EXHIBIT A

SCOPE OF SERVICES
FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT FIVE
CONTINUING SERVICES FOR DISTRICTWIDE SURVEYING AND MAPPING

Financial Project ID:	***411998-1-32-20, 411998-1-32-21***
Description:	***FDOT District Five Continuing Services Districtwide Surveying and Mapping Services***

EXHIBIT A

			Page
1	PURPOSE		5
2	PROJECT DESCRIPTION		5
3	PROJECT SCHEDULE		5
4	SUBMITTALS		5
5	SURVEY		6
	5.1	Horizontal Project network Control (HPNC)	6
	5.2	Vertical Project Network Control (VPNC)	6
	5.3	Alignment and/or Existing Right of Way Lines	7
	5.4	Aerial Targets	7
	5.5	Reference Points	7
	5.6	Topography (2D)	7
	5.7	Digital Terrain Model (DTM)	7
	5.8	Roadway Cross Sections/Profiles	7
	5.9	Side Street Surveys	7
	5.10	Underground Utilities	7
	5.11	Outfall Survey	7
	5.12	Drainage Survey	7
	5.13	Bridge Survey	8
	5.14	Channel Survey	8
	5.15	Pond Site Survey	8
	5.16	Mitigation Survey	8
	5.17	Jurisdiction Line Survey	8
	5.18	Geotechnical Support	8
	5.19	Sectional/Grant Survey	8
	5.20	Subdivision Location	8
	5.21	Maintained R/W	8
	5.22	Boundary Survey	8
	5.23	Water Boundary Survey	8
	5.24	Right of Way Staking	9
	5.25	Right of Way Monumentation	9
	5.26	Line Cutting	9
	5.27	Work Zone Safety	9
	5.28	Miscellaneous Surveys	9
	5.29	Supplemental Surveys	9
	5.30	Document Research	9
	5.31	Field Review	9
	5.32	Technical Meetings	9
	5.33	Quality Control/Quality Assurance	9
	5.34	Supervision	9
	5.35	Coordination	9
6.	PHOTOGRAMMETRY		9
	6.1	Flight Preparation	10
	6.2	Control Point Coordination	10
	6.3	Mobilization	10
	6.4	Flight Operations	10
	6.5	Film Processing	10
	6.6	Photo Products	10
	6.7	Scanning	10
	6.8	Lidar	10
	6.9	Aerial Triangulation	10
	6.10	Surfaces	10
	6.11	Ortho Generation	10
	6.12	Rectified Digital Imagery (Geo-referenced)	10
	6.13	Mosaicking	10

	6.14	Sheet Clipping	10
	6.15	Topographics (3D)	11
	6.16	Planimetrics (2D)	11
	6.17	Drainage Basin	11
	6.18	CADD Edit	11
	6.19	Data Merging	11
	6.20	Miscellaneous	11
	6.21	Field Review	11
	6.22	Meetings	11
	6.23	Quality Control/Quality Assurance	11
	6.24	Supervision	11
	6.25	Coordination	11
7.	MAPPING		11
	7.1	Alignment	12
	7.2	Section and ¼ Section Lines	12
	7.3	Subdivisions	12
	7.4	Existing Right of Way	12
	7.5	Topography	12
	7.6	Parent Tract Properties and Existing Easements	12
	7.7	Proposed Right of Way Requirements	12
	7.8	Limits of Construction	12
	7.9	Jurisdictional/Agency Lines	12
	7.10	Control Survey Cover Sheet	12
	7.11	Control Survey Key Sheet	12
	7.12	Control Survey Detail Sheet	12
	7.13	Right of Way Map Cover Sheet	12
	7.14	Right of Way Map Key Sheet	12
	7.15	Right of Way Map Detail Sheet	12
	7.16	Maintenance Map Cover Sheet	12
	7.17	Maintenance Map Key Sheet	12
	7.18	Maintenance Map Detail Sheet	12
	7.19	Reference Point Sheet	12
	7.20	Project Network Control Sheet	13
	7.21	Table of Ownerships Sheet	13
	7.22	Parcel Sketches	13
	7.23	TIITF Sketches	13
	7.24	Other Specific Purpose Survey(s)	13
	7.25	Boundary Survey(s) Maps	13
	7.26	Right of Way Monumentation Map	13
	7.27	Title Search Map	13
	7.28	Title Search Report	13
	7.29	Legal Descriptions	13
	7.30	Final Map/Plans Comparison	13
	7.31	Field Reviews	13
	7.32	Technical Meetings	13
	7.33	Quality Assurance/Quality Control	13
	7.34	Supervision	13
	7.35	Coordination	13
	7.36	Supplemental Mapping	13
8.	TERRESTRIAL MOBILE LiDAR		13
	8.1	Terrestrial Mobile LiDAR Mission Planning	14
	8.2	Project Control Point Coordination	14
	8.3	Terrestrial Mobile LiDAR Mobilization	14
	8.4	Terrestrial Mobile LiDAR Mission	14
	8.5	Terrestrial Mobile LiDAR Processing	14
	8.6	Terrestrial Mobile Photography Processing	14
	8.7	Transformation / Adjustment	14

8.8 Classification / Editing 14
8.9 Specific Surface Reporting 14
8.10 Topographic (3D) Mapping 14
8.11 Topographic (2D) Mapping 14
8.12 CADD Edits 14
8.13 Data Merging 14
8.14 Miscellaneous 14
8.15 Field Reviews 14
8.16 Technical Meetings 14
8.17 Quality Assurance / Quality Control 14
8.18 Supervision 14
8.19 Coordination 14
9. OTHER SURVEY SERVICES 15
10. PROJECT REQUIRMENTS 16
10.1 Project Manager 16
10.2 Key Personnel 16
10.3 Progress Reporting 16
10.4 Correspondence 16
10.5 Professional Endorsement 16
10.6 Computer Automation 16
10.7 Coordination With Other Consultants 16
11. INVOICING LIMITS 16

SCOPE OF SERVICES FOR CONSULTANT SURVEYING AND MAPPING
DISTRICTWIDE SERVICES

This Exhibit forms an integral part of the agreement between the State of Florida Department of Transportation (hereinafter referred to as the DEPARTMENT) and XXXXX (hereinafter referred to as the CONSULTANT) relative to the transportation facility described as follows:

Financial Project ID:	***411998-1-32-20***
Description:	FDOT District Five Continuing Services Districtwide Surveying and Mapping Services

1 PURPOSE

The purpose of this Exhibit is to describe the scope of work and the responsibilities of the CONSULTANT and the DEPARTMENT in connection with Surveying and Mapping Services required to support transportation facilities.

The general objective is for the CONSULTANT to perform surveying and mapping services as required, ensuring all activities and products developed are in compliance with applicable Florida Statutes, Department procedures and District Five Specific Requirements.

The CONSULTANT shall demonstrate good project management practices while working on all Task Work Orders. These include communication with the DEPARTMENT and others as necessary, management of time and resources, and documentation. The CONSULTANT shall set up and maintain throughout the term of this contract a contract file in accordance with DEPARTMENT procedures. It shall be the CONSULTANT's responsibility to utilize the very best surveying judgment, practices and principles possible during the performance of the work commissioned under this contract.

The DEPARTMENT will provide contract administration, management services, and technical reviews of all work associated with the development and preparation of all Task Work Orders. The DEPARTMENT will provide job specific information and/or functions as outlined in this contract.

2 PROJECT DESCRIPTION

The CONSULTANT shall be responsible for the professional quality, technical accuracy and coordination of all surveys, drawings, and other services furnished by the CONSULTANT under this contract.

The CONSULTANT shall provide a Quality Control Plan that describes the procedures to be utilized to verify, independently check, and review all maps, databases, field books, and other documentation prepared as a part of the contract. The CONSULTANT shall describe how the checking and review processes are to be documented to verify that the required procedures were followed. The Quality Control Plan may be one utilized by the CONSULTANT as part of their normal operation or it may be one specifically designed for this project. The CONSULTANT shall submit a Quality Control Plan for approval within 10 (ten) calendar days of the written Notice to Proceed if required by the Department for a specific Task Work Order assignment.

The CONSULTANT shall, without additional compensation, correct all errors or deficiencies in the maps, databases, field books, and/or other services.

3 PROJECT SCHEDULE

The Consultant's written proposal shall include a schedule for each Task Work Order assignment.

4 SUBMITTALS

The CONSULTANT shall furnish maps, databases, field books and/or other documents as required by the DEPARTMENT to adequately control, coordinate, and approve a Task Work Order assignment. The CONSULTANT shall distribute phase submittals as directed by the DEPARTMENT.

All maps and databases are to be prepared with English values in accordance with all applicable current DEPARTMENT manuals, memorandums, and guidelines.

Florida Statutes as applicable to include Chapter 472, F.S. and Chapter 177, F.S.
Florida Administrative Codes as applicable
FDOT Aerial Surveying Standards for Transportation Projects Topic 550-020-002
FDOT Computer Aided Design and Drafting (CADD) Manual
Florida Department of Transportation Project Development and Environmental Manual
Florida Department of Transportation Plans Preparation Manual
Florida Department of Transportation Standard Specifications for Road and Bridge Construction
FDOT Procedures and Policies
FDOT Procurement Procedure 001-375-030, Compensation for Consultant Travel Time on Professional Services Agreements
FDOT Right of way Procedures Manual
CADD Production Criteria Handbook
CADD Manual
Code of Federal Regulations (C.F.R.)
District Five Supplement to CADD Handbook
Quality Assurance Guidelines
Safety Standards
Rule 5J17, F.A.C. Standards of Practice for Professional Surveyors and Mappers
Department of Environmental Protection Rules Governing Mean High Water and Jurisdictional Line Surveys
FDOT Utility Accommodation Manual
FDOT Survey Procedure Topic 550-030-101
FDOT Survey Handbook
Terrestrial Mobile LiDAR Procedure
Highway Field Survey Specifications
Automated Survey Data Gathering
Standards for Consultant-Submitted G.P.S. Static Control Projects
EFB User Guide
FDEP Bureau of Surveying and Mapping
FDOT Right of Way Mapping Procedure 550-030-015
FDOT Right of Way Mapping Handbook
FDOT District Five Surveying and Mapping QA/QC Management
District Five Surveying and Mapping Miscellaneous Format Information
Applicable Rules, Guidelines Codes and authorities of other Municipal, County, State and federal Agencies
Any special instructions from the DEPARTMENT

5. Survey

The CONSULTANT shall perform survey tasks in accordance with all applicable statutes, manuals, guidelines, standards, handbooks, procedures, and current design memoranda. The CONSULTANT shall submit all survey notes and computations to document the surveys. All field survey work shall be recorded in approved media and submitted to the DEPARTMENT. Field books submitted to the DEPARTMENT must be of an approved type. The field books shall be certified by the surveyor in responsible charge of work being performed before the final product is submitted.

The surveyor notes shall include documentation of decisions reached from meetings, telephone conversations or site visits. All like work (such as bench lines, reference points, etc.) shall be recorded contiguously. The DEPARTMENT may not accept field survey radial locations of section corners, platted subdivision lot and block corners, alignment control points, alignment control reference points and certified section corner references. The DEPARTMENT may instead require that these points be surveyed by true line, traverse or parallel offset.

5.1 Horizontal Project Network Control (HPNC)

Establish or recover HPNC, for the purpose of establishing horizontal control on the Florida State Plane Coordinate System or datum approved by the District Surveying and Mapping Administrator; may include primary or secondary control points. Include analysis and processing of all field collected data, and preparation of forms.

5.2 Vertical Project Network Control (VPNC)

Establish or recover VPNC, for the purpose of establishing vertical control on datum approved by the DSMA; may include primary or secondary vertical control points. Includes analysis and processing of all field collected data, and preparation of forms

5.3 Alignment and/or Existing Right of Way Lines

Establish, recover or re-establish project alignment. Also includes analysis and processing of all field collected data, existing maps, and/or reports for identifying mainline, ramp, offset, or secondary alignments. Depict alignment and/or existing R/W lines (in required format) per DEPARTMENT R/W Maps, platted or dedicated rights of way.

5.4 Aerial Targets

Place, locate, and maintain required aerial targets and/or photo identifiable points. Includes analysis and processing of all field collected data, existing maps, and/or reports.

5.5 Reference Points

Reference HPNC points, project alignment, vertical control points, section, ¼ section, center of section corners and G.L.O. corners as required

5.6 Topography (2D)

Locate all above ground features and improvements. Deliver in appropriate electronic format. Effort includes field edits, analysis and processing of all field collected data, existing maps, and/or reports

5.7 Digital Terrain Model (DTM)

Locate all above ground features and improvements for the limits of the project by collecting the required data for the purpose of creating a DTM with sufficient density. Shoot all break lines, high and low points. Effort includes field edits, analysis and processing of all field collected data, existing maps, and/or reports

5.8 Roadway Cross Sections/Profiles

Perform field survey check sections or profiles to verify the required accuracy of the digital terrain model and/or to determine existing cross slope. Includes analysis and processing of all field collected data for comparison with DTM.

5.9 Side Street Surveys

Refer to tasks of this document as applicable.

5.10 Underground Utilities

Designation includes 2-dimensional collection of existing utilities and selected 3-dimensional verification as needed for designation. Location includes non-destructive excavation to determine size, type and location of existing utility, as necessary for final 3-dimensional verification. Survey includes collection of data on points as needed for designates and locates. Includes analysis and processing of all field collected data, and delivery of all appropriate electronic files.

5.11 Outfall Survey

Locate all above ground features and improvements for the limits of the project by collecting the required data for the purpose of a D.T.M. Survey with sufficient density of shots. Shoot all break lines, high and low points. Includes field edits, analysis and processing of all field collected data, existing maps, and/or reports.

5.12 Drainage Survey

Locate underground data (XYZ, pipe size, type, condition and flow line) that relates to above ground data. Includes field edits, analysis and processing of all field collected data, existing maps, and/or reports

5.13 Bridge Survey

Locate required above ground features and improvements for the limits of the bridge. Includes field edits, analysis and processing of all field collected data, existing maps, and/or reports.

5.14 Channel Survey

Locate all topographic features and improvements for the limits of the project by collecting the required data for the purpose of a D.E.M. Survey with sufficient density of shots. Shoot all break lines, high and low points. Includes field edits, analysis and processing of all field collected data, maps, and/or reports.

5.15 Pond Site Survey

Refer to tasks of this document as applicable.

5.16 Mitigation Survey

Refer to tasks of this document as applicable.

5.17 Jurisdiction Line Survey

Perform field location (2-dimensional) of jurisdiction limits as defined by respective authorities, also includes field edits, analysis and processing of all field collected data, preparation of reports.

5.18 Geotechnical Support

Perform 3-dimensional (X,Y,Z) field location, or stakeout, of boring sites established by geotechnical engineer. Includes field edits, analysis and processing of all field collected data and/or reports.

5.19 Sectional/Grant Survey

Perform field location/placement of section corners, 1/4 section corners, and fractional corners where pertinent. Includes analysis and processing of all field-collected data and/or reports.

5.20 Subdivision Location

Survey all existing recorded subdivision/condominium boundaries, tracts, units, phases, blocks, street R/W lines, common areas. Includes analysis and processing of all field collected data and/or reports. If

unrecorded subdivision is on file in the public records of the subject county, tie existing monumentation of the beginning and end of unrecorded subdivision.

5.21 Maintained R/W

Perform field location (2-dimensional) of maintained R/W limits as defined by respective authorities, if needed. Also includes field edits, analysis and processing of all field collected data, preparation of reports.

5.22 Boundary Survey

Perform boundary survey as defined by DEPARTMENT standards. Includes analysis and processing of all field collected data, preparation of reports.

5.23 Water Boundary Survey

Perform Mean High Water, Ordinary High Water and Safe Upland Line surveys as required by DEPARTMENT standards.

5.24 Right of Way Staking

Perform field staking and calculations of existing/proposed R/W lines for on-site review purposes.

5.25 Right of Way Monumentation

Set R/W monumentation as depicted on final R/W maps for corridor and water retention areas.

5.26 Line Cutting

Perform all efforts required to clear vegetation from the line of sight.

5.27 Work Zone Safety

Provide work zone safety services as required by DEPARTMENT standards.

5.28 Miscellaneous Surveys

Refer to tasks of this document, as applicable, to perform surveys not described herein.

5.29 Supplemental Surveys

Supplemental survey days and hours are to be approved in advance by DSMA. Refer to tasks of this document, as applicable, to perform surveys not described herein.

5.30 Document Research

Perform research of documentation to support field and office efforts involving surveying and mapping.

5.31 Field Review

Perform verification of the field conditions as related to the collected survey data.

5.32 Technical Meetings

Attend meetings as required and negotiated by the Surveying and Mapping Department.

5.33 Quality Control/Quality Assurance

Establish and implement a QAQC plan. Also includes subconsultant review, response to comments and any resolution meetings if required, preparation of submittals for review, etc.

5.34 Supervision

Perform all activities required to supervise and coordinate project. These activities must be performed by the project supervisor, a Florida Professional Surveyor.

5.35 Coordination

6 Photogrammetry

The CONSULTANT shall perform photogrammetric tasks in accordance with all applicable statues, manuals, guidelines, standards, handbooks, procedures, and current design memoranda. In addition to the maps and photographic products, the CONSULTANT shall submit all computations to document the mapping. This will include documentation of all decisions reached from meetings, telephone conversations, and site visits.

6.1 Flight Preparation

Review record data, create target diagrams, and plan the mission.

6.2 Control Point Coordination

Determine photo identifiable control points, and mark contact prints.

6.3 Mobilization

Perform pre- and post flight aircraft inspection; prepare the aircraft and camera for the mission.

6.4 Flight Operations

Operate the aircraft, aerial camera, and other instruments to obtain aerial photography.

6.5 Film Processing

Process, check, and annotate the aerial film.

6.6 Photo Products

Prepare contact prints, contact diapositives, and photo enlargements.

6.7 Scanning

Scan photographic images.

6.8 Lidar

Post process lidar data to XYZ coordinates.

6.9 Aerial Triangulation

Measure and adjust control within aerial images.

6.10 Surfaces

Collect spot elevations and break lines to create surface model.

6.11 Ortho Generation

Create the ortho image.

6.12 Rectified Digital Imagery (Georeferenced)

Create the rectified digital image.

6.13 Mosaicking

Create the mosaic.

6.14 Sheet Clipping

Create plot files for sheets from the database.

6.15 Topographics (3D)

Prepare 3D topographic map.

6.16 Planimetrics (2D)

Prepare 2D planimetric map.

6.17 Drainage Basin

Prepare drainage basin maps.

6.18 CADD Edit

Perform final edit of graphics for delivery of required Microstation .dgn, CADD, and Geopak files.

6.19 Data Merging

Merge photogrammetric files, field survey files, and data from other sources.

6.20 Miscellaneous

Perform any other task not identified by numbered tasks.

6.21 Field Review

Perform on site review of maps.

6.22 Meetings

Attend meetings as required.

6.23 Quality Control/Quality Assurance

Establish and implement a QC/QA plan.

6.24 Supervision

Supervise all photogrammetric activities. This task must be performed by the project supervisor, a Florida P.S.M.

6.25 Coordination

Coordinate with all elements of the project to produce a final photogrammetric product.

7 MAPPING

The CONSULTANT will be responsible for the preparation of control survey maps, right of way maps, maintenance maps, sketches, other miscellaneous survey maps, and legal descriptions as required for this project in accordance with all applicable DEPARTMENT Manuals, Procedures, Handbooks, and Florida Statutes. All maps, surveys and legal descriptions will be prepared under the direction of a Florida Professional Surveyor and Mapper (PSM) to DEPARTMENT size and format requirements utilizing DEPARTMENT approved software, and will be designed to provide a high degree of uniformity and maximum readability. The CONSULTANT will submit maps, legal descriptions, quality assurance check prints, checklists, electronic media files and any other documents as required for this project to the DEPARTMENT for review at stages of completion as negotiated.

Master CADD File

7.1 Alignment

7.2 Section and 1/4 Section Lines

7.3 Subdivisions

7.4 Existing Right of Way

7.5 Topography

7.6 Parent Tract Properties and Existing Easements

7.7 Proposed Right of Way Requirements

The ENGINEER OF RECORD (EOR) will provide the proposed requirements. The PSM is responsible for calculating the final geometry.

7.8 Limits of Construction

The limits of construction DGN file as provided by the EOR will be imported or referenced to the master CADD file. Additional labeling will be added as required. The PSM is required to advise the EOR of any noted discrepancies between the limits of construction line and the existing/proposed right of way lines, and for making adjustments as needed when a resolution is determined.

7.9 Jurisdictional/Agency Lines

These lines may include but are not limited to jurisdictional, wetland, water boundaries, and city/county limit lines.

SHEET FILES

7.10 Control Survey Cover Sheet

7.11 Control Survey Key Sheet

7.12 Control Survey Detail Sheet

7.13 Right of Way Map Cover Sheet

7.14 Right of Way Map Key Sheet

7.15 Right of Way Map Detail Sheet

7.16 Maintenance Map Cover Sheet

7.17 Maintenance Map Key Sheet

7.18 Maintenance Map Detail Sheet

7.19 Reference Point Sheet

This sheet(s) will be included with the Control Survey Map, Right of Way Map and Maintenance Map.

7.20 Project Network Control Sheet

This sheet depicts the baseline, the benchmarks, the primary and secondary control points and their reference points including the type of material used for each point, their XYZ coordinates, scale factors and convergence angles. This sheet(s) may be included with the Control Survey Map, Right of Way Map and Maintenance Map.

7.21 Table of Ownerships Sheet

MISCELLANEOUS SURVEYS AND SKETCHES

7.22 Parcel Sketches

7.23 TIITF Sketches

7.24 Other Specific Purpose Survey(s)

7.25 Boundary Survey(s) Map

7.26 Right of Way Monumentation Map

7.27 Title Search Map

7.28 Title Search Report

7.29 Legal Descriptions

7.30 Final Map/Plans Comparison

The PSM will perform a comparison of the final right of way maps with the available construction plans to review the correctness of the type of parcel to be acquired and the stations/offsets to the required right of way. The PSM will coordinate with the EOR to resolve any conflicts or discrepancies and provide documentation of the review.

7.31 Field Reviews

7.32 Technical Meetings

7.33 Quality Assurance/Quality Control

7.34 Supervision

7.35 Coordination

7.36 Supplemental Mapping

8 TERRESTRIAL MOBILE LiDAR

The CONSULTANT shall perform Terrestrial Mobile LiDAR tasks in accordance with all applicable statutes, manuals, guidelines, standards, handbooks, procedures, and current design memoranda.

In addition to the maps and LiDAR products, the CONSULTANT shall submit all computations and reports to support the mapping. This will include documentation of all decisions reached from meetings, telephone conversations, and site visits.

8.1 Terrestrial Mobile LiDAR Mission Planning

Research and prepare materials necessary for the successful execution of the Mobile LiDAR Mission. This includes but is not limited to route and safety planning, GPS /data acquisition scheduling, weather reports, and site terrain research.

8.2 Project Control Point Coordination

All efforts necessary to coordinate the proper placement of project ground control i.e. base stations, transformation control points, and validation points, supporting the Mobile LiDAR survey.

8.3 Terrestrial Mobile LiDAR Mobilization

Prepare the LiDAR sensor and vehicle for project data collection, and get specialized personnel and equipment on site.

8.4 Terrestrial Mobile LiDAR Mission

Perform site calibrations of LiDAR sensor and collect laser survey data, including any simultaneous base station GPS occupations and operation of any necessary safety equipment.

8.5 Terrestrial Mobile LiDAR Processing

Download and post process collected measurement data from Mobile LiDAR vehicle sensors, and any base stations occupied during mission. Analyze Mobile LiDAR measurement points and scan route overlaps. Separate any large point cloud data sets into manageable file sizes with corresponding indexes.

8.6 Terrestrial Mobile Photography Processing

Process, reference, and name digital photographic imagery files collected during Mobile LiDAR mission.

8.7 Transformation / Adjustment

Adjust LiDAR point cloud data to Project Control points. Create point cloud data file(s) in approved digital format. Prepare required reports of precision and accuracy achieved. If this task is performed by separate firm, or is the final product to be delivered, include effort for Survey Report.

8.8 Classification / Editing

Indentify and attribute (classify) point cloud data into requested groups. Classify or remove erroneous points.

8.9 Specific Surface Reporting

Prepare reports, data and/or graphics of specific surface details such as, but not limited to pavement rutting, bridge structure clearance to roadway surface.

8.10 Topographic (3) Mapping

Produce three dimensional (3D) topographic survey map(s) from collected Mobile LiDAR data. This includes final preparation of Construction Information Management (CIM) deliverable, if applicable.

8.11 Topographic (2) Planimetric Mapping

Produce two dimensional (2D) planimetric map(s) from collected Mobile LiDAR data.

8.12 CADD Edits

Perform final edit of graphics for delivery of required CADD files. This includes final presentation of CIM deliverable, if applicable.

8.13 Data Merging

Merge Mobile LiDAR survey and mapping files, with other field survey files, and data from other sources.

8.14 Miscellaneous

Other tasks not specifically addressed in this document.

8.15 Field Reviews

Perform on site review of maps.

8.16 Technical Meetings

Attend meetings as required.

8.17 Quality Assurance / Quality Control

Establish and implement a QA/QC plan.

8.18 Supervision

Supervise all Terrestrial Mobile LiDAR activities. This task must be performed by the project supervisor, a Florida P.S.M.

8.19 Coordination

Coordinate with all elements of the project to produce a final product.

9 OTHER SURVEY SERVICES

The use of Unmanned Aerial Vehicle (UAV) or Unmanned Aircraft Systems (UAS) for Design Survey Data Collection will be determined on a case by case basis and will require final approval by the District Surveyor, the District Design Engineer, and the State Surveyor. The use of any Unmanned Aircraft System (UAS), Unmanned Aerial Vehicle (UAV), drone, or similar system to accomplish contract activities must comply with federal, state, and local laws and regulations,

10 PROJECT REQUIREMENTS

10.1 Project Manager

The DEPARTMENT and the CONSULTANT will designate a Project Manager who shall be the representative of their respective organizations for each Task Work Order. While it is expected the CONSULTANT shall seek and receive advice from various state, regional, and local agencies, the final direction on all matters of any Task Work Order remain with the DEPARTMENT Project Manager.

10.2 Key Personnel

The CONSULTANT's work shall be performed and directed by the key personnel identified in the proposal presentations by the CONSULTANT. Any changes in the indicated personnel shall be subject to review and approval by DEPARTMENT.

10.3 Progress Reporting

The CONSULTANT shall meet with the DEPARTMENT as required and shall provide a written progress and schedule status reports that describe the work performed on each task. Progress and schedule status reports shall be delivered to the DEPARTMENT concurrently with invoices. The Project Manager will make judgment on whether work of sufficient quality and quantity has been accomplished by comparing the reported percent complete against actual work accomplished.

10.4 Correspondence

Copies of all written correspondence between the CONSULTANT and any party pertaining specifically to this contract shall be provided to the DEPARTMENT for their records as determined necessary for each Task Work Order.

10.5 Professional Endorsement

The CONSULTANT shall have a Registered Professional Surveyor and Mapper in the State of Florida sign and seal all reports, documents, and maps as required by DEPARTMENT standards.

10.6 Computer Automation

The project will be developed utilizing Computer Aided Drafting and Design (CADD) systems. The DEPARTMENT makes available software to help assure quality and conformance with policy and procedures regarding CADD. It is the responsibility of the CONSULTANT to meet the requirements in the DEPARTMENT's CADD Manual. The CONSULTANT will submit final documents and files as described therein.

10.7 Coordination With Other Consultants

The CONSULTANT is to coordinate his work with any and all adjacent and integral consultants as required for each Task Work Order.

11 INVOICING LIMITS

Payment for the work accomplished will be in accordance with Method of Compensation of this contract. Invoices shall be submitted to the DEPARTMENT, in a format prescribed by the DEPARTMENT. The DEPARTMENT Project Manager and the CONSULTANT shall monitor the cumulative invoiced billings to insure the reasonableness of the billings compared to the project schedule and the work accomplished and accepted by the DEPARTMENT.

The CONSULTANT will provide a list of key events and the associated total percentage of work considered to be complete at each event. This list will be used to control invoicing. Payments will not be

made that exceed the percentage of work for any event until those events have actually occurred and the results are acceptable to the DEPARTMENT. The CONSULTANT will provide employee time records along with the billing period status report to support invoicing.