

**WORK ORDER NUMBER 51**  
**AVIATION BLVD EXTENSION ALTERNATIVE ALIGNMENT STUDY**

This Work Order Number 51 is entered into as of this \_\_\_ day of \_\_\_\_\_, 2022, pursuant to that certain Continuing Consulting Engineering Services Agreement for Professional Services entered into as of this 17<sup>th</sup> day of April, 2018 (collectively referred to as the “Agreement”), by and between INDIAN RIVER COUNTY, a political subdivision of the State of Florida (“COUNTY”) and KIMLEY-HORN AND ASSOCIATES, INC. (“Consultant”).

The COUNTY has selected the Consultant to perform the professional services set forth on Exhibit A (Scope of Work), attached to this Work Order and made part hereof by this reference. The professional services will be performed by the Consultant for the fee schedule set forth in Exhibit B (Fee Schedule), attached to this Work Order and made a part hereof by this reference. The Consultant will perform the professional services within the timeframe more particularly set forth in Exhibit C (Time Schedule), attached to this Work Order and made a part hereof by this reference all in accordance with the terms and provisions set forth in the Agreement. Pursuant to paragraph 1.4 of the Agreement, nothing contained in any Work Order shall conflict with the terms of the Agreement and the terms of the Agreement shall be deemed to be incorporated in each individual Work Order as if fully set forth herein.

**EXHIBIT A – SCOPE OF WORK**

The COUNTY desires to evaluate alternative roadway alignments associated with extending Aviation Boulevard from the US Highway 1/Aviation Boulevard intersection to 36<sup>th</sup> Street. The purpose of the newly contemplated roadway corridor will be to serve as an alternative route to improve existing and future access to the Cleveland Clinic Indian River Hospital and provide relief to 37<sup>th</sup> Street, which is nearing vehicular capacity.

The Alternative Alignment Study will consider five (5) key factors:

- long-range planning
- public safety
- environmental impacts
- alternative alignments
- cost

The alternative alignments considered will be those that maximize the utilization of existing roadway right-of-way, minimized impacts to the environment and resulted in minimized impacts to private property.

A. Corridor Survey:

The Consultant will provide topographic design survey services necessary to support and facilitate contemplated design and permitting activities associated with this project. This task will consist of the preparation of digital base map topographic surveys in accordance with the Professional Land Surveyors in Chapter 5J-17, Florida Administrative Code, pursuant to the intent of the Florida Standards of Practice set forth by the Florida Board of Professional Surveyors in Section 472.027, Florida Statutes.

*TOPOGRAPHIC SURVEY*

1. Establish horizontal and vertical control.
  - Horizontal Control will be based on North American Datum of 1983 (NAD83), State Plane Coordinate System, Florida East Zone.
  - Vertical Control will be based on North American Vertical Datum of 1988 (NAVD88).
2. Locate all improvements and utilities, as evidenced by above ground features or if designated and marked by the Utility Owners or their designated representative or a contracted service at the original time of field visit.
3. Obtain spot elevations on natural ground and existing improvements suitable for interpolation of one-foot contours to be shown on the final drawing.
4. Establish a minimum of two (2) site benchmarks.
5. Topographic coverage will be limited to the area outlined in red on the attached Exhibit "B".
6. Location, top elevation, pipe size and type, and pipe invert elevations for all inlets, storm and sanitary manholes, and control structures.
7. Locate trees 8-inch diameter and larger measured at breast height (DBH).
8. Locate wetlands line as flagged by clients Environmental Consultant if required.
9. Locate soil borings as established by the client's Geotechnical consultant if required.

*SKETCH AND DESCRIPTIONS*

Provide Surveying Services to meet the Standards of Practice as prescribed by the Florida Board of Professional land Surveyors in Chapter 5J-17 FAC, Section 472.027 of the Florida Statutes. The survey will include the following:

1. Prepare six (6) descriptions as designated by the client.
2. Prepare six (6) sketches of the same, suitable for recording in the Public Records of Indian River County, Florida.

B. Geotechnical Investigation:

The scope of our work will include collecting existing pavement section data, soil stratigraphy data, and groundwater level data within the proposed roadway improvement areas. In addition, we will provide soil parameters to be used in the design of the drilled

shaft foundations. The following summarizes our proposed scope of work and associated fees for conducting the subject exploration.

*FIELD EXPLORATION*

The requested field exploration program will include the following:

| <b>Description</b>                                     | <b>Number of Borings</b> | <b>Depth Below Ground Surface (feet)</b> |
|--|--------------------------|--|
| Mast Arm Pole Foundations -<br>US Highway 1            | 4 SPT                    | 40                                       |
| Mast Arm Pole Foundations –<br>36 <sup>th</sup> Street | 2 SPT                    | 40                                       |
| Stormwater Pond  | 4 SPT                    | 25                                       |
| Roadway Improvement Areas                              | 6 Auger<br>24 Auger      | 10<br>6                                  |

The SPT borings will be drilled using truck-mounted drilling equipment and a procedure similar to the Standard Penetration Test outlined in ASTM D-1586. The borings will be sampled at 18-inch intervals to 10 feet deep and at 5-foot intervals below 10 feet. The auger borings will be drilled with a 4-inch diameter, truck-mounted continuous flight auger or a 3-inch diameter, hand-held bucket auger. Each sample will be removed from the auger or sampler in the field and then examined and visually classified by our crew chief.

Representative portions will be sealed and packaged for transportation to our laboratory for further analysis as required. Water level observations will be made in the boreholes during the drilling operation. Upon completion of drilling, the boreholes will be backfilled with soil cuttings.

In addition, four pavement cores will be performed collected within the project limits using a portable coring machine fitted with a 4-inch diameter core barrel. The pavement cores will be performed to a maximum depth of 2 feet below the top of pavement surface. The asphalt cores and samples of the existing base and subbase materials (if present) will be packaged and returned to our laboratory for observation. Maintenance of traffic (MOT) services will be necessary to perform the pavement cores. The MOT services will be provided by a sub consultant that specializes in these types of services. One day of MOT services is included in this proposal.

As requested, we will also install two 2-inch diameter, PVC piezometer wells to maximum depth of 10 feet below existing ground surface at locations on the project site selected by

the Client. The piezometers will be installed using the hand-held bucket auger, the annulus of the borehole will be backfilled with soil cuttings, and a small grout seal will be placed near the ground surface at each piezometer location. The piezometers will be left in place for periodic groundwater level measurements. Our services will include performing initial groundwater level measurements in the piezometers immediately after installation and then additional measurements over a 90-day time frame.

#### *LABORATORY PROGRAM*

Routine laboratory visual classification of the soil samples collected from the borings will be performed by a geotechnical engineer along with specific classification tests deemed necessary (i.e., percent fines, organic content).

#### *ENGINEERING REPORT*

The existing pavement section data, soil stratigraphy data, and groundwater level data collected within the project area will be provided in a written report upon completion of the study. We will also provide estimates of soil effective unit weight, friction angle, and cohesion based on the soil boring results to be used in the design of the drilled shaft foundations.

#### C. Cultural Resource Assessment Survey:

A cultural resources assessment survey (CRAS) will be conducted in compliance with Section 106 of the National Historic Preservation Act (NHPA), Chapter 267.061 of the Florida Statutes (F.S.), Rule 1A-46 of the Florida Administrative Code (F.A.C.), and the conditions and specifications set forth in the Florida Division of Historical Resources (FDHR) Module 3: Guidelines for Use by Historic Preservation Professionals (Florida FDHR 2003). The Principal Investigator will meet the Secretary of the Interior's Professional Qualification Standards (48 FR 44716). The objective of the survey will be to identify archaeological sites and historic resources within the project area and assess their eligibility for listing on the National Register of Historic Places (National Register) per the criteria set forth in 36 CFR Section 60.4.

#### *LITERATURE REVIEW AND BACKGROUND RESEARCH*

A literature and background search for information pertinent to the project area will be conducted to determine the types, chronological placement, and location patterning of archaeological sites within the project area and vicinity. A summary of the project area's archaeological context and pertinent environmental features will be prepared from the results of the background research and literature review. This overview will describe the project area's archaeological record, important events, locations, structures, and individuals associated with the area. The environmental description will include a discussion of both present and past environmental conditions. This information will also provide the context in

which the significance of any archaeological sites identified during the project can be evaluated.

#### *CULTURAL RESOURCE ASSESSMENT SURVEY*

The CRAS will include a pedestrian survey of the project area, subsurface testing for archaeological sites within the project area and the identification and evaluation of historic resources within the project area as well as adjacent parcels up to a distance of 150 feet (ft.) from the edge of the project area to allow for the consideration of potential visual impacts.

#### *ARCHAEOLOGICAL SURVEY*

The archaeological survey will include surface and subsurface testing techniques. The intensity of this testing will be keyed to the ranked site probability zones established during the background Janus Research Page 2 research. Subsurface testing in areas of high site potential will be conducted at approximately 25- meter (80 feet) intervals and in areas of moderate site potential at approximately 50-meter (160 feet) intervals. In addition, at least 10 percent of the low probability areas will be tested at 100- meter intervals in keeping with FDHR requirements. Subsurface tests will be 0.5 meters (20 inches) in diameter and excavated to a minimum depth, subsurface conditions permitting, of one meter (3.3 feet). All excavated soils will be sifted through 6.4-millimeter (0.25-inch) metal hardware cloth screen suspended from portable wooden frames. Any cultural materials recovered will be stored in plastic bags with all provenience data recorded. Field notes on each test performed will be recorded, and the location of all tests will be marked on aerial photographs of the project area. The laboratory processing will consist of the cleaning, inventorying, packaging, and temporary storage of any artifacts recovered. Artifact analysis will involve the morphological and functional classification of artifacts and, if possible, the identification of their temporal and cultural affiliations.

#### *HISTORIC RESOURCES SURVEY*

A historic resource survey will be conducted to evaluate and document the National Register eligibility of the previously recorded resources and to identify and document whether there are any unrecorded significant historic resources within the project area and buffer. From the edge of the project area to allow for the consideration of potential visual impacts. The estimated date of construction, distinctive features, and architectural style will be noted. Digital photographs will be taken, and National Register significance will be evaluated.

#### *DOCUMENTATION AND REPORT PREPARATION*

FMSF forms will be completed for each resource identified during the survey. A report presenting the methods, findings, evaluations, and recommendations of the cultural resource assessment will be prepared. Upon acceptance of the report, Janus Research will

provide a submittal letter, the required submittal package, including a completed Survey Log, mapping, separate electronic FMSF forms, and all necessary documentation to submit the report to State Historic Preservation Officer and the FDHR Compliance and Review Section. If requested, Janus Research will submit the final report and the required submittal package to the SHPO/FDHR on behalf of the client.

*EFFECTS EVALUATION FOR FEC RAILROAD AND DIXIE HIGHWAY*

The significant railroad tracks and Dixie Highway will be documented and effects to the linear resources will be assessed according to the Criteria of Adverse Effects. The assessment of effects documentation typically includes a description of improvements that may indirectly and directly affect the significant resources. The results of this assessment will be included within a Section 106 Case Study Report if needed, and this will be submitted to the State Historic Preservation Officer (SHPO)/Florida Division of Historical Resources (FDHR) for concurrence with the findings.

D. Alignment Study:

The Alignment Study prepared to support evaluating the Aviation Boulevard Extension between US Highway 1 and 36<sup>th</sup> Street, approximately 3,300 linear feet to document the alternative alignments developed and evaluation performed to identify a preferred alignment which addresses the project needs. The scope of improvements will consist of identifying up to three (3) alternative alignments and evaluating their unique characteristics between the limits identified above to meet current County roadway standards relative to lane width, 7-foot bike lane facilities, drainage requirements and Florida Department of Transportation Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Street and Highways. The Corridor Study shall memorialize how the evaluation was performed relative to following five critical factors:

- long-range planning
- public safety
- environmental impacts
- alternative alignments
- cost

The alternative alignments considered were those that maximize the utilization of existing roadway right-of-way, minimized impacts to the environment and resulted in minimized impacts to private property. The Alignment Study shall summarize the project need, discuss the corridors evaluated, and provide a recommendation for the preferred corridor.

*NATURAL RESOURCE ASSESSMENT*

The Consultant will conduct a Natural Resource Assessment (NRA) to identify and evaluate potential impacts to the approximate limits of wetlands and surface waters and upland habitats (including potential sensitive habitats) within the project corridor(s)

and will evaluate the potential for usage by listed species. The Consultant will review previously prepared environmental documentation (if any) and conduct field reconnaissance on-site. In preparing the NRA, the Consultant will conduct the following tasks:

- Review readily available natural resource documentation, previous environmental studies (provided by client), readily available permits and listed species information;
- Review existing GIS databases including the Florida Natural Areas Inventory (FNAI) and the Florida Fish and Wildlife Conservation Commission (FWC) regarding known occurrences of listed species on and near the subject property;
- Review aerial photography, soils maps, and mapping of existing wetland and surface water features;
- Review of FEMA FIRM map;
- Review of Florida Master Site File data for known historic or archaeological resources;
- Conduct site reconnaissance to review the site and ground-truth the findings from the database searches;

Following site reconnaissance and database review, a Technical Memorandum will be prepared summarizing the results of the data collection efforts as well as additional surveys required, if applicable, such as detailed listed species surveys. A summary of federal, state, and local environmental permitting requirements will be prepared as well as a discussion of federal, state and local jurisdiction of environmental features and a brief discussion of potential mitigation requirements. The following exhibits will be prepared:

- A land cover map classifying the habitats on-site based on the Florida Land Use, Cover, and Forms Classification System (FLUCFCS) and showing approximate acreage of each land cover. The acreage of habitats shown will be approximate based on aerial interpretation.
- Wetland/Surface Water Map with approximate boundaries (if applicable)
- USGS 7.5 Minute Quadrangle Map,
- Soils map,
- Location map,
- Listed species map/maps, if applicable.

*ALTERNATIVE ALIGNMENT EVALUATION*

The Consultant will identify up to three (3) alternative alignments to assist in identifying a Preferred Corridor. The corridor(s) will be studied to assist in identifying a preferred alternative to serve the identified purpose and community needs. The corridor(s) will be examined for increase mobility, safety improvements and operational benefits. If a Preferred Corridor is identified, the Consultant will prepare Preliminary Engineering and Design Plans (30% Construction Documents) to support the identified corridor.

*COST EVALUATION*

The Consultant will evaluate cost factors that will be associated with each alternative corridor evaluated. These cost factors will consist of the following:

- Construction
- Right-of-Way Acquisition
- Environmental Impact Mitigation
- Franchise Utility Relocations

**EXHIBIT B – FEE SCHEDULE**

The COUNTY agrees to pay and the Consultant agrees to accept for services rendered pursuant to this Agreement fees inclusive of expenses in accordance with the following:

A. Professional Services Fee

The basic compensation mutually agreed upon by the Consultant and the COUNTY is as follows:

*Lump Sum Components*

| <u>Task</u>                         | <u>Labor Fee</u> |
|-------------------------------------|------------------|
| Corridor Survey                     | \$ 58,686        |
| Cultural Resource Assessment Survey | \$ 43,429        |
| Geotechnical Investigation          | \$ 18,800        |
| Alignment Study                     | \$ 141,140       |
| Project Total =                     | \$ 262,055       |

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**EXHIBIT C – TIME SCHEDULE**

Upon authorization to proceed by the COUNTY, final design documents are expected to take approximately nine (9) months from the Notice to Proceed (NTP).

|                             |                          |
|-----------------------------|--------------------------|
| NTP                         | contingent upon approval |
| Alternative Alignment Study | 9 months following NTP   |

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The COUNTY has selected the Consultant to perform the professional services set forth on Exhibit A (Scope of Work), attached to this Work Order and made part hereof by this reference. The professional services will be performed by the Consultant for the fee schedule set forth in Exhibit B (Fee Schedule), attached to this Work Order and made a part hereof by this reference. The Consultant will perform the professional services within the timeframe more particularly set forth in Exhibit C (Time Schedule), attached to this Work Order and made a part hereof by this reference all in accordance with the terms and provisions set forth in the Agreement. Pursuant to paragraph 1.4 of the Agreement, nothing contained in any Work Order shall conflict with the terms of the Agreement and the terms of the Agreement shall be deemed to be incorporated in each individual Work Order as if fully set forth herein.

IN WITNESS WHEREOF, the parties hereto have executed this Work Order as of the date first written above.

**CONSULTANT:**  
**KIMLEY-HORN AND ASSOCIATES,**  
**INC.**

**BOARD OF COUNTY COMMISSIONERS**  
**OF INDIAN RIVER COUNTY**

**By:** \_\_\_\_\_  
**Brian Good, P.E.**

**By:** \_\_\_\_\_  
**Peter D. O'Bryan, Chairman**

**Title:** \_\_\_\_\_  
**Senior Vice President**

**BCC Approved Date:** \_\_\_\_\_

**Attest: Jeffrey R. Smith, Clerk of Court and Comptroller**

**By:** \_\_\_\_\_  
**Deputy Clerk**

**Approved:** \_\_\_\_\_  
**Jason E. Brown, County Administrator**

**Approved as to form and legal sufficiency:** \_\_\_\_\_  
**Dylan T. Reingold, County Attorney**

Summary

**Project Name**

Aviation Blvd Extension Alternative Alignment Study - US Highway 1 to 35th Lane

**Task Summary**

Manhours for project completion

| <i>Task</i>  | <i>Principle</i> | <i>Senior Professional</i> | <i>Registered Professional</i> | <i>Professional 1</i> | <i>Designer</i> | <i>Support Staff</i> | <i>Remarks</i> |
|--|------------------|----------------------------|--------------------------------|-----------------------|-----------------|----------------------|----------------|
|  | \$240            | \$225                      | \$175                          | \$120                 | \$130           | \$65                 |                |
| <b>Alternative Alignment Study</b>   | 20               | 92                         | 312                            | 240                   | 236             | 24                   |                |
| <b>Total Hours =</b>   | 20               | 92                         | 312                            | 240                   | 236             | 24                   |                |
| <b>Labor Fee =</b>   | \$4,800          | \$20,700                   | \$54,600                       | \$28,800              | \$30,680        | \$1,560              |                |
| <p><i>Sub-Total Fee =</i> \$141,140<br/> <i>Corridor Survey Fee =</i> \$58,686<br/> <i>Cultural Resource Assessment Study =</i> \$43,429<br/> <i>Geotechnical Fee =</i> \$18,800<br/> <i>Total Labor Fee =</i> \$262,055</p> |                  |                            |                                |                       |                 |                      |                |

Activity: Alternative Alignment Study

| Task  | Principle | Senior Professional | Registered Professional | Professional 1 | Designer | Support Staff | Remarks      |
|---|-----------|---------------------|-------------------------|----------------|----------|---------------|--------------|
| <b>Comparative Analysis and Evaluation</b>      |           |                     |                         |                |          |               |              |
| Alternative Alignments                          |           | 10                  | 120                     | 120            | 80       | 8             | 3 alignments |
| Safety Considerations                           |           | 10                  | 20                      |                |          | 4             |              |
| Long Range Planning                             |           | 20                  |                         |                |          | 4             |              |
| Environmental Impacts                           |           | 10                  | 60                      | 80             |          | 8             |              |
| Costs   |           | 10                  | 40                      | 40             |          |               | 3 alignments |
| <b>Preliminary Engineering and Design Plans</b> |           |                     |                         |                |          |               |              |
|   |           | 12                  | 72                      |                | 156      |               |              |
| <b>Public Involvement Meeting</b>               |           |                     |                         |                |          |               |              |
|   |           |                     |                         |                |          |               |              |
|   |           |                     |                         |                |          |               |              |
| QC/QA   | 20        |                     |                         |                |          |               |              |
| Project Management                              |           | 20                  |                         |                |          |               |              |
|   |           |                     |                         |                |          |               |              |
| <b>Subtotal</b>                                 | 20        | 92                  | 312                     | 240            | 236      | 24            |              |