

ENGINEERING SERVICES WORK ORDER 15

This Work Order Number 15 is entered into as of this ___ day of _____, _____, pursuant to that certain Continuing Contract Agreement, dated May 2, 2023, (“Agreement”), by and between INDIAN RIVER COUNTY, a political subdivision of the State of Florida (“COUNTY”) and Kimley-Horn & 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 mutually agreed upon lump sum or maximum amount not-to-exceed professional fee. Any additional costs must be approved in writing, and at a rate not to exceed the prices set forth in Exhibit B of the Agreement (Rate Schedule) for RFQ 2023015, made a part hereof by this reference. The Consultant will perform the professional services within the timeframe more particularly set forth in Exhibit A (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:

By: _____
Name: _____
Title: _____

BOARD OF COUNTY COMMISSIONERS OF
INDIAN RIVER COUNTY:

By: _____

BCC Approval Date: _____

By: _____
John A. Titkanich, Jr., County Administrator

Approved as to Form and Legal Sufficiency:

By: _____
Jennifer W. Shuler, County Attorney

Ryan L. Butler, Clerk of Court and Comptroller

Attest: _____
Deputy Clerk

(SEAL)

EXHIBIT A – SCOPE OF WORK

The County desires to improve 8th Street to a 2-lane rural roadway with paved shoulders between 66th Avenue and 82nd Avenue, approximately 10,560 linear feet. A 10' wide multi-use path along the northern right of way limit will be planned to be integrated into the overall design. The existing right-of-way varies in width between 60 to 95 ft. It is anticipated that either right-of-way acquisition or alternative roadway sections will need to be developed to complete the improvement corridor.

The County owns a parcel in the southeast quadrant of the 8th Street/74th Avenue intersection. This parcel will be evaluated for the purpose of providing a stormwater management facility to serve the roadway improvements.

A. Topographic Design 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 Standards of Practice, established by the Board of Professional Surveyors and Mappers, Chapter 5J-17, Florida Administrative Codes, pursuant to current Section 472.027, Florida Statutes, per 5J-17.050 through 5J-17.052. The survey will include:

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1. Establishment of a project wide Horizontal Control Network within the PROJECT LIMITS. A Design Survey Baseline will be established and monumented. A minimum of five Design Survey Baseline monuments will be installed.
2. Establishment of a project wide Vertical Control Network within the PROJECT LIMITS. All elevations will be referenced to NAVD 1988 datum.

The limits of the topographic design survey are as follows:

8th Street - between 66th Avenue and 82nd Avenue, approximately 10,560 linear feet.
Topographic survey shall extend no less than 20 feet beyond the right-of-way.

B. Geotechnical Investigation:

The Consultant will retain the services of a Geotechnical sub-consultant to assist in evaluating the existing soil and roadway pavement conditions. The Geotechnical sub-consultant will provide the following Geotechnical Services:

The field program will include conducting three (3) Standard Penetration Test (SPT) borings to 25 feet (pond site) and five (5) auger borings to 10 feet at accessible locations to our truck-mounted drill rig. We will also conduct 45 hand auger borings to 6 feet at the vicinity of the locations provided by the engineer. The SPT borings will be drilled using a procedure similar to the Standard Penetration Test outlined in ASTM D-1586 and will be sampled at 18-inch or 24-inch intervals to 10 feet deep and at 5-foot intervals below 10 feet. The auger borings will be drilled to a depth of 10 feet below existing ground surface at the requested locations and will be performed using a 4-inch diameter, truck mounted continuous-flight auger. The hand auger borings will be performed using a 3-inch diameter, hand-held bucket auger.

Each sample will be removed from the sampler or auger in the field and then examined and visually classified by 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.

We will also perform a series of muck probes within the existing canal on the north and south sides of the 8th Street between 66th Avenue and 82nd Avenue that may be incorporated in the proposed roadway improvements. The muck probes will be performed by pushing a steel rod into the ground and measuring the approximate thicknesses of accumulated soft sediment at the bottom and sides of the canals.

We will also install six (6) piezometer wells by inserting slotted 2-inch diameter PVC well casings within the completed boreholes and backfilling the annulus with soil cuttings. Each well would be installed using a 3-inch diameter, hand-held bucket auger to a maximum depth of 10 feet below existing ground surface. The locations for the piezometer wells will be selected by the client. Also, the piezometers standing above the existing ground surface will be painted orange or red.

The groundwater level will be measured and recorded within the piezometers once per week for a period of 90 days. We recommend that the project surveyor locate our boring/well locations horizontally and vertically (i.e., determine the elevation of the ground surface at the boring locations). This information will increase the accuracy of the data obtained.

In addition, six South Florida Water Management District (SFWMD) exfiltration tests will be performed to obtain soil hydraulic conductivity values for others to use in the design of stormwater facilities. The exfiltration test will be performed in accordance with the methods described in the SFWMD Permit Information Manual, Volume IV.

LABORATORY TESTING

Routine laboratory visual classification will be performed along with specific classification tests deemed necessary (i.e., percent fines). All laboratory tests will be performed in general accordance with applicable ASTM standards.

ENGINEERING REPORT

Soil stratigraphy and groundwater level data collected during the exploration will be presented in a written report upon completion of the study. We will provide a general discussion of the drainage characteristics of the soils encountered, an estimate of the normal seasonal high groundwater level at the boring/piezometer locations, and the hydraulic conductivity test results at the requested boring locations.

C. Construction Documents:

The Construction plan set shall consist of the following:

PHASE SUBMITTALS	30%	60%	90%	100%
Cover Sheet (Location map, Project Length, Engineer of Record)	P	C	F	F
General Notes	P	C	C	F
Summary of Pay Items/Quantities	P	P	C	F
Horizontal and Vertical Control Sheets (Benchmarks, Reference Points, Section Corners)		C	C	F
Project Layout	P	C	C	F
Plan & Profile Sheets (40 scale)	P	C	C	F
Cross Sections at approximately 100 ft intervals, extending 10' beyond proposed right-of-way (1"=5' Vertically, 1"=20' Horizontally)		C	C	F
Special Details		P	C	F
Signage & Pavement Marking Plans (40 scale) Included in Plan Sheets	P	P	C	F
Construction Cost Estimate and Quantities	P	C	C	F

Notes: P – Preliminary, C – Complete, but subject to change, F - Final

General Construction Plan Requirements:

1. Plans shall be prepared on 11" x 17" sheets.
2. Each phase submittal shall include drawings in PDF format.
3. Plan sheets shall depict existing right-of-way, section lines, property lines, and

centerline of construction. Horizontal control points with state plane coordinates for all PC's, PT's, curve radius, curve length and horizontal PI's shall be included on the Plan or summarized in an alignment table.

4. Plans shall include spot grades adequate to describe any proposed grading.
5. Match lines shall not be located within the limits of an intersection.
6. All quantities shall reference FDOT Pay Item Numbers.
7. All details shall reference FDOT Index Numbers.
8. All specifications shall reference to FDOT Specifications for Road and Bridge Construction. Any deviations are special specifications not included in FDOT Specifications are required in the Technical Specifications.
9. Initial (30% completion), preliminary (60% completion), interim (90% completion) and Final Plan (100% completion) Submittal shall include the following:
 - i. One (1) set of drawings in PDF format.
 - ii. One (1) Opinion of Probable Construction Cost

The plans will be prepared based upon English units. Final design files will be submitted in AutoCAD format.

D. Signing and Pavement Marking Plans:

Signing and Pavement Markings will be included within the Roadway Plan set. Quantities will be provided in the Summary of Pay Items sheet. All signing and pavement markings are to be prepared in accordance with the latest design standards and practices (MUTCD), FDOT Standard Specifications, Indexes, and shall be accurate, legible, and complete in design.

E. Drainage Design:

The Consultant will perform drainage investigations and analysis necessary to prepare a design which will drain the project in accordance with Indian River County, St. Johns River Water Management District (SJRWMD) and Indian River Farms Water Control District (IRFWCD) design criteria. The Consultant will assist the County with the submittal of the permit applications, coordination and supporting documentation for the project to the following agencies:

- Indian River County Public Works
- St. Johns River Water Management District
- Indian River Farms Water Control District

A Stormwater Pollution Prevention Plan (SW3P) will be developed in conjunction with this project.

F. Jurisdictional Permitting:

The Consultant shall prepare jurisdictional permit applications necessary to support the proposed improvements. The following agencies are anticipated to require applications/review to facilitate the proposed improvements:

- Saint Johns River Water Management District (SJRWMD) – Environmental Resource General Permit
- Indian River Farms Water Control District (IRFWCD) – Connection Permit
- Florida Department of Environmental Protection (FDEP) – State 404 Program Permit

The County will be responsible for all permit application fees and any mitigation bank costs necessary to mitigate potential environmental impacts, if necessary.

G. 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.

EXHIBIT C – TIME SCHEDULE

Upon authorization to proceed by the COUNTY, final design documents are expected to take approximately eighteen (18) months from the Notice to Proceed (NTP).

NTP	contingent upon approval
30% Plan Submittal	6 months following NTP
60% Plan Submittal	12 months following NTP
90% Plan Submittal	15 months following NTP
100% Plan Submittal	18 months following NTP

Summary

Project Name

8th Street Roadway Improvements - 66th Avenue to 82nd Avenue

Task Summary

Manhours for project

Task	Prnciple	Senlor Professional	Reglstered Professional	Professional 2	Deslgnr	Support Staff	Remarks
	\$300	\$270	\$210	\$160	\$165	\$75	
Design Analysis	64	192	20	300	60	36	
Construction Plans	68	90	602	569	645	12	
Drainage Design and Permitting	12	52	200	240	40	32	
Natural Resource Assessment	8	4	0	88	20	6	
Signng and Markng Plans	12	12	66	41	50	0	
Total Hours =	164	350	888	1238	815	86	
Labor Fee =	\$49,200	\$94,500	\$186,480	\$198,080	\$134,475	\$6,450	
<p><i>Sub-Total Fee =</i> \$669,185 <i>Reimbursible Expenses =</i> \$20,076 <i>Design Topo Fee =</i> \$43,500 <i>Geotech Fee =</i> \$20,800 Project Total Fee = \$753,561</p>							

Design Analysis

Activity: Design Analysis / Review

Task	Principle	Senior Professional	Registered Professional	Professional 1	Designer	Support Staff	Support Staff
Contract File	4					4	
Cost Estimate		40		80			Cost est. conducted at 30%, 60%, 90% and 100%
Coordination							
County	40	80		60		20	Three review submittals to County
Survey	8	16		20		6	
Geotech	8	16		20		6	
Field Review		40		40			Site Visits - Multiple
Computation Book & Quantities			20	80	60		
QC/QA							
Project Management	4						
Subtotal	64	192	20	300	60	36	

Construction Plans

Activity: Roadway Plans

Task	Principle	Senior Professional	Registered Professional	Professional 1	Designer	Support Staff	Clerical
Cover Sheet				2	4		
General Notes Sheet		4		4	4		1 sheet
Summary of Quantities Sheet		4	20	40	40		3 sheet
Horiz/Vert Control Sheet			8	16			
Typical Sections							
<i>8th Street</i>	8		12	12	24		assumes two sections
Plan Sheets							
<i>8th Street</i>		39	308	193	231		22 sheets @ 35 hrs/ sht
Cross Sections							
<i>8th Street</i>		19	154	96	116		100 ft Sections (110) @ 4.0 hrs / x-sect
Erosion Control Plans							
<i>8th Street</i>			20	46	66		11 sheets @ 12 hrs / sht
Franchise Utility Coordination			20	40	40	12	
Miscellaneous Const. Details			20	40	40		
Stormwater Management Facility		20	40	80	80		
QC/QA	60						
Project Management		4					
Subtotal	68	90	602	569	645	12	

Activity: Drainage Design and Permitting

Task	Principle	Senior Professional	Registered Professional	Professional 1	Designer	Support Staff	Remarks
Drainage Design							
<i>8th Street Report</i>		20	140 60	140	40	16	
St Johns River Water Management District		20		60		8	
Indian River Farms Water Control District		8		40		8	
QC/QA	12						
Project Management		4					
Subtotal	12	52	200	240	40	32	

Activity: Natural Resource Assessment

Task	Principle	Senior Professional	Registered Professional	Professional 1	Designer	Support Staff	Remarks
Natural Resource Assessment							
<i>document review</i>				20		6	
<i>endangered species</i>				16			
<i>wetlands</i>				20	20		
<i>Florida Master Site Data - archaeological</i>				16			
<i>site visits</i>				16			
QC/QA	8						
Project Management		4					
Subtotal	8	4	0	88	20	6	

Activity: Signing and Marking Plans

Task	Principle	Senior Professional	Registered Professional	Professional 1	Designer	Support Staff	Remarks
Signing and Marking Plans							
<i>8th Street</i>		8	66	41	50		11 sheets @ 15 hrs / sht
QC/QA	12						
Project Management		4					
Subtotal	12	12	66	41	50	0	

Kimley-Horn
445 24th Street, Suite 200
Vero Beach, FL 32960

Attention: Mr. Brian Good, P.E.

**Subject: Proposal for Subsurface Exploration and
Groundwater Table Measurements
8th Street Roadway Improvements
From 66th Avenue to 82nd Avenue
Vero Beach, Florida**

Dear Mr. Good:

As requested, we are pleased to present the following proposal for performing a subsurface exploration, installing piezometer wells, and collecting groundwater table measurements for the subject project. We understand that the project involves the roadway improvements along 8th Street starting from 66th Avenue to 82nd Avenue. The purpose of this work is to obtain general subsurface soil stratigraphy and groundwater level data to be used by the Client in designing the proposed stormwater improvements.

The following summarizes our proposed scope of work and associated fees for conducting the subject exploration that was requested.

FIELD EXPLORATION

Our field program will include conducting three Standard Penetration Test (SPT) borings to 25 feet and five auger borings to 10 feet at accessible locations to our truck-mounted drill rig. We will also conduct 45 hand auger borings to 6 feet at the vicinity of the locations provided by the client. The SPT borings will be drilled using a procedure similar to the Standard Penetration Test outlined in ASTM D-1586 and will be sampled at 18-inch or 24-inch intervals to 10 feet deep and at 5-foot intervals below 10 feet. The auger borings will be drilled to a depth of 10 feet below existing ground surface at the requested locations and will be performed using a 4-inch diameter, truck-mounted continuous-flight auger. The hand auger borings will be performed using a 3-inch diameter, hand-held bucket auger.

Each sample will be removed from the sampler or auger in the field and then examined and visually classified by 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.

We will also perform a series of muck probes for two days within the existing canal on the north and south sides of the 8th Street between 66th Avenue and 82nd Avenue that may be incorporated in the proposed roadway improvements. The muck probes will be performed by pushing a steel

rod into the ground and measuring the approximate thicknesses of accumulated soft sediment at the bottom and sides of the canals.

We will also install six piezometer wells by inserting slotted 2-inch diameter PVC well casings within the completed boreholes and backfilling the annulus with soil cuttings. Each well would be installed using a 3-inch diameter, hand-held bucket auger to a maximum depth of 10 feet below existing ground surface. The locations for the piezometer wells will be selected by the client. Also, the piezometers standing above the existing ground surface will be painted orange or red.

The groundwater level will be measured and recorded within the piezometers once per week for a period of 90 days. We recommend that the project surveyor locate our boring/well locations horizontally and vertically (i.e., determine the elevation of the ground surface at the boring locations). This information will increase the accuracy of the data obtained.

In addition, six South Florida Water Management District (SFWMD) exfiltration tests will be performed to obtain soil hydraulic conductivity values for others to use in the design of stormwater facilities. The exfiltration test will be performed in accordance with the methods described in the SFWMD Permit Information Manual, Volume IV.

LABORATORY TESTING

Routine laboratory visual classification will be performed along with specific classification tests deemed necessary (i.e., percent fines). All laboratory tests will be performed in general accordance with applicable ASTM standards.

ENGINEERING REPORT

Soil stratigraphy and groundwater level data collected during the exploration will be presented in a written report upon completion of the study. We will provide a general discussion of the drainage characteristics of the soils encountered, an estimate of the normal seasonal high groundwater level at the boring/piezometer locations, and the hydraulic conductivity test results at the requested boring locations.

COST ESTIMATE

The costs associated with the aforementioned tasks will not exceed **\$20,800.00** without prior authorization from the client. *If any piezometers are broken by others (mowers, pedestrians, etc.) during the project time, the client agrees to pay \$450.00 per well for the installation of new well.*

CLOSURE

This proposal is subject to the following conditions: (1) access to boring and piezometer locations is to be readily available to our drill rig and field personnel, (2) the provided scope of work will be adequate, (3) no Maintenance-of-Traffic (MOT) will be required, and (4) Ardaman & Associates, Inc. will coordinate the location of underground utility lines through SSOCOF. We cannot take responsibility for damages to private underground lines or structures and/or underground services which do not subscribe to SSOCOF; their locations should be provided by the client prior to commencement of the field work.

We appreciate the opportunity to submit this proposal and look forward to working with you on this project. Please issue the Purchase Order that will be assigned to this project or complete and return the attached Proposal/Project Acceptance and Agreement form as an indication of your acceptance of our proposal terms and authorization to proceed with the work.

Please do not hesitate to contact our office should you have any questions concerning this proposal or whenever we may be of assistance to you.

Sincerely,

ARDAMAN & ASSOCIATES, INC.



Sharmila Pant, P.E.
Project Engineer



Mark Zrallack, P.E.
Branch Manager