



## Staff Report

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**File #:** 15-760, **Version:** 1

**Agenda Date:** 2/23/2016

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**Subject:**

First amendment to the agreement with Jacobs Engineering Group, Inc. for consultant services for the Airport Improvement Project - Taxiway Rehabilitation Phase 2 at the St. Petersburg-Clearwater International Airport.

**Recommended Action:**

Approval and execution of the first amendment with Jacobs Engineering Group, Inc. (Jacobs) for consultant services for the Airport Improvement Project - Taxiway Rehabilitation Phase 2 at the St. Petersburg-Clearwater International Airport (Airport).

Contract No.112-0413-CN; in the amount of \$301,214.00.

**Strategic Plan:**

Foster Continual Economic Growth and Vitality

4.4 Invest in infrastructure to meet current and future needs.

**Summary:**

This amendment is to provide for additional design services for the pavement rehabilitation of Taxiway "T" to be incorporated into the completed design documents for Taxi Rehabilitation, Phase 2 project.

**Background Information:**

An agreement with Jacobs for professional consulting services related to design for the Taxiway Rehabilitation - Phase 2 project was approved by the Board of County Commissioners on September 17, 2013 in the amount of \$594,345.00 for a thirty (30) month term. The design documents were completed April 1, 2015 with the intent of advertising for construction in the spring of 2016 due to the Federal Aviation Administration (FAA) funding schedule.

Florida Department of Transportation's last airfield pavement condition index survey determined that Taxiway "T" had deteriorated to a condition requiring rehabilitation. The increase in airline traffic has caused certain airfield pavement surfaces to exhibit a more rapid deterioration.

Airport staff continuously evaluates the airfield infrastructure and revises the Capital Improvement Program as needed to ensure pavement conditions are maintained. In summer 2015, Airport staff consulted with the FAA and obtained their authorization to include the rehabilitation of Taxiway "T" in the Taxiway Rehabilitation - Phase 2 construction documents.

**Fiscal Impact:**

Total approved expenditure to date: \$594,345.00

Requested increase for first amendment: \$301,214.00

Total revised estimated expenditures \$895,559.00

Funding is derived from Passenger Facility Charges, Federal Aviation Administration grants and Florida Department of Transportation grants.

**Staff Member Responsible:**

Thomas Jewsbury, Director, Airport  
Joe Lauro, Director, Purchasing

**Partners:**

N/A

**Attachments:**

First Amendment

## FIRST AMENDMENT

This Amendment made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 2016, by and between PINELLAS COUNTY, a political subdivision of the State of Florida, hereinafter referred to as "County," and JACOBS ENGINEERING GROUP, INC., Tampa, FL hereinafter referred to as "Consultant,"

### WITNESSETH:

WHEREAS, the County and the Contractor entered into an agreement on September 17, 2013, pursuant to Pinellas County Contract No. 112-0413-CN (hereinafter "Agreement") pursuant to which the Contractor agreed to provide Consulting Services for St. Petersburg-Clearwater International Airport Capital Improvement Projects and specifically Taxiway Rehabilitation, Phase II, Project No. 000036A for County; and

WHEREAS, Section 3, Services to be Furnished by the Consultant, paragraph 3.9.1, provides for additional services as may become necessary because of changes in the Scope of Project to be provided by Consultant when approved by the Board of County Commissioners; and

WHEREAS, the County and the Contractor now wish to modify the Agreement in order to provide for additional services at a non-to-exceed amount, under the same terms, and conditions;

NOW, THEREFORE, the parties agree that the Agreement is amended as follows:

1. Additional Services are hereby authorized as set out in Exhibit A, Scope of Work, attached hereto and incorporated herein by reference and additional funding is authorized as compensation for performance of the Additional Services in the not-to-exceed amount of Three Hundred One Thousand Two Hundred Fourteen Dollars (\$301,214.00).

2. Except as changed or modified herein, all provisions and conditions of the original Agreement shall remain in full force and effect.

IN WITNESS WHEREOF the parties herein have executed this First Amendment to the Agreement  
as of the day and year first written above.

PINELLAS COUNTY, FLORIDA by and  
through Its Board of County Commissioners

\_\_\_\_\_  
Chairman

JACOBS ENGINEERING GROUP, INC.

By: 

Print Name: Thomas J. Meinhardt

Title: Vice President Date: 2/1/16

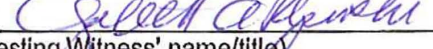
[Corporate Seal]

ATTEST:

Ken Burke, Clerk of the Circuit Court

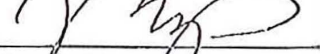
By: \_\_\_\_\_  
Deputy Clerk Date: \_\_\_\_\_

ATTEST:

By:   
(Attesting Witness' name/title)

ASS. Corp Sec.

APPROVED AS TO FORM

By:   
Office of the County Attorney

**TAXIWAY REHABILITATION – PHASE II**  
**ST. PETERSBURG-CLEARWATER INTERNATIONAL AIRPORT (PIE)-**  
**ADDITIONAL SERVICES**  
**Exhibit A - Scope of Work**

Jacobs and its subconsultants (Project Team) will provide Professional Services for the rehabilitation of Taxiway "T". The design will be incorporated into the Taxiway Rehabilitation-Phase II Bid Documents. The project will also include re-evaluating the previously submitted Phase II construction phasing and re-packaging it to include a Base Bid and two (2) Additive Bids. Based on conversations with Airport staff, the project will be divided into a Base Bid with two (2) Additive Bids. The project will generally be divided as follows:

**Base Bid:**

1. Rehabilitation of Taxiway "A", south of Runway 4-22
2. Realignment of Taxiways "M" and "F"
3. Demolition of Taxiway "F", west of Runway 18-36

**Additive Bid No. 1:**

1. Rehabilitation of Taxiway "T"
2. Realignment of Taxiway "B" and "C"

**Additive Bid No. 2:**

1. Rehabilitation of Taxiway "M", east of Taxiway F
2. Realignment of Taxiway "U"
3. Demolition of Taxiway "K"

Additive Bids that are not able to be awarded as part of the Phase II Construction Contract due to available funding will be repackaged as separate Bid Documents (Phase III).

**General Information**

As part of the FDOT's Pavement Management Program, the Airport conducted a Pavement Condition Index (PCI) Study in 2011 to determine the short-term and long-term pavement rehabilitation needs at PIE. This study is required per the FAA grant assurance to demonstrate the sponsor has a program for maintenance, repair, or reconstruction of existing airfield pavements. Based on this study and an independent report performed by Jacobs/AID, the Airport prepared a priority system for the rehabilitation or reconstruction of the existing taxiway and runway system. In addition to the above studies, the new FAA Advisory Circular (5300-13A) provides guidelines on

taxiway configurations including orientation, intersection angles, fillet and taper geometry. Based on the foregoing information, the following elements will be incorporated with Phase II of the Taxiway Rehabilitation as shown in **Exhibit C**:

1. Rehabilitate Taxiway "T" (90' X 1,700') – Reconstruction and/or milling and overlay. The repair approach may differ along the length of the taxiway depending on the field investigations and pavement condition.
2. Re-evaluate construction phasing for Phase II to incorporate the rehabilitation of Taxiway "T".

The scope of this work is to prepare construction documents for the above elements and to provide assistance during the bidding phase. Construction administration services are not included at this time. The Project Team will provide a Base Bid and up to two (2) Additive Bids.

The estimated construction costs are provided below:

- |                                  |             |
|----------------------------------|-------------|
| 1. Rehabilitation of Taxiway "T" | \$1,500,000 |
|----------------------------------|-------------|

## **Design Criteria/Design Assumptions**

This project will be designed according to the current edition of the following technical design criteria:

1. FAA Advisory Circular AC 150/5300-13A; Change 1, "Airport Design."
2. FAA Advisory Circular AC 150/5320-6E, "Airport Pavement Design and Evaluation."
3. FAA Advisory Circular AC 150/5340-1L, "Standards for Airport Markings."
4. FAA Advisory Circular AC150/5370-10G, "Standards for Specifying Construction of Airports."
5. The Aircraft Design Group (ADG) for the project shall be Group V.
6. The Taxiway Design Group (TDG) for Taxiway "T" will be Group V.

Construction drawings will be prepared in AutoCAD 2013 format

## **General Scope**

The Project Team will provide the following basic and special services for this project:

1. Management of the project from program verification to the award of the construction contract
2. Survey and Geotechnical services by specialized subconsultants on the Team
3. Modification of the existing Taxiway Rehabilitation Phase II SWFWMD permit.

4. Electrical improvements will not be included as part of the rehabilitation of Taxiway "T".
5. Preparation of meeting minutes.
6. Program verification and site investigation.
7. Updating the Construction Safety and Phasing Plan and 7460.
8. Updating construction documents and technical specifications.
9. Updating the Engineer's Report and construction cost estimate.
10. Bidding and award assistance.
11. FAA Grant application assistance.
12. The scope does not include construction phase services including resident project representative (RPR) services.

### **Specific Scope**

The Project Team will prepare construction documents for the re-packaging of the Phase II construction documents to include a Base Bid and two (2) Additive Bids. The scope will also include the rehabilitation of Taxiway "T", which will be included in the Phase II Bid Documents as part of Additive Bid No. 1.

Specific tasks (Basic and Special Services) related to the above items are identified in each phase of the project as described below.

### **Basic Services**

#### **Task 1 – Program Verification – Rehabilitation of Taxiway “T”.**

The Project Team will perform the following tasks under this phase:

1. Compile and review existing available information including as-built drawings, geotechnical reports, pavement evaluation reports, and fleet mix data.
2. Perform a detailed site inspection and evaluate the existing condition of the pavements. Each section of the pavement, as depicted in the Pavement Management Plan, will be inspected and repair recommendations will be verified and updated.
3. Conduct a site visit and determine locations for pavement cores.
4. Meet and coordinate with the survey and geotechnical Team Members.
5. Meet and coordinate with the Airport on project issues such as design alternatives, project phasing, construction staging, budget, and schedule. One meeting is anticipated.

#### **Task 2A – Contract Documents (60%) – Rehabilitation of Taxiway “T”.**

Following the receipt and review of topographic survey and geotechnical data, the Project Team will proceed with 60% level design and plans production for Taxiway “T” rehabilitation. Project Team members will visit the site to field verify the survey information and address any comments received during the Program Verification phase.

The 60% level documents for the rehabilitation of Taxiway “T” will include:

- Project Key Sheet (1 Sheet)
- General/Safety Notes Plan (1 Sheet)
- Project Survey Control Plans (3 Sheets)
- Geotechnical/Boring Location Plans (3 Sheets)
- Project Phasing and Safety Plan (2 Sheets)
- Existing Condition Plans (3 Sheets)
- Pavement Demolition Plans (3 Sheets)
- Typical Sections (1 Sheet)
- Pavement Geometry Plans (3 Sheets)
- Grading and Drainage Plans (3 Sheets)
- Drainage Details (1 Sheet)
- Sediment/Erosion Control Plans/Details (2 Sheets)
- Pavement Marking Plans (3 Sheets)
- Electrical Demolition Plans (2 Sheets)
- Electrical Plans/Details (2 Sheets)
- Pavement Design
- Updated summary of quantities and construction cost estimate for 60% design

Deliverables: The Project Team will submit three (3) copies each of the 60% drawings in size 11”X17” to the Airport for review. One (1) copy each of the updated cost estimate will also be submitted.

The Project Team will conduct one (1) meeting with the Airport to review the scope and schedule of the project and receive further input. Upon receipt of review comments from the Airport, the Project Team will proceed with the 90% level contract documents.

## **Task 2B – Contract Documents (90%) - Update Taxiway Rehabilitation Phase II Project**

The Project Team will proceed with 90% design for the rehabilitation of Taxiway “T” and incorporate these elements into the previously submitted Taxiway Rehabilitation Phase II Construction Documents. Based on conversations with Airport staff, the project will



be divided into a Base Bid with two (2) Additive Bids. The project will generally be divided as follows:

Base Bid:

1. Rehabilitation of Taxiway "A", south of Runway 4-22
2. Realignment of Taxiways "M" and "F"
3. Demolition of Taxiway "F", west of Runway 18-36

Additive Bid 1:

1. Rehabilitation of Taxiway "T"
2. Realignment of Taxiway "B" and "C"

Additive Bid 2:

1. Rehabilitation of Taxiway "M", east of Taxiway F
2. Realignment of Taxilane "U"
3. Demolition of Taxiway "K"

Construction documents will be prepared in this phase, including finalizing the construction phasing plan, which may include day-time and night-time construction activities. At this stage, the construction cost estimate and construction schedule will be updated. The Engineer's Report and Construction Safety and Phasing Plan (CSPP) previously provided will also be updated. The Project Manual, which will contain front-end documents provided by Pinellas County (Instructions to Bidders, Bid Forms, and Special Conditions) plus FAA General Provisions, Technical Specifications, and the geotechnical report, will also be updated. In addition, 90% construction drawings will be prepared including:

- 90% Taxiway "T" Rehabilitation Construction Drawings
  - a. Project Key Sheet
  - b. General/Safety Notes Plan
  - c. Project Survey Control Plans
  - d. Geotechnical/Boring Location Plans
  - e. Project Phasing and Safety Plan
  - f. Existing Condition Plans
  - g. Demolition Plans
  - h. Typical Sections
  - i. Pavement Geometry Plans
  - j. Grading and Drainage Plans
  - k. Drainage Details
  - l. Sediment/Erosion Control Plans/Details
  - m. Pavement Marking Plans

- n. Electrical Demolition Plans
- o. Electrical Plans and Details
- Update Taxiway Rehab Phase II Construction Drawings
  - a. Cover Sheet
  - b. Project Site/Layout Plan
  - c. Project Survey Control Plans
  - d. Geotechnical/Boring Location Plans
  - e. Project Safety Plan (including Staging and Access Plans)
  - f. Project Phasing/Construction Sequencing Plans
  - g. General/Safety Notes Plan
  - h. Project Key Sheet
  - i. Existing Conditions Plans
  - j. Pavement Demolition Plans
  - k. Typical Sections
  - l. Pavement Geometry Plans
  - m. Paving, Grading, and Drainage Plans
  - n. Sediment/Erosion Control Plans
  - o. Pavement Marking Plans
  - p. Cross Sections for new pavement only
  - q. Electrical Demolition Plans
  - r. Electrical Plans and Details
- Update summary of quantities and construction cost estimate for 90% design
- Update Technical Specifications
- Update Front End Documents
- Update Engineer's Report
- Update Construction Safety and Phasing Plan

Deliverables: The Project Team will submit three (3) copies of the 90% contract documents to the Airport, two (2) copies to the FAA, and one (1) copy to FDOT for their review.

The Project Team will attend one (1) meeting with the Airport and other stakeholders to review the project and address any final comments regarding the construction of this project including construction phasing.

### **Task 2C – Contract Documents (100%) - Taxiway Rehabilitation Phase II Project**

Upon receipt of final comments from the Airport, FAA, Operations, and ATCT, the Project Team will proceed with the preparation of the bidding documents. The Bid Documents will divide the project as outlined in Task 2B.

One (1) meeting is anticipated during this Phase. This effort includes incorporating comments by updating the construction drawings, project manual (FAA general provisions and technical specifications), CSPP, Engineer's Report, construction cost estimate, and construction schedule.

The Project Team will submit two (2) signed and sealed copies of the 100% contract documents to the Airport and provide the Airport with PDF copies of the contract documents to be used by Pinellas County Purchasing for advertising and distributing the bid package.

### **Task 3 – Taxiway Rehabilitation Phase II Bidding and Award Services**

Taxiway Rehabilitation Phase II Bidding and Award Services will be performed in accordance with the existing Taxiway Rehabilitation Phase II contract dated September 13, 2013.

Any additive bid(s) not awarded will be repackaged under a separate Phase III contract for the following year's grant cycle.

### **Task 4 – Contract Documents (100%) - Taxiway Rehabilitation Phase III Project**

Based on estimated construction costs and projected grant funding levels it is anticipated that the Airport may not be able to award both the Base Bid and both Additive Bids as part of the Phase II project. The Airport has requested that the Project Team re-package the remaining elements of the project and to advertise the project as the Taxiway Rehabilitation Phase III. This effort includes repackaging the remaining Additive Bid(s) into a separate contract by updating the construction drawings, project manual (FAA general provisions and technical specifications), Engineer's Report, construction cost estimate, and construction schedule. This task does not include the re-design of Phase II. The Project Team will conduct one (1) meeting with the Airport to discuss how to re-package the remaining additive bids. After updating the Phase III Contract Documents, the Project Team will attend a second meeting with the Airport to review the project and incorporate any final comments to the Contract Documents.

The Project Team will submit two (2) signed and sealed copies of the 100% contract documents to the Airport and provide the Airport with PDF copies of the contract documents to be used by Pinellas County Purchasing for advertising and distributing the bid package.

### **Task 5 – Taxiway Rehabilitation Phase III Bidding and Award Services**

Jacobs will perform bidding support services for the Taxiway Rehabilitation Phase III project, the following terms will apply:

1. The County appoints Jacobs as its Agent, and Jacobs accepts such appointment to perform bid/procurement services on the County's behalf in connection with the project.
2. Such services shall be performed under the County's direction and in accordance to such forms, terms and conditions, or modifications or revisions to same as the County may in its sole discretion at any time instruct Jacobs to use. All services shall be carried out in accordance with the procedures mutually agreed upon by the County and Jacobs.
3. Jacobs shall not have authority to accept or bind the County in any way to changes, modifications, revisions, alterations, amendments, or supplemental, additional, or different terms and conditions (hereinafter referred to as "deviations") which may be submitted or requested by a vendor or contractor. Jacobs shall immediately submit any deviations from the County's standard terms and conditions to the County for review by the County's Purchasing Manager or his representative and such deviations shall not be accepted by Jacobs unless Jacobs receives express written approval thereof from the County's Project and/or Purchasing Manager or his representative.
4. All documents issued by Jacobs hereunder shall be signed by Jacobs for the County if so directed. The ownership and title of all items purchased hereunder shall pass directly from the selling party to the County, and Jacobs shall at no time be a party to such transaction other than as agent of the County. The County shall have the unilateral right to have the commitment authority of Jacobs, its employee or this limited agency authorization in its entirety revoked and cancelled at any time, with or without cause. The County shall be obligated directly to the selling party for all payments for materials, equipment, supplies and services procured hereunder.
5. The County shall hold Jacobs and its employees harmless from any claims, suits or liabilities arising out of any breach or other failure of performance by any contractor, vendor or supplier under any contract or purchase order issued by Jacobs hereunder.

In addition, this phase will include the effort necessary to receive bids from contractors and to review the bids and make a recommendation of award to the Airport and the FAA. Specifically, the following tasks will be performed by the Project Team during this phase:

1. Prepare for and attend the Pre-Bid Conference by providing agenda items and making a presentation on the project scope, phasing, and schedule.
2. Address questions from bidders
3. Make revisions to contract documents and assist the County Purchasing Department with preparing Addenda

4. Attend the Bid opening
5. Review all bids for responsiveness and accuracy
6. Assist the County Purchasing Department with preparation of the Bid Tabulation Sheet(s)
7. Provide engineer's certified recommendation for the award of the contract
8. Prepare conformed construction plans and technical specifications incorporating all addenda and clarifications for delivery to County.

Bids will be awarded based on the available funds procured by the Airport.

### **Special Services**

In addition to the Basic Services described above, the Project Team will provide the following special services required under this contract (anticipated to be performed during the Program Verification Phase).

1. **Topographic Field Survey** – URS Corporation. (URS) will provide field topographic survey on this project. All survey work will be performed during the daytime on a pull-back basis in order to minimize the impact of the work to the airport traffic. Data will be submitted in accordance with FAA AGIS requirements as specified in FAA Advisory Circular 150/5300-18B, "General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards".
  - a. **Intent** - It is the intent of this contract to acquire a complete and accurate topographic survey in both hard-copy and electronic format.
  - b. **Responsibility.** A Professional Surveyor and Mapper (PSM) shall be directly responsible for the proper execution of the surveying work to be performed. All work will be in accordance with the Minimum Technical Standards as set forth by the Florida Board of Professional Surveyors and Mappers in Chapter 5J-17, Florida Administrative Code.
  - c. **Governing Specifications:** Refer to FAA AC 150/5300-16A and FAA AC 150/5300-18B.
  - d. **Survey Limits:** The survey limits are shown on attached proposed site plan and Exhibit C.
  - e. **Units:** The survey shall be US Survey Foot.
  - f. **Coordinate System:** Horizontal coordinates shall use the current State Plane Coordinate System - NSRS NAD83 (2011 Adjustment) and shall be

derived from airport PACS and SACS control points. Vertical coordinates shall be based on the North American Vertical Datum of 1988 (NAVD 88). The reference datums and coordinate systems used shall be clearly identified.

- g. **Horizontal Control:** Supplemental horizontal controls shall have Third Order, Class II accuracy.
- h. **Vertical Control:** A minimum of two temporary benchmarks (e.g. PK Nail in pavement) shall be established for each project. Additional benchmarks shall be established at sufficient locations to ensure that all locations within the survey limits are within a horizontal distance not to exceed 1,000 feet from an established benchmark. Level runs for the determination of benchmark elevations shall have Third Order vertical control accuracy. Temporary benchmark elevations will be tied to a minimum of one benchmark in the National Geodetic Control Network that is classified for a third order or better vertical accuracy. The maximum allowable error of closure for English unit surveys is 0.05 feet multiplied by the square root of the length of the level run in miles. Locations for control points will be selected that are favorable to their future preservation by selecting clearly defined, stable locations outside of the anticipated construction limits for the project. Mapping of the control points will be supplied to the Airport Engineer in the appropriate format.
- i. **Survey Baseline:** Establish a survey baseline along the alignment of Taxiway "T". The approximate length of said baseline is 1,700 LF. Baseline points will be established at even stations (100 foot intervals). Six pairs of references will be set at 1000 foot intervals outside the limits of construction.
- j. **Horizontal Feature Location Accuracy:** The horizontal tolerance for feature location shall be in accordance with standard practice.
- k. **Vertical Feature Location Accuracy:** The vertical tolerance for feature location shall be 0.05 feet for pavements, structures, pipe inverts, and other man made features and 0.10 feet for ground shots.
- l. **Contour Interval:** The contour interval shall be 1.0 foot. Contours shall be shown as light dashed lines for minor/intermediate contours and bold dashed lines for the primary contour.
- m. **Spot Elevations:** Spot elevations shall be provided at all break lines in pavement and ground such as edge of pavement, top and bottom of bank, etc. and at other locations as required to accurately depict the site topography.

- n. **Survey Grid:** Elevations shall be taken on a grid no larger than 25 feet by 25 feet for paved and/or built up areas with a minimum of 5 shots per cross-section. Cross-sections shall be taken to 50 feet beyond the edge of existing pavement. Cross-sections shall extend to the centerline of connecting runways, taxiways and taxi lanes. In areas that pavement is to be removed, cross-sections can be collected at 50 foot intervals. Intermediate elevations shall be taken as necessary to define all breaks in grade and clearly indicate all existing site conditions.
- o. **Utilities:** All visible aboveground utility components shall be surveyed. All lighting, junction boxes signage etc. shall be located. The location of underground utilities will be identified by under the project scope by the SUE subconsultant.
- p. **Topographic Details:**
  - 1. **Pavement.** Identify and locate all pavement types including pavement markings.
  - 2. **Ditches.** Identify and locate all ditches and other storm water channels and drainage structures. Provide the water elevation in the ditch at the time of the survey, if applicable.
- q. **Field Notes:** Level work and other field notes and sketches not captured by an electronic data recorder are to be recorded in a standard Engineering Field Book and in a manner conforming to good surveying practice. A copy of the field notes shall be included with the final submittal.

## **Submittals**

### **a. Electronic Topographic Survey File(s)**

- 1. **Format.** The topographic survey shall be submitted in a single AutoCAD 2012 Drawing File (.DWG file) with the entire survey drawn in model space with 1 drawing unit = 1 foot for English unit surveys.
- 2. **Layers.** All information in the AutoCAD drawings shall be appropriately segregated into layers separated by feature type.
- 3. **Contours.** Each contour shall be a single polyline and shall not be composed of multiple individual line segments.
- 4. **CDs.** The Contractor shall provide 2 identical Compact Disks (CDs), each containing copies of the electronic topographic survey file, as well as named plot style table files (STB files), color-dependent plot style table files (CTB files), plotter pen assignment tables, symbols, blocks, fonts, and shape definitions used or referenced by the drawing. The CD shall also



include the table providing the names and descriptions for the layers used in the drawing file.

**b. Printed Existing Site Plans**

1. **Format.** Two hard-copy sets of the Topographic Survey shall be submitted. Drawings shall be D-Size sheets and shall use the current title block. Drawings shall be prepared with true north pointing to either the top or the left side of the sheets. The Contractor shall provide true north arrows, graphic scales, abbreviations, and legends clearly defining all symbols used. Lettering shall be all capitals and shall have a text height of not less than 0.1 inches.

2. **Certification.** The drawings shall be certified correct and sealed by the Professional Surveyor and Mapper (PSM) who was directly responsible for the proper execution of the surveying work.

3. **Scale:** Drawings shall be prepared at an appropriate standard engineering scale. The selected scale shall be appropriate to clearly identify site features for the entire survey and provide a good presentation of the survey at the prescribed drawing size.

**c. Electronic Survey Point File**

1. The Contractor shall provide an electronic ASCII text file containing all of the surveyed points in a space-delimited PNEZD (Point number, Northing, Easting, Elevation and Description) format with each surveyed point on its own row.

2. **Geotechnical Services** – Tierra, Inc. (Tierra) will provide geotechnical engineering services for this project. All work will be performed at night to minimize the impact of the work to the airport traffic.

Scope of Services

The objective of the study will be to obtain information concerning pavement and subsurface conditions at the site on which to base engineering estimates and recommendations in each of the following areas:

- a. Pavement section identification and exploration of subgrade conditions
- b. General location and description of potentially deleterious materials discovered in the borings including existing fills or surficial organics
- c. Identification of groundwater levels.



In order to meet the preceding objectives, the following services would be completed as part of Taxiway T:

- a. Review available published soils and topographic information. This published information will be obtained from the appropriate Florida Quadrangle Map published by the United States Geological Survey (USGS), as well as the Soil Survey of Pinellas County, Florida, published by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). Additional information from existing as-built plans can be reviewed if provided to Tierra.
  - b. Execute a program of subsurface exploration consisting of asphalt pavement cores, borings and subsurface sampling. Based on the information provided, Tierra will perform on the order of seven (7) asphalt pavement cores (5 cores for Taxiway "T" and 2 cores for Taxiway "D"). At each of the core locations hand auger borings will be performed to an approximate depth of 5 feet below the pavement surface.
  - c. Perform two (2) California Bearing Ratio (CBR) tests on selected samples collected within the project area. One test will be performed on Taxiway "T" and the other will be performed on Taxiway "D".
  - d. Visually classify the soil samples in the laboratory using the Unified Soil Classification System (USCS). Identify soil conditions at each boring location and perform laboratory testing. The pavement cores will be visually classified and saved for review by the design team.
  - e. Collect groundwater level measurements and estimate the SHGWT.
  - f. Prepare a formal engineering report in accordance with the scope of services herein that summarizes the course of study pursued, the field data generated, subsurface conditions encountered and engineering recommendations in each of the pertinent topic areas.
3. **OE/AAA Submittal** – An Airspace Checklist will be prepared and submitted to the FAA via OE/AAA. This will include the submittal of the CSPP.
  4. **SWFWMD Permitting** – A modification of the existing Taxiway Rehabilitation Phase II Environmental Resource Permit (ERP) will be required to incorporate the rehabilitation of Taxiway "T". The permit modification will include the preparation of an exhibit depicting the limits of the work, meeting with SWFWMD to review the exhibit, and submitting a letter modification.

## Project Schedule

The following is a tentative schedule for this work. It is assumed that the Project Team will continue with the design while the Airport is performing its review of each submittal to expedite the design process.

<b>Task</b>	<b>Date</b>
Board of County Commissioners Approval	November 24, 2015
Notice to Proceed-Design	December 8, 2015
Contract Documents (60%)	February19, 2016
Contract Documents (90%)	March 18, 2016
Contract Documents (100%)	April 1, 2016
Advertise for Bids	May 6 2016
Bid Opening	June 7, 2016
BCC Approval of Construction Contract	June 21, 2016
Submit FAA Grant	July 1, 2016

**FEE SUMMARY**

TASK	Totals
<b><u>Basic Services (Lump Sum) - Taxiway T Rehabilitation and Taxiway Rehabilitation Phase II Re-Package</u></b>	
Task 1 - Program Verification - Rehabilitation of Taxiway "T"	\$11,844.00
Task 2A - Contract Documents (60%) - Rehabilitation of Taxiway "T"	\$51,124.00
Task 2B - Contract Documents (90%) - Update Taxiway Rehabilitation Phase II Project	\$71,402.00
Task 2B.1 - Rehabilitation of Taxiway "T" (90% Design)	\$27,800.00
Task 2B.2 - Update TW Rehab Phase II (90% Design)	\$43,602.00
Task 2C - Contract Documents (100%) - Taxiway Rehabilitation Phase II Project	\$24,396.00
Task 3 - Taxiway Rehabilitation Phase II Bidding and Award Services (Included in separate contract)	N/A
<b>Jacobs Basic Services:</b>	<b>\$158,766.00</b>
URS - Electrical Engineering Re-Packaging Taxiway Rehabilitation Phase II	<b>\$10,060.00</b>
AID -Re-Packaging Taxiway Rehabilitation Phase II	<b>\$7,539.00</b>
<b><u>Subtotal Basic Services</u></b>	<b>\$176,365.00</b>
<b><u>Special Services (Lump Sum)</u></b>	
1 Topographic Surveys (URS)	\$13,072.00
2 Geotechnical Investigations (Tierra)	\$5,511.00
3 OE/AAA Airspace Checklist Submittal	\$996.00
4 Stormwater Modeling and SWFWMD Permitting	\$794.00
<b>Total Special Services:</b>	<b>\$20,373.00</b>
<b><u>Expenses (Lump Sum)</u></b>	
Travel (for Meetings)	\$750.00
Reproduction	\$750.00
<b>Total Expenses:</b>	<b>\$1,500.00</b>
<b><u>Subtotal - Taxiway T Rehabilitation and Taxiway Rehabilitation Phase II Re-Packaging</u></b>	<b>\$198,238.00</b>
<b><u>Basic Services (Lump Sum) - Taxiway Rehabilitation Phase III</u></b>	
Task 4 - Contract Documents (100%) - Taxiway Rehabilitation Phase III Project	\$41,756.00
Task 5 - Taxiway Rehabilitation Phase III Bidding and Award Services	\$18,534.00
<b>Jacobs Basic Services:</b>	<b>\$60,290.00</b>
URS - Taxiway Rehabilitation Phase III Re-Packaging & Bidding	<b>\$10,060.00</b>
AID - Taxiway Rehabilitation Phase III Re-Packaging & Bidding	<b>\$5,364.00</b>
<b><u>Subtotal Basic Services</u></b>	<b>\$75,714.00</b>
<b><u>Expenses (Lump Sum)</u></b>	
Travel (for Meetings)	\$750.00
Reproduction	\$750.00
<b>Total Expenses:</b>	<b>\$1,500.00</b>
<b><u>Subtotal - Taxiway Rehabilitation Phase III Re-Packaging &amp; Bidding</u></b>	<b>\$77,214.00</b>
<b><u>Grand Total Fees (Lump Sum):</u></b>	<b>\$275,452.00</b>

TASK	Project Principal	Senior Project Manager	Senior Engineer	Engineer	Senior Designer	Designer	Technician	Clerical	Totals
	\$228.00	\$210.00	\$135.00	\$116.00	\$112.00	\$63.00	\$79.00	\$69.00	

**Task 1 - Program Verification - Rehabilitation of Taxiway "T"**

1	Compile and review existing information	2	4	8					14
2	Pavement Site Inspection and Evaluation	8	8						16
3	Determine Locations for pavement cores/site visit		8	8					
4	General Coordination with Survey/Geotech		2	4					
5	General Coordination with the Airport	4	4						
6	General Coordination with URS/AID		4	4				8	16
7	Meeting with Airport (1 Mtg)	4	4					2	10
Total Labor Hours:		18	34	24				10	86
Total Labor Costs:		\$3,780.00	\$4,590.00	\$2,784.00				\$690.00	\$11,844.00

**Task 2A - Contract Documents (60%) - Rehabilitation of Taxiway "T"**

1	Prepare 60% Drawings (Approx. 32 Sheets)								
a	Project Key Sheet (1 Sheet)				4				
b	General/Safety Notes Plan (1 Sheet)			2	2				
c	Project Survey Control Plans (3 Sheets)			4	4				8
d	Geotechnical/Boring Location Plans (3 Sheets)				8				8
e	Project Phasing & Safety Plan (2 Sheets)		4	8	24				36
f	Existing Condition Plans (3 Sheets)		2	8	16				26
g	Pavement Demolition Plans (TW T) (3 Sheets)		2	4	8				14
h	Typical Sections (1 Sheet)		2	8	16				26
i	Pavement Geometry Plans (3 Sheets)		4	8	16				28
j	Grading and Drainage Plans (TW T) (3 Sheets)		4	40	50				94
k	Drainage Details (1 Sheet)		2	4	4				
l	Review Sediment/Erosion Control Plans/Details (2 Sheet)		2	4	4				10
m	Pavement Marking Plans (3 Sheets)		2	8	16				26
n	Review Electrical Demolition Plans (2 Sheets)			2	4				6
o	Electrical Plans/Details (2 Sheets)			2	4				6
2	Pavement Design			8	8				16
3	Update Construction Schedule and Cost Estimates		4	8	16				28
4	Submit 60% Documents		4	8	16			4	32
5	Quality Review	8							8
6	General Coordination with URS/AID		4	4	4				12
7	General Coordination with the Airport	8	8						16
8	Attend Review Meeting	4	4						8
Total Labor Hours:		20	48	130	224			4	426
Total Labor Costs:		\$4,200.00	\$6,480.00	\$15,080.00	\$25,088.00			\$276.00	\$51,124.00

**Task 2B - Contract Documents (90%) - Update Taxiway Rehabilitation Phase II Project**

1	Update TW T (Approx. 30 Sheets)								
a	Project Key Sheet (1 Sheet)				4				4
b	General/Safety Notes Plan (1 Sheet)			2	2				4
c	Project Survey Control Plans (3 Sheets)			4	8				12
d	Geotechnical/Boring Location Plans (3 Sheets)			4	8				12
e	Project Phasing & Safety Plan (inc. Staging & Access) (2 Sheets)		2	8	14				24
f	Existing Condition Plans (3 Sheets)			4	8				12

TASK		Project Principal	Senior Project Manager	Senior Engineer	Engineer	Senior Designer	Designer	Technician	Clerical	Totals
		\$228.00	\$210.00	\$135.00	\$116.00	\$112.00	\$63.00	\$79.00	\$69.00	
	g Pavement Demolition Plans (3 Sheets)			2	8	12				22
	h Typical Sections (1 Sheet)			2	4	12				18
	i Pavement Geometry Plans (3 Sheets)			2	8	12				22
	j Grading and Drainage Plans (3 Sheets)			2	24	44				70
	k Drainage Details (1 Sheet)			2	4	4				10
	l Sediment/Erosion Control Plans/Details (2 Sheets)			2	4	4				10
	m Pavement Marking Plans (3 Sheets)			2	8	12				22
2	Update TW Rehab Phase II Drawings (Approx. 140 Sheets)									
	a General Sheet Updates			40	80	80				200
	b Project Safety Plan (including Staging and Access Plans)			2	8	16				26
	c Project Phasing/Construction Sequencing Plans			2	8	16				26
3	Update Construction Cost Estimate and Schedule			2	4	4				10
4	Update Engineer's Report			2	6	8			2	18
5	Update Technical Specifications			2	4				2	8
6	Update Front-End Documents (FAA Provisions)			2	8					10
7	Update Construction Safety and Phasing Plan			2	6					8
8	Quality Review		8							8
9	Submit 90% Documents			2	4	4			2	12
10	General Coordination with URS/AID			4	4	4				12
11	General Coordination with Airport		4	4					4	12
12	Attend Review Meeting with Airport		4	4					4	12
Total Labor Hours:			16	84	214	276			14	604
Total Labor Costs:			\$3,360.00	\$11,340.00	\$24,824.00	\$30,912.00			\$966.00	\$71,402.00
<b>Task 2C - Contract Documents (100%) - Taxiway Rehabilitation Phase II Project</b>										
1	Incorporate Final Review Comments (Approx. 170 Sheets)		8	24	60	80				172
2	Prepare and Submit Final Bid Documents			4	4	8			4	20
7	Attend Review Meeting		4	4						8
Total Labor Hours:			12	32	64	88			4	200
Total Labor Costs:			\$2,520.00	\$4,320.00	\$7,424.00	\$9,856.00			\$276.00	\$24,396.00
<b>Task 3 - Taxiway Rehabilitation Phase II Bidding and Award Services (Included in separate contract)</b>										
<b>Task 4 - Contract Documents (100%) - Taxiway Rehabilitation Phase III Project</b>										
1	Prepare Contract Drawings (Approx. 60 Sheets)									
	a Cover Sheet					2				2
	b Project Site/Layout Plan				2	4				6
	c Project Survey Control Plan				2	2				4
	d Geotechnical/Boring Location Plan				2	2				4
	e Project Safety Plan (including Staging and Access Plans)			4	8	16				28
	f Project Phasing/Construction Sequencing Plans			4	8	16				28
	g General/Safety Notes Plan				2	2				4
	h Project Key Sheet					8				8
	i Typical Sections				4	4				8
	j Existing Condition Plans				2	2				4
	k Demolition Plans				2	2				4
	l Pavement Geometry Plans				2	2				4
	m Grading Plans and Profiles Plans				8	8				16

Taxiway Rehabilitation Phase II  
St. Petersburg-Clearwater International Airport  
Exhibit B - Fee Breakdown

TASK	Project Principal	Senior Project Manager	Senior Engineer	Engineer	Senior Designer	Designer	Technician	Clerical	Totals
	\$228.00	\$210.00	\$135.00	\$116.00	\$112.00	\$63.00	\$79.00	\$69.00	
n Drainage Plans/Details					2				2
o Erosion Control Plans/Details				2	2				4
p Cross Sections				8	8				16
q Pavement Marking Plans				2	2				4
2 Update Construction Cost Estimate and Schedule			2	8	4				14
3 Update Engineer's Report			2	6	8			2	18
4 Update Technical Specifications			2	8				2	12
5 Update Front-End Documents (FAA Provisions)			2	4					6
6 Quality Review		4							4
7 Submit Contract Documents			2	4	4			2	12
8 General Coordination with URS/AID			8	4	4				16
9 General Coordination with Airport		4	4					4	12
10 Review Meetings with Airport (2 Meetings)		8	8					4	20
11 Incorporate Final Review Comments (Approx. 60 Sheets)			8	32	48			4	92
Total Labor Hours:		16	46	120	152			18	352
Total Labor Costs:		\$3,360.00	\$6,210.00	\$13,920.00	\$17,024.00			\$1,242.00	\$41,756.00
<b>Task 5 - Taxiway Rehabilitation Phase III Bidding and Award Services</b>									
1 Coordinate with the Airport		4	8						12
2 Coordinate with URS/AID		4	4	4					12
3 Prepare for and Attend Pre-Bid Conference		8	8						16
4 Responses to RFI's/Issue Addenda		2	10	12	12				36
5 Revisions to Contract Documents		2	4	8	12			2	28
6 Attend Bid Opening		4	4						8
7 Review Bids for Responsiveness		2	4					2	8
8 Prepare/Review Bid Tabulation Sheet(s)		2	4					2	8
9 Make Recommendation for Award of Contract		2						2	4
10 Prepare Conformed Contract									
Total Labor Hours:		30	46	24	24			8	132
Total Labor Costs:		\$6,300.00	\$6,210.00	\$2,784.00	\$2,688.00			\$552.00	\$18,534.00
<b>Total Fees - Basic Services (Lump Sum):</b>									<b>\$219,056.00</b>

Taxiway Rehabilitation - Phase II  
St. Petersburg-Clearwater International Airport  
Exhibit B - Fee Breakdown

TASK	Project Principal	Project Manager	Senior Engineer	Engineer	Senior Designer	Designer	Technician	Clerical	Total Hours	Total Dollars
	\$228.00	\$210.00	\$135.00	\$114.00	\$112.00	\$63.00	\$67.00	\$69.00		

**Special Services**

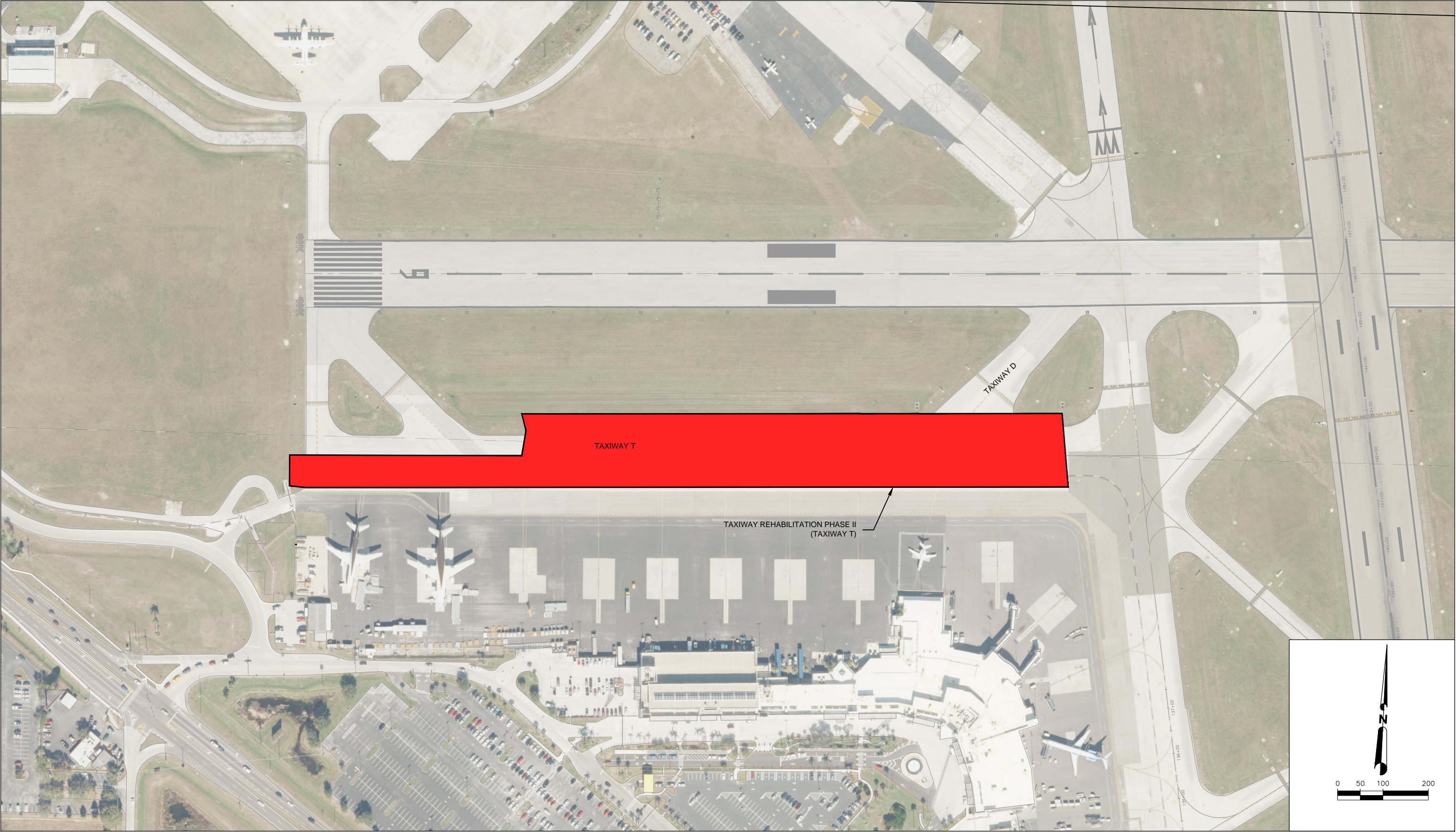
1	Topographic Surveys (URS)									\$13,072.00
2	Geotechnical Investigations (Tierra)									\$5,511.00
3	OE/AAA Airspace Checklist Submittal			4	4				8	\$996.00
4	Stormwater Modeling and SWFWMD Permitting									\$794.00

**Total Fees - Special Services (Lump Sum):**

**\$20,373.00**



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REVISIONS:			
REV. NO	DATE	DESCRIPTION:	EOR



TAXIWAY REHABILITATION PHASE 2  
AT  
ST. PETE-CLEARWATER  
INTERNATIONAL AIRPORT  
CLEARWATER, FL



ONE TAMPA CITY CENTER  
201 NORTH FRANKLIN ST. SUITE 1400  
TAMPA, FLORIDA 33602  
OFFICE: 813-676-2300  
FAX: 813-676-2301  
CERTIFICATE OF AUTHORIZATION NUMBER 2822

JOB NO:	E9Y25300
DRAWN:	LFE
DESIGN:	THS
CHECKED:	CWB
DATE:	07 AUG 15

SCOPE  
EXHIBIT

EX C



## EXHIBIT A SCOPE OF SERVICES

### ST. PETE-CLEARWATER INTERNATIONAL AIRPORT

#### TAXIWAY REHABILITATION – PHASE 2 RE-PACKAGE FOR BID

##### SCOPE OF WORK

AID will provide coordination services, design, and permitting services to Jacobs Engineering Group (Jacobs) for the re-packaging of Taxiway Rehabilitation Phase 2 at the St. Pete-Clearwater International Airport (PIE) to include previously designed, as well as new areas of work.

##### DESCRIPTION OF WORK

###### Task 1 – ERP Permit Modification for Additional Areas of Work.

A modification to the existing Environmental Resource Permit will be necessary to include the re-surfacing of Taxiway T. Tasks for this modification include:

- Create exhibit for additional milling area of Taxiway T.
- Attend a meeting with the SWFWMD to discuss the project scope and permit Modification requirements.
- Prepare and submit the SWFWMD ERP Modification Letter.

We believe this to qualify as a minor permit modification which carries no fee from SWFWMD, as such, there has been no reimbursable amount included in this task for permitting fees.

###### Task 2 – Re-Package Phase 2 Elements

The COUNTY intends to re-package the bidding documents that were prepared for the Taxiway Rehabilitation Phase 2 project to include additional areas of work that include the Reconstruction of Taxiway T as a bid alternate to the base bid documents. AID will assist Jacobs in completing this task as follows:

- Update Taxiway B and C drawings to reflect that they are a part of "Additive Bid 1" instead of part of the base bid package.
- Create a new bid schedule to separate the Taxiway B and C elements as an Additive Bid.
- Revise Drawings to add an interface with Taxiway T (at the intersection of TW B and C).
- Assist Jacobs in updating the Phasing Plan in order to facilitate the additional areas of work.
- Perform a Quality Control review of plans and specifications for Taxiway T, which is being designed by Jacobs.

Bidding services for Taxiway Rehabilitation Phase 2 have already been included under the original contract. Additional Bidding and Award services included here are to account for the increased scope of the project.

###### Task 3 – Re-Package plans for Phase 3

Depending on the funding available, current elements in the Taxiway Rehabilitation – Phase 2 drawings may need to be broken out into a separate project and re-packaged as Phase 3 if Bid Additive 1 is not

**Task 3.1 – Design**

- Revise Drawings, re-number and re-package drawing elements.
- Revise Quantities and provide to Jacobs for bidding purposes.

**Task 3.2 – Bid and Award**

- Respond to Bidders Questions related to AID's scope of work.
- Assist Jacobs in issuing Addenda.

**PROJECT SCHEDULE:**

The tentative project schedule from the Notice to Proceed date will be as follows:

Task 1 – ERP Permit Mod	15 days from NTP
Task 2 – Re-Package Phase 2 Elements	15 days from NTP
Task 3 – Re-package Phase 3 Elements	15 days (under separate NTP)

TASK		Project Manager	Senior Engineer	Engineer	Senior Designer	Designer	Technician	Clerical	Totals
		\$174.00	\$154.00	\$121.00	\$93.00	\$77.00	\$67.00	\$59.00	
<b>Task 1 ERP Minor Permit Modification</b>									
1	Exhibit TW T			1		1			2
2	Meeting with SWFWMD			1					1
2	Permit Modification Letter	1		2				1	4
Total Labor Hours:		1		4		1		1	7
Total Labor Costs:		\$174.00		\$484.00		\$77.00		\$59.00	\$794.00
<b>Task 2 Re-Package Phase 2</b>									
1	Update Drawings to reflect Bid Add 1			1		2	4		7
2	New Bid Schedule for Bid Add 1			4		8			12
2	Incorporate TW T			4		8			12
2	Update Phasing			4		8			12
3	Quality Control for TW T	4	2	8	16			4	34
Total Labor Hours:		4	2	21	16	26	4	4	77
Total Labor Costs:		\$696.00	\$308.00	\$2,541.00	\$1,488.00	\$2,002.00	\$268.00	\$236.00	\$7,539.00
<b>Task 3.1 Re-Package for Phase 3 - Design</b>									
1	Revise Drawings	1	2	2	4		32		41
2	Revise Quantities			2			4		6
Total Design Labor Hours		1	2	4	4		36		
Total Design Labor Cost		\$174.00	\$308.00	\$484.00	\$372.00		\$2,412.00		\$3,750.00
<b>Task 3.2 Re-Package for Phase 3 - Bid and Award</b>									
3	Respond to Bidders Questions			4				4	8
4	Issue Addendums	1		4				4	9
Total Bid Labor Hours:		1		8				8	17
Total Bid Labor Costs:		\$174.00		\$968.00				\$472.00	\$1,614.00
<b>Total Fees (Lump Sum):</b>									<b>\$13,697.00</b>



EE SUMMARY - ADDITIONAL SERVICES TW "T" & Multiple Bid Packages

TASK	Totals
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**Additional Services**

<i>Task 1</i> Additional Survey for Taxiway T (details attached)	\$13,071.76
<i>Task 2</i> Repackage Plans for Base Bid and 2 alternates	\$10,060.00
Repackage plans for previously unfunded projects (assume both	
<i>Task 3</i> alternates)	\$10,060.00

**Total Additional Services: \$33,191.76**

<b><i>Total Fees:</i></b>	<b>\$33,191.76</b>
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TASK	Project Principal	Project Manager	Electrical Engineer	Senior Designer	Junior Engineer	Clerical	Totals
	\$225.00	\$165.00	\$140.00	\$130.00	\$90.00	\$60.00	

**Task 1 Additional Survey for Taxiway T (details attached)**

1	See attached detailed breakout							0
Total Labor Hours:		0	0	0	0	0	0	0
Total Labor Costs:								\$13,071.76

**Task 2 Repackage Plans for Base Bid and 2 alternates**

1	Revise Plan sheets showing breakouts		4		16			20
2	Quantity Takeoff and cost estimates		4	4	16	8		32
3	Meetings and coordination		16					
4	Quality Review		4					4
Total Labor Hours:		0	28	4	32	8	0	72
Total Labor Costs:		\$0.00	\$4,620.00	\$560.00	\$4,160.00	\$720.00	\$0.00	\$10,060.00

**Task 3 Repackage plans for previously unfunded projects (assume both alternates)**

1	Revise Plan sheets showing breakouts		4		16			20
2	Quantity Takeoff and cost estimates		4	4	16	8		32
3	Meetings and coordination		16					16
4	Quality Review		4					4
Total Labor Hours:		0	28	4	32	8	0	72
Total Labor Costs:		\$0.00	\$4,620.00	\$560.00	\$4,160.00	\$720.00	\$0.00	\$10,060.00

**Total Fees (Lump Sum):**

**\$33,191.76**

## SURVEY ESTIMATION CHART

Consultant: <u>URS Corporation</u>	Authorization: _____
FIN. NO. _____	F.A.PROJ. #: _____
Contract No.: _____	
Name of Job: <u>St Pete/Clearwater Airport</u>	Project Manager: <u>Dennis Combs</u>
From: <u>Taxiway T</u>	To: _____
County(ies): <u>Pinellas</u>	Project Length: <u>160' X 1700'</u>
Estimator's Name: <u>Gary W Lutes, PSM</u>	Date: <u>July 24, 2015</u>

SURVEY FUNCTIONS	CREW DAYS 3 Man		COMMENTS
Horizontal Control		0.5	Recover/reestablish horizontal control
Alignment		1.0	Establish 1700 feet of baseline
Bench Levels		0.5	Recover/reestablish vertical control
Reference Points			N/A
Section Line Ties			N/A
Property Ties			N/A
Side Street Surveys			N/A
2d Topography			N/A
3D Topo/DTM and cross sections		4 days	Topographic survey of 500' X 70' area and 1200' X 160' area. Intermediate elevations shall be taken as necessary to define all breaks in grade and clearly indicate all existing site conditions. All planimetric features will be collected. Shots will be gathered at 25' intervals in paved areas and 50' intervals on dirt. Possible delays due to aircraft.
Bridge Locations			N/A
Underground Utilities			N/A
Drainage Surveys			N/A
Stake Out for Borings			N/A
Water Retention Area			N/A
Supplemental Surveys			N/A
Jurisdictional Line Surveys			N/A
Travel time			N/A
WORK ZONE SAFETY			N/A
<b>TOTAL</b>		6 days	

Survey Hours 8 x \$156.24 3 Person Hourly Crew Rate = \$1,249.92 Day Rate

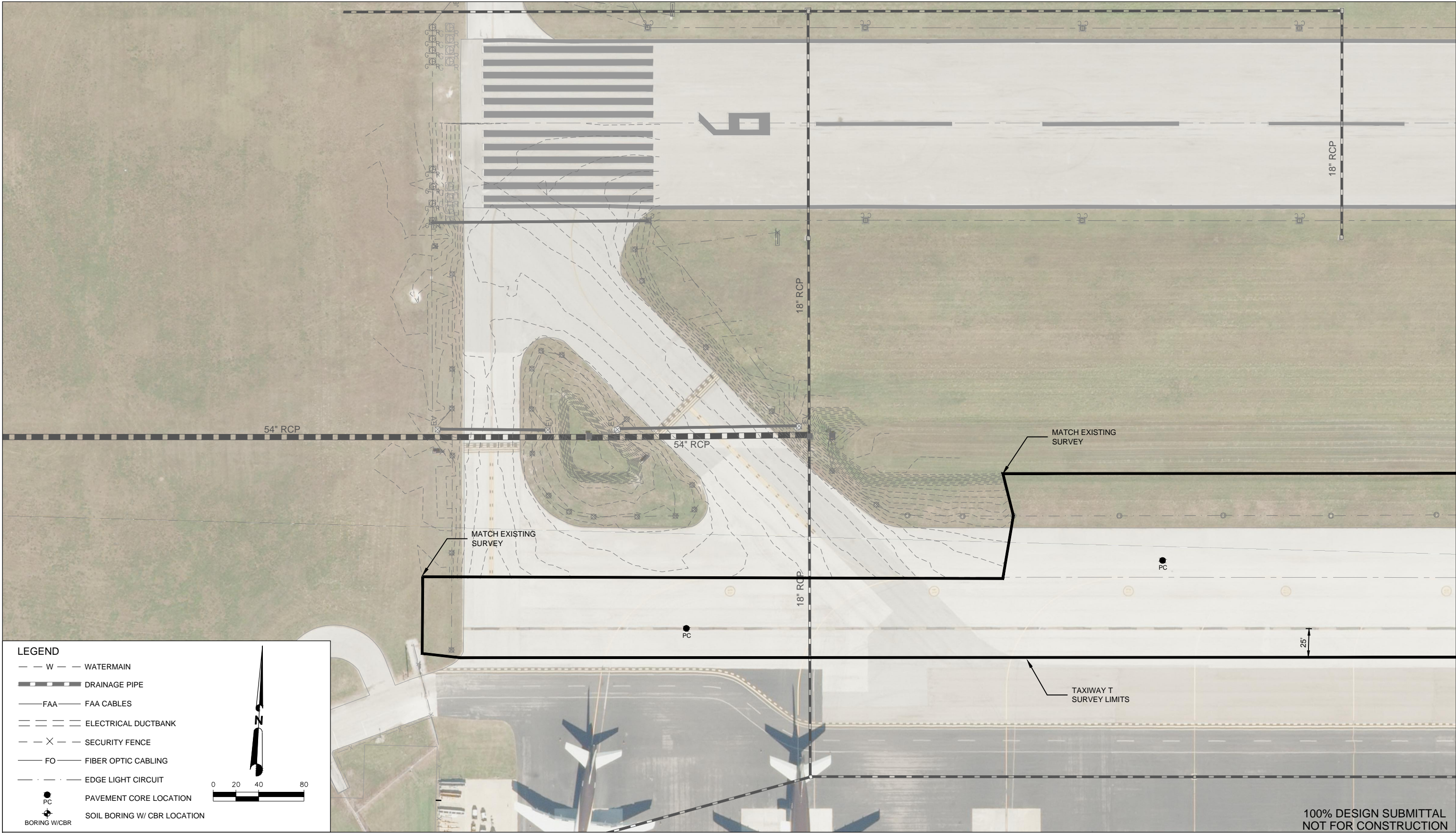
3 MAN SURVEY DAY RATE	<u>\$1,249.92</u>	x	<u>6.0</u>	=	<u>\$7,499.52</u>
SURVEY TECH	<u>\$101.44</u>	x	<u>40</u>	=	<u>\$4,057.60</u>
SENIOR SURVEYOR	<u>\$126.22</u>	x	<u>12</u>	=	<u>\$1,514.64</u>

**TOTAL COST** **\$13,071.76**

Comments: FIELD CREW TIME BASED ON AN 8 HOUR DAY



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**LEGEND**

- W — WATERMAIN
- DRAINAGE PIPE
- FAA — FAA CABLES
- ELECTRICAL DUCTBANK
- X — SECURITY FENCE
- FO — FIBER OPTIC CABLING
- — — EDGE LIGHT CIRCUIT
- PC PAVEMENT CORE LOCATION
- ⊕ BORING W/CBR SOIL BORING W/ CBR LOCATION

100% DESIGN SUBMITTAL  
NOT FOR CONSTRUCTION

REV. NO		DATE	REVISIONS: DESCRIPTION:	EOR

**TAXIWAY REHABILITATION PHASE 2  
AT  
ST. PETE-CLEARWATER  
INTERNATIONAL AIRPORT  
CLEARWATER, FL**

ONE TAMPA CITY CENTER  
201 NORTH FRANKLIN ST. SUITE 1400  
TAMPA, FLORIDA 33602  
OFFICE: 813-676-2300  
FAX: 813-676-2301  
CERTIFICATE OF AUTHORIZATION NUMBER 2822

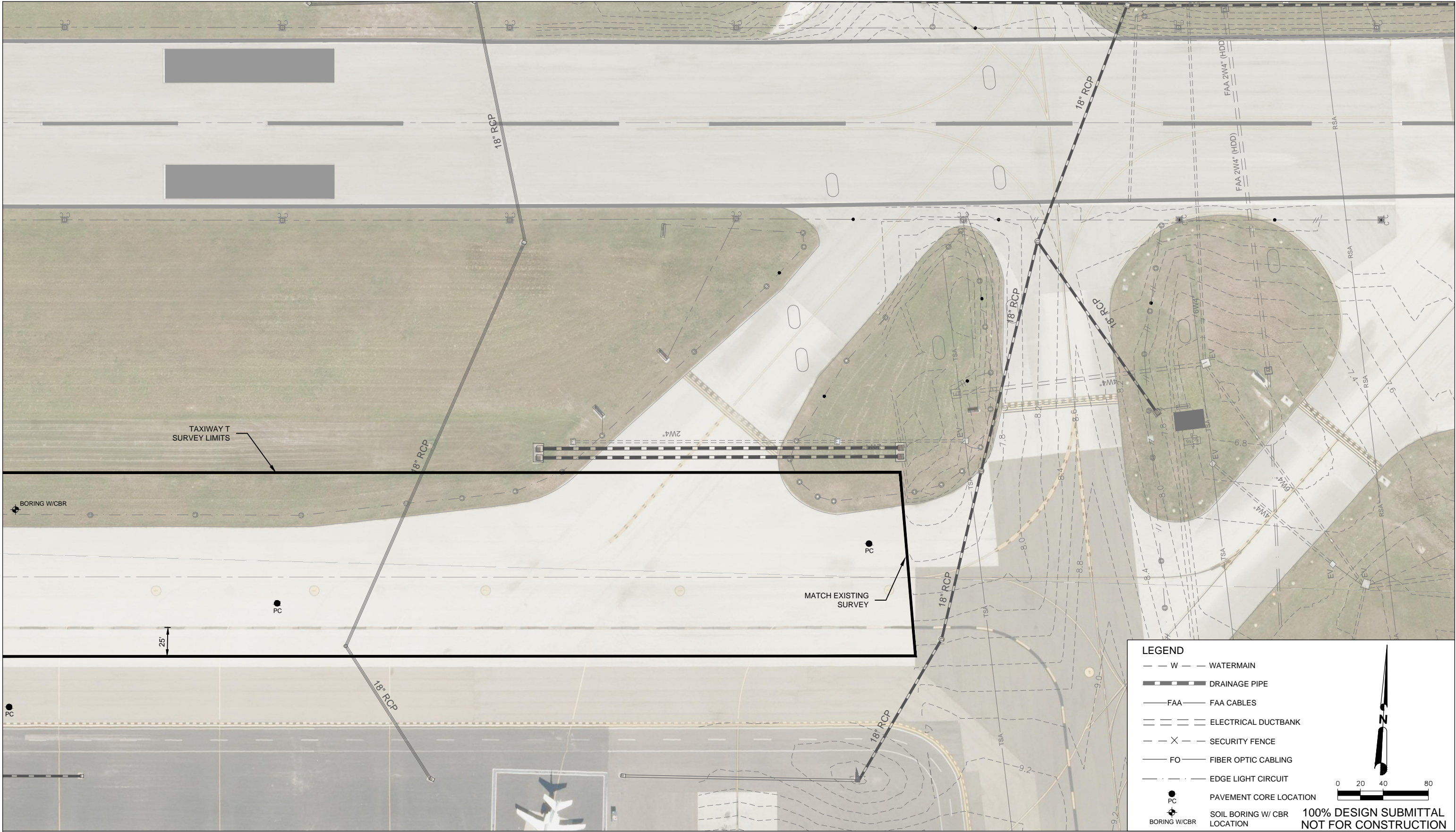
JOB NO:	E9Y25300
DRAWN:	JKS
DESIGN:	THS
CHECKED:	CWB
DATE:	05 MAR 15

**SURVEY/GEOTECH  
EXHIBIT**

**EX 1**



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**LEGEND**

- W — WATERMAIN
- — — DRAINAGE PIPE
- FAA — FAA CABLES
- — — ELECTRICAL DUCTBANK
- X — SECURITY FENCE
- FO — FIBER OPTIC CABLING
- — — EDGE LIGHT CIRCUIT
- PC PAVEMENT CORE LOCATION
- ⊕ BORING W/CBR SOIL BORING W/ CBR LOCATION

0 20 40 80

100% DESIGN SUBMITTAL  
NOT FOR CONSTRUCTION

REVISIONS:			EOR		TAXIWAY REHABILITATION PHASE 2 AT ST. PETE-CLEARWATER INTERNATIONAL AIRPORT CLEARWATER, FL	 ONE TAMPA CITY CENTER 201 NORTH FRANKLIN ST. SUITE 1400 TAMPA, FLORIDA 33602 OFFICE: 813-676-2300 FAX: 813-676-2301 CERTIFICATE OF AUTHORIZATION NUMBER 2822	JOB NO: E9Y25300		SURVEY/GEOTECH EXHIBIT <b>EX 2</b>
REV. NO	DATE	DESCRIPTION:					DRAWN: JKS	DESIGN: THS	
							CHECKED: CWB	DATE: 05 MAR 15	





July 17, 2015

Jacobs  
201 N Franklin St #1400,  
Tampa, FL 33602

Attn: Mr. Thomas Schilling, P.E.

**RE: Proposal for Geotechnical Engineering Services  
St. Petersburg-Clearwater International Airport  
Taxiway Rehabilitation Phase 2  
Taxiways T & D  
Pinellas County, Florida  
Tierra Proposal No. 65-15-173**

Mr. Schilling:

Tierra, Inc. appreciates the opportunity to submit the attached proposal to provide geotechnical engineering services for the project site.

### **Project Information**

The project site is located at the St. Petersburg-Clearwater International Airport (PIE) in Pinellas County, Florida. The project, as we understand it, consists of performing asphalt cores and soil borings to evaluate existing pavement and subsurface conditions for the Phase 2 Taxiway Rehabilitation project. Based on the information provided, it is our understanding that the Taxiway T improvements will consist of milling and overlay and Taxiway D will be realigned. The geotechnical services will consist primarily of asphalt pavement cores, borings, and laboratory testing.

It is our understanding that the project location is accessible to our standard geotechnical equipment. Tierra will coordinate with Jacobs and PIE personnel to set up dates and areas of access to perform the field work.

### **Taxiway T & D Scope of Services**

The objective of our study will be to obtain information concerning pavement and subsurface conditions at the site in order to base engineering estimates and recommendations in each of the following areas:

1. Pavement section identification and exploration of subgrade conditions.
2. General location and description of potentially deleterious materials discovered in the borings including existing fills or surficial organics.
3. Identification of groundwater levels.

In order to meet the preceding objectives, we propose to provide the following services would be completed:

1. Review published soils and topographic information. This published information will be obtained from the appropriate Florida Quadrangle Map published by the United States Geological Survey (USGS), as well as the Soil Survey of Pinellas County, Florida, published

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by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS).

2. Execute a program of subsurface exploration consisting of asphalt pavement cores, borings and subsurface sampling.

#### Taxiway T

As requested, we plan to perform five (5) pavement cores. At each of the core locations hand auger borings will be performed to an approximate depth of 5 feet below the pavement surface. In addition, Tierra will collect a bulk sample for a CBR test at the location identified by Jacobs. At the location of the bulk sample, Tierra will perform a hand auger boring to a depth of 5 feet below grade.

#### Taxiway D

As requested, we plan to perform two (2) pavement cores. At each of the core locations hand auger borings will be performed to an approximate depth of 5 feet below the pavement surface. In addition, Tierra will collect a bulk sample for a CBR test at the location identified by Jacobs. At the location of the bulk sample, Tierra will perform a hand auger boring to a depth of 5 feet below grade.

3. Visually classify the soil samples in the laboratory using the Unified Soil Classification System (USCS). Identify soil conditions at each boring location and perform laboratory testing. The pavement cores will be visually classified and saved for review by the design team.
4. Collect groundwater level measurements.
5. Prepare an engineering report in accordance with the request for proposal (RFP) provided and the scope of services herein that summarizes the course of study pursued, the field data generated, subsurface conditions encountered and our engineering recommendations in each of the pertinent topic areas.

### **Service Fee**

It is proposed that the fee for the performance of the above-outlined services be determined on a unit price basis, in accordance with our attached Schedule of Services and Fees and General Conditions. A copy of our Schedule of Services and Fees is enclosed herewith. On the basis of the estimated quantities and the Schedule of Services and Fees, it is estimated the fees to perform the geotechnical study are as follows:

- Taxiway T                      \$ 3,357.50
- Taxiway D                      \$ 2,153.75

### **Schedule**

We are in a position to start work on the project immediately upon receipt of authorization to proceed. We anticipate 2 weeks to complete field work including coordination with the airport. Engineering and laboratory testing will be initiated thereafter, requiring a further 7 to 10 work days to complete. From notice to proceed

**Proposal for Geotechnical Engineering Services  
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Taxiway Rehabilitation Phase 2  
Taxiways T & D  
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through submittal of a report will require on the order of 4 weeks. Verbal recommendations can be provided prior to issuance of our final report to facilitate the design schedule.

We appreciate the opportunity to offer our services to you. We look forward to working with you during the design phase. If this proposal is acceptable, please sign where indicated as notice to proceed and return one (1) copy of this proposal intact to our office. Should you have any questions in regard to this proposal, please do not hesitate to contact this office.

Respectfully Submitted,

**TIERRA, INC.**



Daniel R. Ruel, E.I.  
Geotechnical Engineer Intern



Erick M. Frederick, P.E.  
Senior Geotechnical Engineer

Attachment: Schedule of Services and Fees  
Tierra General Conditions

<b>AUTHORIZED BY:</b>	<b>INVOICE TO:</b>
<b>Name:</b>	<b>Company:</b>
<b>Title:</b>	<b>Name:</b>
<b>Signature:</b>	<b>Address:</b>
<b>Date:</b>	<b>Phone:</b> <b>Fax:</b> <b>Email:</b>
<b>Please indicates requested services below:</b> <b>Taxiway T Services</b> <input type="checkbox"/> <b>Taxiway D Services</b> <input type="checkbox"/>	

	Unit	# of Units	Unit Price		Total
I. FIELD INVESTIGATION					
Auger Borings	L.F.	30	\$	9.25	\$ 277.50
Concrete Cores	Each	5	\$	125.00	\$ 625.00
II. LABORATORY TESTING					
Natural Moisture Content Tests	Test	2	\$	10.00	\$ 20.00
Grain-Size Analysis - Single Sieve	Test	3	\$	35.00	\$ 105.00
Atterberg Limit Tests	Test	2	\$	85.00	\$ 170.00
Environmental Tests (pH, sulfates, chlorides, resistivity)	Set		\$	130.00	\$ 0.00
LBR Test	Test	1	\$	300.00	\$ 300.00
III. FIELD ENGINEERING AND TECHNICAL SERVICES					
Site Recon./Utility Coordination/Traffic Control					
Sr. Engineering Technician	Hour	8	\$	75.00	\$ 600.00
Engineering Technician	Hour	8	\$	65.00	\$ 520.00
IIIA. ENGINEERING AND TECHNICAL SERVICES					
Geotechnical/Project Engineer	Hour	2	\$	105.00	\$ 210.00
Engineering Intern/Staff Engineer	Hour	4	\$	80.00	\$ 320.00
Designer/Computer Technician	Hour	2	\$	75.00	\$ 150.00
Secretary/Clerical	Hour	1	\$	60.00	\$ 60.00
				Total	\$ 3,357.50

	Unit	# of Units	Unit Price		Total
I. FIELD INVESTIGATION					
Auger Borings	L.F.	15	\$	9.25	\$ 138.75
Concrete Cores	Each	2	\$	125.00	\$ 250.00
II. LABORATORY TESTING					
Natural Moisture Content Tests	Test	1	\$	10.00	\$ 10.00
Grain-Size Analysis - Single Sieve	Test	2	\$	35.00	\$ 70.00
Atterberg Limit Tests	Test	1	\$	85.00	\$ 85.00
LBR Test	Test	1	\$	300.00	\$ 300.00
III. FIELD ENGINEERING AND TECHNICAL SERVICES					
Site Recon./Utility Coordination/Traffic Control					
Sr. Engineering Technician	Hour	4	\$	75.00	\$ 300.00
Engineering Technician	Hour	4	\$	65.00	\$ 260.00
IIIA. ENGINEERING AND TECHNICAL SERVICES					
Senior Project Engineer	Hour		\$	140.00	\$ 0.00
Geotechnical/Project Engineer	Hour	2	\$	105.00	\$ 210.00
Engineering Intern/Staff Engineer	Hour	4	\$	80.00	\$ 320.00
Designer/Computer Technician	Hour	2	\$	75.00	\$ 150.00
Secretary/Clerical	Hour	1	\$	60.00	\$ 60.00
				Total	\$ 2,153.75