5300-18B.
- Develop and deliver to Barge Design Solutions a Microsoft Excel file containing information to all Obstacles that were collected within the Obstruction Identification Surfaces:
    - 18B applicable surfaces, Draft Table 3-2 applicable surfaces and applicable FAR Part 77 surfaces.
    - This spreadsheet will contain Northing, Easting, Elevation, Penetration Depth, Station, and Offset information.

Task 03 - Planimetric/Topographic mapping of Mapping Limits as shown in Attachment "B."

- Utilize imagery collected for airspace analysis and AC-17C deliverables for development of planimetric and topographic mapping.
- Develop mapping features to generate 1"=100' scale mapping at 2' contour intervals.
- Mapping will include features required for standard Airport Layout Plan (ALP) base mapping as shown in Attachment "C."
- Mapping will also include the following additional features:
    - Forest stand area – on and off airport
    - Building spot elevations – on airport
- Mapping file will be delivered in an AC-18B compliant AGIS file and an AutoCAD format with standard, discernable ALP blocks, symbols and line types.
- Submit data to the Airport Layout Plan – Periodic Update AGIS project created in Task 01.

Lump Sum Fee Breakdown

Lump Sum Fee Estimate AGIS Periodic Update and Design Surveys	
Task 01: AGIS compliant AC-18B Surveys	$54,200.00
Task 02: FAR Part 77 & 13A Obstruction Analysis (following ODSC requirements)	$1,500.00
Task 03: Planimetric/Topographic Mapping (2')	$7,800.00
Lump Sum Fee Total =	**$63,500.00**

Woolpert estimates the entire project to take 6 months from the date of imagery acquisition to the delivery of the final data file and report to the Airports GIS website. The proposed fee estimates are valid for ninety (90) days from proposal date.

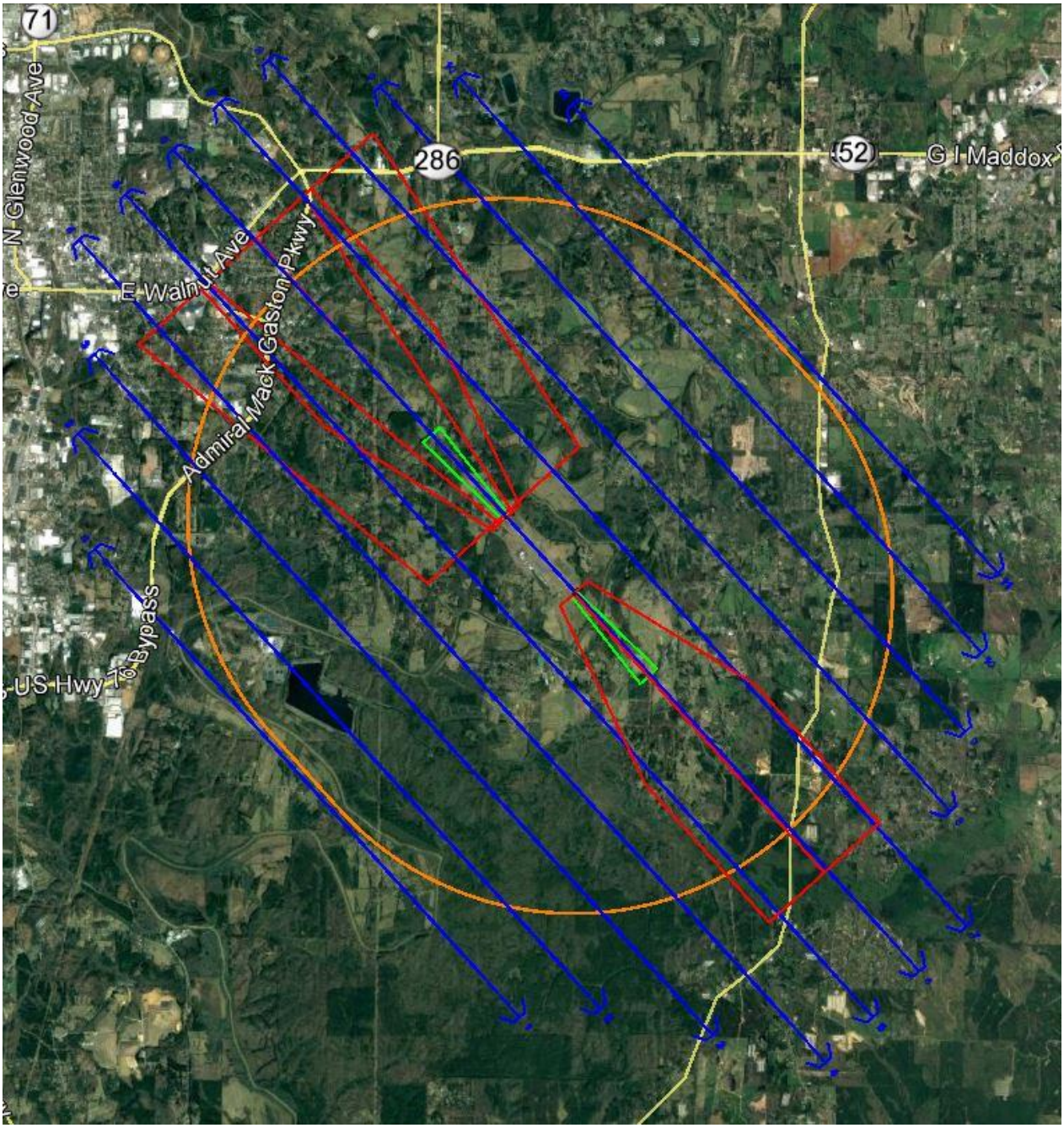
Please don't hesitate to contact me to discuss any comments or questions you may have (704.526.3018).

Sincerely,

Woolpert, Inc.
Paul F. Akers, PLS, PMP
Aviation Project Manager

Woolpert, Inc.
Thomas E Mackie, PS
Aviation Practice Leader
Vice President

Attachment A: Flight Layout (6” GSD Imagery)



Attachment B: Mapping Limits

Attachment C: Standard Mapping Features

Minimum To Develop ALP							
Safety Critical					**Non-Safety Critical**		
		On Airport	Off Airport			On Airport	Off Airport
1	AirportControlPoints	X	X	1	AircraftGateStand	X	
2	CoordinateGridArea	X	X	2	AircraftNonMovementArea	X	
3	MarkingArea (Runway only)	X		3	AirfieldLight	X	
4	MarkingLine (Runway only)	X		4	AirportSign	X	
5	Navaidequipment	X	X	5	Apron	X	
6	Obstacle	X	X	6	ArrestingGear	X	
7	ObstructionArea	X	X	7	Bridge	X	X
8	ObstructionIDSurface	X	X	8	Building	X	X
9	Runway	X		9	DrivewayArea	X	
10	RunwayBlastPad	X		10	DrivewayCenterline	X	
11	RunwayCenterline	X		11	ElevationContour	X	X
12	RunwayElement	X		12	Fence	X	
13	RunwayEnd	X		13	ForestStandArea	X	
14	RunwayHelipadDesignSurfaces	X	X	14	Gate	X	
15	RunwayIntersection	X		15	ImageArea	X	X
16	RunwayLabel	X		16	LandmarkSegment	X	X
17	RunwayLAHSO	X		17	MarkingArea (Off Runway)	X	
18	TouchDownLiftOff	X		18	MarkingLine (Off Runway)	X	
				19	MovementArea	X	
				20	ParkingLot	X	X
				21	PassengerLoadingBridge	X	
				22	RailroadCenterline	X	X
				23	RailroadYard	X	X
				24	RoadCenterline	X	X
				25	RoadPoint	X	X
				26	RoadSegment	X	X
				27	RunwayArrestingArea	X	
				28	Shoreline	X	X
				29	Shoulder	X	
				30	State	X	X
				31	TankSite	X	
				32	TaxiwayElement	X	
				33	Taxiwayholdingposition	X	
				34	TaxiwayIntersection	X	
				35	Tower	X	X
				36	Wetland (no official delineation)	X	X

Attachment D: Survey Requirements

Intended End Use of the Data Required Tasks V	AC Reference	Airport Layout Plan (ALP)	Construction Airside	**Comments**
Provide a Survey and Quality Control Plan	150/5300-16/17/18	•	•	
Establish or validate Airport Geodetic Control	150/5300-16	•	•	PACS and SACS do not exist. Establish TSMs only
Perform, document and report the tie to National Spatial Reference System (NSRS)	150/5300-16	•		
Survey runway end(s)/threshold(s)	150/5300-18	•	•	
Monument runway end(s)/threshold(s)	150/5300-18	•	•	
Document runway end(s)/threshold location(s)	150/5300-18	•	•	
Identify and survey any displaced threshold(s)	150/5300-18	•	•	
Monument displaced threshold(s)	150/5300-18	•	•	
Document displaced threshold(s) location	150/5300-18	•	•	
Determine or validate runway length	150/5300-18	•	•	
Determine or validate runway width	150/5300-18	•	•	
Determine runway profile using 50 foot stations	150/5300-18	•	•	
Determine runway profile using 10 foot stations	150/5300-18	N/A	N/A	
Determine the touchdown zone elevation (TDZE)	150/5300-18	•		
Determine and document the intersection point of all specially prepared hard surface (SPHS) runways	150/5300-18	•		
Determine and document the horizontal extents of any Stopways	150/5300-18	•		
Determine any Stopway profiles	150/5300-18	•		
Determine if the runway has an associated clearway	150/5300-18	•		
Survey clearway to determine objects penetrating the slope	150/5300-18	•		
Determine and document the taxiway intersection to threshold distance	150/5300-18	•		
Determine runway true azimuth	150/5300-18	•		
Determine or validate and document the position of navigational aids	150/5300-18	•		
Determine or validate and document the position of runway abeam points of navigational aids	150/5300-18			
Determine potential navigational aid screening objects	150/5300-18			
Collect and document VOR receiver checkpoint location and associated data	150/5300-18			
Perform or validate and document an airport airspace analysis	150/5300-18	•	•	
Collect and document helicopter touchdown lift off area (TLOF)	150/5300-18	•	•	
Collect and document helicopter final approach and takeoff area (FATO)	150/5300-18	•	•	
Collect or validate and document airport planimetric data	150/5300-18	•	•	For Mapping area only as show in Attachment B
Determine or validate the elevation of the Air Traffic Control Tower Cab Floor (if one is on the airport)	150/5300-18	•	•	
Perform or validate a topographic survey	150/5300-18	•	•	For Mapping area only as show in Attachment B
Collect and document runway and taxiway lighting	150/5300-18	•		
Collect and document parking stand coordinates	150/5300-18			
Collect cultural and natural features of landmark value	150/5300-18	•		
Determine elevation of roadways at the intersecting point of the Runway Protection Zone (RPZ) or the runway centerline extended	150/5300-18	•		
Determine all Land Use to 65 DNL contour	150/5300-18	•		
Document features requiring digital photographs	150/5300-18	•	•	
Document features requiring sketches	150/5300-18	•	•	
Collect position and type of runway markings	150/5300-18	•		
Collect position and type taxiway markings	150/5300-18			
Locate, collect, and document photo ID points	150/5300-17			
Identify collect, and document wetlands or environmentally sensitive areas	150/5300-18	•		
Collect imagery	150/5300-17	•		
Provide a final Project Report	150/5300-16/18	•	•	