**WORK ASSIGNMENT NO. 2019-05ENG PURSUANT TO THE NOVEMBER 30, 2016 AGREEMENT BETWEEN THE CITY OF VENICE, FLORIDA AND ATKINS NORTH AMERICA, INC.**

WHEREAS, on November 30, 2016, the City of Venice, Florida ("OWNER") and ***Atkins North America, Inc.*** ("CONSULTANT"), entered into an Agreement whereby the CONSULTANT would perform professional services for the OWNER pursuant to an executed Work Assignment; and

WHEREAS, the OWNER wishes to authorize the CONSULTANT to perform professional services concerning the **Capri Isles Bridge Replacement** *as* more particularly described in the Scope of Services herein; and

WHEREAS, the CONSULTANT wishes to perform such professional services,

NOW THEREFORE, in consideration of the premises and mutual covenants contained in the November 30, 2016, Agreement and this Work Assignment, the parties agree as follows:

1. **General description of the Project**. CONSULTANT will provide Professional Engineering Services for Final Design and Permitting for the Capri Isles Bridge Replacement, and associated Roadway, Pedestrian, and Utility Improvements.
2. **Scope of services to be performed**. CONSULTANT shall perform the services described in the Scope of Services attached hereto as Attachment "A".
3. **Compensation to be paid**. OWNER shall pay the CONSULTANT the sum of Three Hundred Fourteen Thousand Seven Hundred Sixty-Seven ($314,767) Dollars for performance of the professional services specified in this Work Assignment.
4. **Time for completion**. CONSULTANT shall complete the professional services specified in this Work Assignment (30% through Final Design Phase) within Seven Months (212 Calendar Days) from the date of written approval of this Work Assignment (assumes 14-day review periods by the OWNER).
5. The terms and conditions of the November 30, 2016, Agreement shall remain in full force and effect until the completion of this Work Assignment.

**IN WITNESS WHEREOF**, the parties have executed this Work Assignment on the 27 day of November, 2018.

**ATKINS NORTH AMERICA, INC.**

**By:** _____
**Charlotte Maddox, PE, Vice President**

Approved By City Council
Date: 11/27/2018

**CITY OF VENICE, FLORIDA**

**By:** _____
**Mayor**

**ATTEST:**

_____
**City Clerk**

# ATTACHMENT A

SCOPE OF SERVICES
ENGINEERING/PROFESSIONAL CIVIL ENGINEERING CONSULTING SERVICES
AGREEMENT NO. (RFQ #3032-16)
WORK ASSIGNMENT NO. 2019-05ENG
Capri Isles Bridge Replacement and Associated
Roadway, Pedestrian, and Utility Improvements
Final Design and Permitting
November 12, 2018

**Background** – The OWNER, desires to replace the Capri Isles Bridge (No.176001) over Curry Creek. This bridge has deteriorated since being constructed in 1971, as evidenced by significant sized spalls, cracks and exposed strands on the piles noted in the 2016 Bridge Inspection report. Overall the piles are in poor condition and if continued to be left unrepaired, the corrosion and section loss will continue to advance and could result in a critical situation. An Evaluation Report was prepared by the CONSULTANT, in May 2018, which recommended bridge rehabilitation to extend the design life of the bridge 15-20 years. However, the report also evaluated replacing the bridge with a single or double span bridge. Due to funding availability, the OWNER has decided to move forward with replacing the bridge. The initial phase will include a more detailed hydraulic analysis and cost comparison of the bridge replacement options. In this Work Order, CONSULTANT will prepare final design construction plans and permitting documents. The professional engineering and consulting services for this project include:

- Final Design and Permitting
- Survey Data Collection
- Geotechnical Data Collection
- Utility Coordination and Data Collection (SUE)
- Bridge Design
- Roadway, Sidewalks and Drainage Design
- Utility Design
- Limited Post-Design Services (during bidding and construction phases)

**Work Progress Outline**

I. Final Design, Plans Preparation and Permit Application Preparation
   A. CONSULTANT will prepare a FEMA No-Rise Report to analyze and finalize the recommended bridge alternative.
   B. CONSULTANT will develop the final design of bridge, roadway, sidewalk, and utility improvements within the bridge limits located approximately one mile north of Venice Avenue on Capri Isles Boulevard.
   C. A topographic design survey will be collected by a subconsultant to the CONSULTANT to provide a suitable base map and for design development and plans preparation.
   D. A Geotechnical data collection and investigation will be performed by a subconsultant to the CONSULTANT to determine and make recommendations regarding the proposed bridge replacement and/or other roadway rehabilitation.

E. CONSULTANT will prepare construction plans for review by the OWNER at the 30%, 60%, and 100% phases and work with OWNER staff to resolve any comments. Upon resolution of any 100% comments, Final Plans (signed/sealed) will be provided to the OWNER for bidding purposes.
F. CONSULTANT will perform Utility Coordination with utility owners along the corridor to coordinate required utility relocations. The utility owners, other than OWNER, would be responsible for preparing relocation design plans (if required). A subconsultant to the CONSULTANT will perform surface utility designations, subsurface utility locations, and SUE survey services
G. The CONSULTANT will prepare Utility relocation plans and permits for the OWNER's Facilities requiring relocation due to the bridge replacement.

II. Bid Assistance and Post-Design Services
A. CONSULTANT may participate in the pre-bid meeting for the project, answer questions requiring clarification for proper bidding, and may review the bid tabulations and provide a letter to the OWNER regarding a review of the bids.
B. During the construction phase, CONSULTANT can provide post-design services which may include: attendance at the pre-construction meeting, review of shop drawings, responding to requests for information (RFI's), performing no more than 2 site visits during construction and providing the as-built certifications required by SWFWMD as part of the ERP permitting
C. Services during construction do not include full-time resident CONSULTANT and inspection services.
D. Services do not include any topographic survey services or testing services during construction.
E. The extent of the post design services under this contract are limited.
F. No record drawings or agency certifications, other than the ERP permitting certification, are included in the post design phase

**SECTION 1 – APPLICABLE STANDARDS**

All construction details and designs furnished by the CONSULTANT are to be prepared with English Units. The current editions at the time this agreement is executed, of the following manuals and guidelines shall be used as resources and reference materials in the performance of CONSULTANT's work:

- Manual of Uniform Minimum Standards for Design, Construction, and Maintenance of Streets and Highways, Florida Department of Transportation (FDOT), 2016 (Florida Green Book)
- SWFWMD, Environmental Resource Permit Applicant's Handbook, effective October 1, 2013
- Sarasota County Land Development Regulations.
- FDOT Standard Plans for Road and Bridge Construction
- FDOT Standard Specifications for Road and Bridge Construction
- FDOT Basis of Estimates Manual
- FHWA Manual on Uniform Traffic Control Devices (MUTCD)
- FDOT Design Manual
- FDOT Drainage Manual
- FDOT Drainage Design Guide
- FDOT Structures Manual
- 2010 ADA Standards for Accessible Design

Listing of the above reference materials and resources is not intended to solely establish design standards or criteria to be used on this project. Selection of appropriate standards and criteria for design of roadway and bridge elements is influenced by several factors including, but not limited to, traffic volume and composition, governmental policies, rules and regulations, desired levels of service, terrain features, roadside developments, existing conditions, environmental considerations, budgetary constraints, and other individual characteristics of the existing conditions.

## SECTION 2 – ELECTRONIC FILES

In addition to the number of copies at each submittal phase, the CONSULTANT shall provide electronic files of all drawings, reports, and specifications. Adobe format (PDF) documents will also be provided with all submittals. Final drawings will be in AutoCAD Format.

The OWNER is aware that differences may exist between the electronic files delivered and the hard-copy construction documents. In the event of a conflict between the signed and sealed construction documents prepared by the CONSULTANT and the electronic files, the signed and sealed hard-copy construction documents shall govern. Every effort will be made to match electronic files with signed and sealed hard copies. As part of the record documents, the CONSULTANT shall ensure paper and electronic versions match and are submitted to the OWNER.

## SECTION 3 – BASIC PROFESSIONAL SERVICES

The tasks set forth in the Basic Services as listed in Section 3 of this Scope of Services are used to apportion the total staff hours required to prepare the complete design and construction documents for this project across the various tasks. Additional assumptions are shown on the detailed Estimate of Work Effort and Cost Worksheet used to develop the staff hours and associated fee.

### 3.01 Project Management and General Tasks

**Project Management** – Atkins's Project Manager will be responsible for all aspects of this Work Order as they relate to schedule, deliverables, and quality control.

A. **Contract Management/Coordination** – CONSULTANT will coordinate with the OWNER's Project Manager on a bi-weekly basis to provide updates on progress.

B. **Meetings** – The CONSULTANT will perform an initial field review meeting with the City to review existing conditions. The CONSULTANT shall attend (2) meetings with the OWNER for project review and coordination at 30% and 60% Review Coordination Meetings with the OWNER. The CONSULTANT may also attend 2 additional meetings with the OWNER or other local government.

C. **Public Involvement** – CONSULTANT will participate in up to two (2) City Council meetings. The CONSULTANT will prepare meeting graphics consisting of a colored bridge concept plan and a before/after computerized image depicting the proposed bridge. No other graphics are anticipated to be required other than proposed construction plans.

D. **OWNER Coordination and Review** – The OWNER shall provide any available plans, sketches, markups to assist in the location or identification of existing right of way, existing underground utilities, existing bridge design, and existing pavement design. The CONSULTANT shall prepare and submit Construction Details for OWNER review for comments at each submittal phase (30%, 60%, and 100%). The OWNER will review the details and prepare comments on the CONSULTANT's design. The CONSULTANT shall provide responses to the OWNER's comments, via e-mail or letter, no later than fourteen (14) calendar days after receiving the comments.

E. **FDOT Electronic Review Plans Submittal** – The project funds are administered by the FDOT (State of Florida), project plans, specifications and estimates (PSE) submittals will be prepared and submitted at the 60% and 100% phases for FDOT Review. The CONSULTANT will respond to comments made by the FDOT.

F. **Project Scheduling and Progress Reports** - The CONSULTANT shall prepare an overall project schedule. The schedule will be provided to the OWNER in electronic format and on paper in a readable scale within ten (10) days of the notice to proceed. The CONSULTANT shall provide the OWNER an updated schedule to reflect actual project progress and monthly project progress reports by email to OWNER personnel monthly (or as invoiced). This schedule will only include the design phase. No scheduling services during post design are included.

G. **Utility Coordination** - Any available record plan data provided to the CONSULTANT by the OWNER or the utility agency owners (UAO) will be used. The CONSULTANT will send out the 30%, 60% and 100% plans to the UAO's for utility coordination and will hold one (1) utility coordination meeting. Utility relocation may be required, utility relocation design to be performed by the individual UAO. The CONSULTANT will show proposed relocations (designed by others) on the roadway plan. These services do include performing survey locating or subsurface utility engineering (SUE).

Utility Coordination Meeting – A utility coordination meeting will be established, through coordination with the OWNER on the date, location and potential UAO's. The CONSULTANT will hold a utility coordination meeting for the purposes of identifying potential conflicts and possible resolution by the UAO's. The CONSULTANT will prepare meeting minutes and within fourteen (14) calendar days distribute to the OWNER and UAO's. The UAO's will be responsible for designing their potential relocations and for providing to the CONSULTANT their plans for any necessary relocations.

H. **SWFWMD ERP Permit Application** - the proposed bridge and roadway reconstruction improvements would be included in the ERP permit application. Preparation of engineering and environmental materials for a SWFWMD environmental resource permit modification will be included as part of this scope. The ENGINEER shall prepare and submit, after the OWNER 60% review. The CONSULTANT will address SWFWMD requests for additional information or clarification to the application package.

I. **USACE Nationwide Permit Application** - the proposed bridge and roadway reconstruction improvements would be included in the Nationwide permit application. Preparation of engineering and environmental materials for a USACE Nationwide permit will be included as part of this scope. The ENGINEER shall prepare and submit, after the OWNER 60% review. The CONSULTANT will address USACE requests for additional information or clarification to the application package.

J. **Specification Package** - It is assumed that the OWNER will prepare the front-end specification package and the CONSULTANT will provide technical review support and complete any technical specification needed that is not addressed in the standard FDOT specifications or project specifications.

**Project Management and Permitting Deliverables**:

- Project Schedule in a readable scale;
- Monthly project progress reports with proposed schedule for upcoming period;
- Minutes of each meeting distributed to each attendee and others as requested by the OWNER no later than seven (7) calendar days after the meeting;
- Written responses to OWNER comments at each design submittal stage via email or letter, no later than fourteen (14) calendar days after receiving the comments.

## 3.02 Survey and SUE Data Collection

### 3.02.1 Topographic Survey Services

A. Topographic Survey of the Capri Island Bridge (176001) from 350' south of the south edge of the bridge to 350' north of the north edge of the bridge. From 10' west of the west apparent right of way to 10' east of the east apparent right of way.

B. Topographic features to include, but not limited to, a 50-foot grid, visible sanitary sewer structures, drainage features (includes location pipe and structure sizes, tops, grates throats, weirs and invert elevations) concrete walls, sidewalks, asphalt/concrete surfaces, lane lines, trees 6" diameter and greater, planters, hedges and above ground utility features.

C. Bridge deck, sidewalk and railing will be the only bridge features located.

D. Locate right of way based on field monumentation, recorded plats, county records and a title search report.

E. Establish an arbitrary survey line, monument and reference the beginning and end.

F. Expected vertical accuracies of hard shots on pavement will be 0.05 feet and ground shots will be 0.20 feet.

G. Elevations shall be collected in sufficient density to create an accurate digital terrain model.

H. Project Horizontal Datum shall be Florida State Plane Coordinate System, Transverse Mercator Projection, West Zone (0902), North American Datum of 1983, Adjustment of 2011

I. Project Vertical Datum shall be relative to NAVD 1988.

**Topographic Survey Services Exclusions**

The following items are specifically excluded from the above Basic Scope of Services:

1. Filing fees, prints, or any other out of pocket expenses other than those specifically included.
2. Any work associated with securing permits other than those specifically included.
3. Any work associated with the handling of hazardous materials.
4. A title search will not be performed this survey.
5. Any work associated with location of potable or reclaimed water service lines, gravity sanitary sewer service lines or laterals.
6. Any work associated with vertical location of the overhead utility lines.
7. Any work associated with any survey tasks not mentioned above.

### 3.02.2 Hydrographic Survey Services

A. Four creek cross sections, two on either side of the bridge and one, one hundred feet on each side of the bridge

### 3.02.3 Surface Utility Designation, Subsurface Utility Location, and SUE Survey Services

A. Provide traffic control as needed within the work areas while designating the subsurface utilities. Traffic control is to be maintained in accordance with applicable standards. Provide safety devices, signs and/or other safety equipment as appropriate.

B. ASCE Quality Level B - Utilizing conventional electronic designating equipment and including Ground Penetrating Radar (GPR), designate and mark the horizontal location of selected found underground utility lines from 100' north of the bridge to 100' south of the bridge (excepting those within the creek bed) from ROW to ROW.

C. ASCE Quality Level A - Provide a single test hole (VVH-verified vertical and horizontal) on each found target utility line at or as near as reasonably possible to the bridge approaches. For each test hole, neatly cut and remove existing pavement or other surface material (not to exceed 225 square inches per cut). Excavate the material through the cut down to the utility in a way that prevents damage to wrappings, coatings or other protective coverings of the utilities (i.e. vacuum/pressure excavations, hand digging, etc.). Backfill and compact with select material around the utility. Provide a restoration of the surface pavement, within the limits of the cut, at the time of the backfill.

D. GFY to survey collect found utility information and add to the Topographic Survey, together with a copy of field notes (electronically) and a Surveyor's Report.

***Utilization of the above equipment and methods is the industry recognized procedure for finding and locating underground utilities and features. Although effective and reliable, there is the possibility that all utilities may not be detected due to environmental conditions, soil conditions, water table, excessive depth, and/or feature makeup.***

## 3.03 Geotechnical Data Collection

Geotechnical data collection includes exploring the soil stratigraphy adjacent to the north end and south end of the bridge, and providing foundation support recommendations for shallow foundations (i.e. the end bents supported on footings) and also pile capacities and recommendations. The following details the scope of work for conducting the subject exploration:

A. Conducting two (2) Standard Penetration Test borings to a depth of 60 feet below existing ground surface at the proposed bridge. Routine laboratory visual classification will be performed along with specific classification tests deemed necessary (i.e., percent fines and organic contents).

B. Two full-depth pavement cores, one on each end of the bridge. At each location, services will include: maintenance of traffic, performing a hand auger boring (total of two) to a depth of six feet below the existing pavement surface, measuring thickness of the asphalt surface, visually identifying base type and thickness, and visually identifying the subbase (stabilized subgrade) type and thickness. Upon completion of each core, the core will be patched with an asphalt "cold patch."

C. One (1) sample of the channel water will be collected by an environmental technician. A chemical analysis for the following parameters will be performed: chloride, pH andresistivity (corrosivity series).

D. Existing channel bottom samples will be collected at four (4) locations. These will be used to determine the grain size distribution by sieve analysis, for use in determining the D-50 of the samples.

E. Engineering and technical support services to analyze the obtained data and to prepare an engineering report for the proposed bridge. This report would present the results of our findings and analyses. The report would include allowable axial capacities of several pile sizes/depths (up to 3 analyses total) calculated from the FBDeep program, as well as recommendations regarding pile design. Recommendations will also be included in the report for a shallow foundation option for the end bents (GRS-IBI system), in lieu of pile supported.

Geotechnical Services Assumptions:

1. Access to boring locations is to be readily available to our truck-mounted drilling equipment.
2. The proposed number of borings and the boring depths will be adequate.
3. Undisturbed samples and consolidation tests on fine grained soils are not budgeted into the total cost.
4. Maintenance of traffic is not required to perform the field work.
5. Exploration or evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface is not included.

### 3.04 Final Design and Permitting Services

CONSULTANT will provide final design drawings for the construction of the above project. Professional services shall include:

### 3.04.1 Design Services

A. Develop construction details utilizing FDOT 2018-2019 Design Standards.

B. Assist the OWNER with the development of Construction Documents including constructions details and specifications in accordance with applicable current FDOT design criteria

C. Quantity Take-Offs - The CONSULTANT shall prepare preliminary quantities at 30% and 60% and takeoffs at 100%. Quantities and pay items will be modified in accordance with the plans development phase and include revisions from OWNER comments during the plans review phases. The CONSULTANT shall avoid the use of lump sum pay items as much as possible.

1. Prepare CONSULTANT's Estimate for Construction Cost (at 30%, 60%, 100%) spreadsheet (in lieu of a Summary of Quantities Plan Sheet).

### 3.04.1 Roadway and Drainage Services

A. The roadway construction details will include: key sheet, drainage map, typical sections and details for the proposed roadway improvements, general note sheet, drainage map, plan sheets, profile sheets, intersection grading, cross-sections, miscellaneous construction details (items not addressed in FDOT Design Standards), cross-sections, traffic control plans and details, miscellaneous drainage detail sheets, erosion control plan, stormwater pollution prevention plan, boundaries of jurisdictional wetlands and surface waters, and signing and pavement marking details.

Roadway and Drainage Design Assumptions:

1. The bridge will be replaced with a single or double span configuration. The CONSULTANT will provide a detailed hydraulic analysis and cost comparison of the bridge replacement options at the 30% design. This analysis shall include a FEMA No-rise analysis to support the selected bridge pier arrangements.
2. The roadway design will include a traffic control plan to develop construction phasing and traffic re-routing during construction by utilizing road closures and detours.
3. The existing concrete sidewalks along the project limits are to remain except for those slabs that are cracked as determined by an initial field review with the CONSULTANT and the

OWNER. Also, those sidewalks at existing curb ramps and pedestrian crossings that are not compliant with current ADA requirements would be removed and replaced as well.

4. The plans development phases (30%, 60%, and 100%) will generally follow the FDOT Design Manual process. The 30% submittal phase will be an abbreviated plan submittal and would only consist of a concept plan sheet (1"=100') and typical sections to show the project limits and elements (in general and not in plan detail).
5. Additional right-of-way, sketches, and descriptions if required are to be obtained by the OWNER as needed and are not included in the CONSULTANT'S scope of work.

### 3.04.2 Permitting Services

The ENGINEER shall develop an Alternatives Analysis Technical Memorandum to support the Least Environmentally Damaging Alternative, as depicted in the permit application. This Technical Memorandum will provide analysis and evaluation of the alternatives considered and the alternative selected for permitting. Analysis and evaluation will utilize current and readily available GIS database information supplemented by field verification. Resources and issues to be analyzed and evaluated include:

- Land use
- Relocations and ROW
- Wetlands
- Threatened and endangered species occurrence and potential habitat
- Determination of presence/absence of roosting bats

### 3.04.3 Bridge Design Services

A. The bridge construction details will include: key sheet, bridge profile and elevation, details for bridge improvements, general note sheet, bridge hydraulic sheet, and miscellaneous details.

Structures Design Assumptions:

1. Structures design will be in accordance AASHTO LRFD Bridge Design Specifications and as modified and/or supplemented by the FDOT Structures Manual.
2. The structures design will consider various structure solutions to minimize construction schedule and costs.
3. The bridge site will be closed to through-traffic during reconstruction to eliminate construction phasing and maintenance of traffic will be accomplished via detours.
4. Existing water monitoring equipment will be removed and reattached to the new structure by others.
5. The structures plan development phases (30%, 60%, and 100%) will generally follow the FDOT Design Manual process. The 30% submittal phase will be an abbreviated plan submittal to the OWNER to present the structure alternates for discussion, selection and development to final plans. Additionally, in the 30% plans development phase the CONSULTANT will provide construction cost analysis for the entire project to determine the most cost-effective design solution. The 60% and 100% plans will be submitted to both the OWNER and the FDOT for review and comment.
6. An estimate for Post Design Services will be provided after a design alternative has been determined.
7. The following items are not anticipated and will not be provided:
    a. Retaining walls (however, gravity walls may be considered)
    b. Technical Special Provisions
    c. Supports for utilities attached to the structure (existing utilities to be relocated)

## 3.05 Utility Relocation Design

A. Utility relocation plans will be prepared using roadway drawings as the base sheets along Capri

Isles Boulevard. Drawings will be prepared in AutoCad. Standard City of Venice specifications will be used. In general, the design will include:

i. Potable Water Line replacement
ii. Reclaim Water Line replacement

The design of these utility replacements will provide for maintaining water service for the area during construction with minimal interruption of service during tie-in connections.

Design of these relocations will not begin until the proposed drainage design has been finalized. This is assumed to be at the 60% roadway design stage. Relocation plans set submittals will be made to the OWNER at 60% and 100% for review and comment.

The 60% submittal will include three (3) hard copies, 22" x 34" in size as design deliverables. Specific elements included in the 60% deliverables will be:

i. Cover Sheet, index map, table of contents, and legend
ii. Basemap showing apparent right-of-way, existing utilities, all survey elements including existing and proposed easements, if necessary.
iii. Plan view of the proposed water and reclaim water main improvements

The final deliverable submittal will consist of:

i. Incorporation of the City's 60% review comments.
ii. One (1) complete original signed and sealed 22" x 34" sized set of the construction bid documents comprising of technical specifications and drawings.
iii. Final construction drawings in electronic format and three (3) hard copies of the documents in 22" x 34" size. Two (2) sets of reduced (11" x 17") construction drawings will also be provided.
iv. Final technical specifications in PDF format will be provided.
v. Final construction cost opinion with detailed quantity take-offs.
vi. A blank bid form will also be developed in MS Excel.

Utility Design Assumptions:

1. No additional survey or subsurface utility relocations will be needed.
2. No additional geotechnical borings will be needed.
3. No lift station upgrades or relocations will be required, and the desired pipeline sizes will be provided by City of Venice.
4. No system modeling is included in this work effort.

B. Utility Permitting

FDEP construction permits may be needed for new or relocated water and reclaim water mains. The CONSULTANT will prepare and submit these applications and respond to comments and questions from FDEP that pertain to the project's proposed improvements. Permit fees are included (estimated at $1,500.00).

## 3.06 Post-Design Services

### 3.06.1 Bid Phase Services

Provide Bidding Phase Services which include but are not limited to:

A. Attendance and participation at a pre-bid meeting.

B. Provide written responses to contractor's technical questions and prepare project design addenda or revisions as needed.

C. Evaluating the bids and bid tabulations for qualified bidders.

**Deliverables:**

- To be determined as needed.

### 3.06.2 Construction Phase Services

Provide Post-Design Services which include:

A. Prepare certification for the SWFWMD ERP permit and USACE Nationwide Permit based on the Contractor's As-Built/Record Drawings.

B. Determine presence/absence of bat roosting.

C. Review and approve shop drawings and material lists (5 submittals were estimated to be required).

D. Answer any design questions during the construction phase related to the project and make site visits as requested by the OWNER (3 RFI's and 3 site visits were estimated and included).

E. Construction Engineering and Inspection (CEI) will be performed by OWNER forces and these services are not included in this scope of work.

F. No testing services during construction are included in this scope of work.

G. It is assumed that the construction phase would occur in a period of less than one (1) calendar year after commencement of construction.

**Deliverables:**

- To be determined as needed.

## Additional Services

Additional Services may be required for unforeseen work. The specific scope of work and costs are unknown and would be determined should the need arise. Such additional services could include the following:

- right-of-way use permitting
- site development permitting
- Grant or other funding reporting
- Permitting for wetland impacts
- Environmental services (Species specific wildlife surveys, contamination, cultural resource assessments, noise studies, air studies, etc.)
- right-of-way acquisition/appraisals and legal description preparation
- CEI
- exclusion of roosting bats during construction

**END SCOPE OF SERVICE**

## Compensation

For the services in this work assignment, a Lump Sum Fee is proposed for these professional services. Payment terms and conditions will be in accordance with the Agreement dated November 30, 2016.

**SUMMARY OF PROFESSIONAL FEES**

Final Design and Permitting
City of Venice - Capri Isles Boulevard Bridge Replacement

| Task/Element | Fee Estimate |
|---|---|
| 3.01 (Activity 3) Project Management and General Task | $ 34,180 |
| 3.04.1 (Activity4) Roadway Analysis | $ 34,574 |
| 3.04.1 (Activity 5) Roadway & Drainage Plans | $ 30,118 |
| 3.04.1 (Activity 6) Drainage Analysis | $ 32,800 |
| 3.04.2 (Activity 8) Permitting | $ 15,251 |
| 3.04.3 (Activity 9) Structures - Plans | $ 29,217 |
| 3.04.3 (Activity 10) Structures - Bridge Anternative Ana | $ 6,447 |
| 3.04.3 (Activity 12) Structures - Analysis | $ 68,691 |
| 3.05 (Activity7) Utility Design | $ 12,706 |
| 3.06 (Activity 33) Post Design Services | $ 14,258 |
| Subtotal (Atkins Labor) - Lump Sum | $ 278,242 |
| Direct Expenses (estimate, includes $1500 Utility Permit) | $ 3,000 |
| 3.03 Geotechnical | $ 8,200 |
| 3.02 Survey-Hydrographic | $ 19,110 |
| 3.02 SUE | $ 6,215 |
| **Grand Total** | **$ 314,767** |

## ESTIMATE OF WORK EFFORT AND COST WORKSHEET
## Final Design & Permitting
## City of Venice - Downtown Roadway Corridors - Venice Ave, Tampa Ave, Miami Ave, Nokomis Ave, Nassau St

ATKINS

Name of Project: City of Venice - Capri Isles Boulevard Bridge Replacement
Client: City of Venice
City Task Order #:

Consultant Name: Atkins
Consultant No.: p100063285
Date: 11/17/2018
Estimator: Uptegraff P.E.

| Staff Classification | Total Staff Hours From "SH Summary - | Chief/Principal Engineer | Sr. Project Manager | Sr Traffic Engineer | Design Engineer | Sr. Scientist IV | Environmental Scientist | Sr. Engineer II | CADD Drafter | Sr Engineer IV | Sr Designer I | Engineer I | Admin | SH By Activity | Salary Cost By Activity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $220.00 | $205.00 | $135.00 | $100.00 | $167.00 | $87.00 | $174.00 | $97.00 | $228.00 | $135.00 | $90.00 | $65.00 | | |
| 3.01 (Activity 3) Project Management and General Tasks | 191 | 4 | 140 | 10 | 10 | 0 | 10 | 0 | 0 | 0 | 0 | 11 | 6 | 191 | $34,180 |
| 3.04.1 (Activity4) Roadway Analysis | 295 | 0 | 15 | 9 | 159 | 0 | 0 | 24 | 44 | 0 | 44 | 0 | 0 | 295 | $34,574 |
| 3.04.1 (Activity 5) Roadway & Drainage Plans | 277 | 0 | 14 | 6 | 83 | 0 | 0 | 8 | 138 | 0 | 22 | 0 | 6 | 277 | $30,118 |
| 3.04.1 (Activity 6) Drainage Analysis | 206 | 0 | 10 | 0 | 31 | 0 | 0 | 145 | 0 | 0 | 16 | 0 | 4 | 206 | $32,800 |
| 3.04.2 (Activity 8) Permitting | 151 | 0 | 0 | 0 | 18 | 23 | 90 | 0 | 15 | 0 | 0 | 0 | 5 | 151 | $15,251 |
| 3.04.3 (Activity 9) Structures - Plans | 167 | 0 | 8 | 0 | 34 | 0 | 0 | 0 | 33 | 92 | 0 | 0 | 0 | 167 | $29,217 |
| 3.04.3 (Activity 10) Structures - Bridge Antemative Analysis | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 27 | 0 | 0 | 0 | 30 | $6,447 |
| 3.04.3 (Activity 12) Structures - Analysis | 476 | 0 | 0 | 0 | 214 | 0 | 0 | 0 | 95 | 167 | 0 | 0 | 0 | 476 | $68,691 |
| 3.05 (Activity7) Utility Design | 104 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 42 | 42 | 8 | 104 | $12,706 |
| 3.06 (Activity 33) Post Design Services | 107 | 1 | 21 | 0 | 69 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 5 | 107 | $14,258 |
| **Total Staff Hours** | 2,004 | 5 | 208 | 25 | 618 | 23 | 100 | 177 | 328 | 309 | 124 | 53 | 34 | 2,004 | |
| **Total Staff Cost** | | $1,100.00 | $42,640.00 | $3,375.00 | $61,800.00 | $3,841.00 | $8,700.00 | $30,798.00 | $31,816.00 | $70,452.00 | $16,740.00 | $4,770.00 | $2,210.00 | | $278,242.00 |

Check = $278,242.00

Notes:
1. This sheet to be used by Prime Consultant to calculate the Grand Total fee.

| | | | |
|---|---|---|---|
| Engineering LABOR COSTS (Atkins) : | | | $278,242.00 |
| EXPENSES: | | | $3,000.00 |
| **SUBTOTAL ESTIMATED FEE:** | | | **$281,242.00** |
| Subconsultant: | Ardaman & Associates, Inc. | 3.03 Geotechnical | $8,200.00 |
| Subconsultant: | George F Young, Inc. | 3.02 Survey-Hydrographic | $19,110.00 |
| Subconsultant: | George F Young, Inc. | 3.02 SUE | $6,215.00 |
| **SUBTOTAL ESTIMATED FEE:** | | | **$33,525.00** |
| **GRAND TOTAL ESTIMATED FEE (Lump Sum):** | | | **$314,767.00** |

## Project Activity 3: General Tasks

Estimator: Mueller / Uptegraff

City of Venice - Capri Isles Boulevard Bridge Replacement

| Item No. | Task | Units | No of Units | Hours / Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 3.1 | **Public Involvement** | | | | | |
| a | Prepare Advertisement/News Release | LS | 0 | 0 | 0 | |
| b | Prepare Public Mtg. Notice | LS | 0 | 0 | 0 | |
| c | Prepare Memo for Public Affairs Dept | LS | 0 | 0 | 0 | |
| d | Newsletters | LS | 0 | 0 | 0 | |
| e | Renderings/Fly Thru | LS | 0 | 0 | 0 | |
| f | Powerpoint Presentation | LS | 0 | 0 | 0 | |
| g | Presentation Preparations | LS | 1 | 12 | 12 | Prepare graphics of plan and typicals for coordinantion with local community and up to 2 meetings with City Council. |
| h | Public Meeting Attendance/Followup | LS | 0 | 0 | 0 | |
| i | Attend/Participate in City Council Meeting | EA | 2 | 4 | 8 | 2 meeting - 1 person @4hrs./mtg. |
| j | Follow-up Meeting with City | LS | 0 | 0 | 0 | |
| 3.2 | Joint Project Agreements | EA | 0 | 0 | 0 | |
| 3.3 | Specifications Package Preparation | LS | 1 | 36 | 36 | Prepare Specification Package (req'd by FDOT) |
| 3.4 | Contract Maintenance/Coordination | LS | 1 | 68 | 68 | Prepare monthly progress, respond/coordinate with City PM, 4 hr. setup + 2 hrs./mo for 24 mos. (58 hrs)<br>+ 1 hr per month/sub managing subconsultants for 8 months. (16 hrs) |
| 3.5 | Utility Coordination Coordination and Meeting | LS | 1 | 24 | 24 | plans sumbittal to the UAO's (30, 60, 100%), Utility Coordination Meeting. |
| 3.7 | FDOT Electronic Review | LS | 1 | 24 | 24 | Preparing submittals for 30%, 60%, and 100% and responding to comments. 8hrs/submittal*=24hrs |
| 3.8 | Technical Meetings | LS | 1 | 19 | 19 | |
| | | **3. General Tasks Total** | | | **191** | |

**Technical Meetings**

| | | | | | |
|---|---|---|---|---|---|
| Typical Section | EA | 0 | 0 | 0 | |
| Pavement | EA | 0 | 0 | 0 | |
| Access management | EA | 0 | 0 | 0 | |
| 15% line and grade | EA | 0 | 0 | 0 | |
| Driveways | EA | 0 | 0 | 0 | |
| Local Governments (cities, counties, MPO) | EA | 2 | 6 | 12 | City of Venice 2 mtgs. (2 people@3hrs/Mtg.) |
| Work zone traffic control | EA | 0 | 0 | 0 | |
| 30/60% comment review meetings | EA | 2 | 2 | 4 | PM plus 1 more (assume telephone conference) |
| Other meetings | EA | 1 | 3 | 3 | Initial field review w/City |
| **Subtotal technical meetings** | | | | **19** | |
| Progress Meetings | EA | 0 | 0 | 0 | |

| | |
|---|---|
| **Total Meetings** | **19** |

Carries to 3.8

## Project Activity 4: Roadway Analysis

Estimator: Mueller / Uptegraff

City of Venice - Capri Isles Boulevard Bridge Replacement

| Item No. | Task | Units | No of Units | Hours / Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 4.0 | 30% Concept Plan | LS | 1 | 70 | 70 | Provide design (concept) on a FDOT funding schedule. Elements to include: plan views (1"'40' - 2shts.@20hr/sht) on survey sheet , typical section (2 sheets@3hr/ea), approx. conceptual drainage improvements (label on plan view). Preliminary cost estimate (prelim quantities - 16hr, estimate 8hrs). Assume reconstruction for 300 feet each side of the bridge. |
| 4.1 | Typical Sections | LS | 1 | 12 | 12 | Using topo survey. 3 sheets, 2 typical section (1 rdwy, 1 bridge) and 1 sheet of details(3 sheets @ 4hr each for further detail from task 4.0) = 12 |
| 4.2 | Pavement Design Package | LS | 1 | 0 | 0 | Use geotech corings to match existing pavement and/or City typical detail. No pavement design package. |
| 4.3 | Access Management | LS | 1 | 0 | 0 | N/A |
| 4.4 | Cross Slope Correction | LS | 1 | 0 | 0 | Not in scope |
| 4.5 | Horizontal /Vertical Master Design Files | LS | 1 | 48 | 48 | Establish horizontal geometry (700 feet of roadway reconstruction (2 plan sheets @ 40 scale) @ 24hrs), vertical profile (700 feet of reconstruction with potential for 3 feet of grade increase at bridge=24) |
| 4.6 | Cross Section Design Files | LS | 1 | 13.5 | 14 | Cross-Sections at 50 ft. intervals (700 ft)=14 xsecs + 4 driveways (0.75hrs/Xsec)=18@0.75=14hrs |
| 4.6 | Traffic Control Analysis | LS | 1 | 16 | 16 | Detour plans for bridge replacement. Assume 20 hrs for concept development. Will assume 1 sheet for detour (1"=200' or 1"=100'). Advance signing will include detail/notes sheetsand any VMS messaging. Advance Warning Signal Details (3 details). Pedestrian Detour Plans |
| 4.7 | Master TCP Design Files | LS | 1 | 0 | 0 | None Anticipated |
| 4.8 | Design Variations and Exceptions | LS | 1 | | 0 | None Anticipated |
| 4.9 | Design Report | LS | 1 | 24 | 24 | Documentation of design/design criteria (criteria summary and associated backup information) |
| 4.10 | Quantity takeoffs | LS | 1 | 40 | 40 | Roadway & Drainage items (60%, 100%) - rough takeoffs at 60% (16hrs), quantity calculations @100% (24hrs) |
| 4.11 | Muck/Organic Limits Quantities/Delineation on Plans | LS | 0 | 0 | 0 | N/A |
| 4.12 | Cost Estimate | LS | 1 | 16 | 16 | Roadway & Drainage items (60%,100%) - 8 hrs/Estimate |
| 4.13 | Technical Special Provisions | LS | 0 | 0 | 0 | Prepare basic LAP specification package covered under tab 3. |
| 4.14 | Other Roadway Analysis | LS | 1 | 12 | 12 | Signing and Pavement Marking Design (inlcuded notes and typical section) |
| **Roadway Analysis Technical Subtotal** | | | | | **252** | |

## Project Activity 4: Roadway Analysis

| Item No. | Task | Units | No of Units | Hours / Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 4.15 | Field Reviews | LS | 1 | 6 | 6 | 1 person for 6 hours (with drainage) |
| 4.16 | Technical Meetings | LS | 1 | 0 | 0 | See tab 3 |
| 4.17 | Quality Assurance/Quality Control | LS | % | 7% | 18 | |
| 4.18 | Independent Peer Review | LS | % | | | Not in scope |
| 4.19 | Supervision | LS | % | 5% | 13 | |
| **Roadway Analysis Nontechnical Subtotal** | | | | | 37 | |
| 4.19 | Coordination | LS | % | 2% | 6 | Coordination w/all disciplines (survey, geotechnical, landscape, lighting) |
| **4. Roadway Analysis Total** | | | | | 295 | |

# Project Activity 5: Roadway Plans

Estimator: Mueller / Mulvaney / Uptegraff

City of Venice - Capri Isles Boulevard Bridge Replacement

| Item No. | Task | Scale | Units | No. of Units | Hours / Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|---|
| 5.1 | Key Sheet | | Sheet | 1 | 6 | 1 | 6 | |
| 5.2 | Summary of Pay Items-including Quantity Input | | Sheet | 2 | 16 | 2 | 32 | Include since FDOT administered project |
| 5.3 | Drainage Map | 1"=200' 11"x17" | Sheet | 1 | 16 | 1 | 16 | One Drainage Map, 200 scale |
| 5.4 | Regional Drainage Map | 1"=1000' 11"x17" | Sheet | | | | | |
| 5.5.1 | Typical Section | | EA | 2 | 8 | 2 | 16 | 2 typical sections assumed - 1 roadway and 1 bridge. |
| 5.5.2 | Typical Section Details | | EA | 1 | 8 | 1 | 8 | |
| 5.6 | General Notes/Pay Item Notes | | Sheet | 1 | 16 | 1 | 16 | |
| 5.7 | Summary of Quantities | | Sheet | | | | | Not Used. Will put quantities on cost estimate spreadsheet. |
| 5.8 | Box Culvert Data Sheet | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 5.9 | Bridge Hydraulics Recommendation Sheets | | Sheet | 1 | 30 | 1 | 30 | N/A |
| 5.10 | Summary of Drainage Structures | | Sheet | | | 0 | 0 | N/A |
| 5.11 | Optional Pipe/ Culvert Material | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 5.12 | Project Layout | 1"=200 | Sheet | 0 | | 0 | 0 | |
| 5.13 | Plan/Profile Sheet | 1"=40 hor. 1"=4' vert. 11x17 | Sheet | 0 | 0 | 0 | 0 | |
| 5.14 | Profile Sheet | 1"=4', 11x17 | Sheet | 2 | 6 | 2 | 12 | 2 sheets |
| 5.15 | Plan Sheet | 1"=40'hor. . 11x17 | Sheet | 2 | 10 | 2 | 20 | 2 sheets at 40 scale |
| 5.16 | Special Profile | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 5.17 | Back of Sidewalk Profile Sheet | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 5.18 | Interchange Layout Sheet | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 5.19 | Ramp Terminal Details (Plan View) | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 5.20 | Intersection Layout Details/Grading | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 5.21 | Miscellaneous Detail Sheets | | Sheet | 1 | 16 | 1 | 16 | 8 hours for roadway detail sheet and 8 hours for signing and marking detail sheet. |
| 5.22 | Drainage Structure Sheet (per Structure) | | EA | 0 | 0 | 0 | 0 | N/A |
| 5.23 | Miscellaneous Drainage Detail Sheets | | Sheet | 1 | 8 | 1 | 8 | |
| 5.24 | Lateral Ditch Plan/Profile | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 5.25 | Lateral Ditch Cross sections | | EA | 0 | 0 | | 0 | N/A |

## Project Activity 5: Roadway Plans

| Item No. | Task | Scale | Units | No. of Units | Hours / Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|---|
| 5.26 | Retention/Detention Ponds Detail Sheet | | Sheet | 0 | 0 | 0 | 0 | N/A |
| 5.27 | Retention Pond Cross Sections | | EA | 0 | 0 | 0 | 0 | N/A |
| 5.28 | Cross-section Pattern Sheet | | Sheet | 0 | 0 | 0 | 0 | Not required |
| 5.29 | Roadway Soil Survey Sheet | | Sheet | 1 | 4 | 1 | 4 | Incorporate soil survey sheet from geotech consultant. Raodway, drainage and bridge info |
| 5.30 | Cross Sections | 1"=20'Hor<br>1"=10'Ver<br>11"x17" | EA | 18 | 0.5 | 6 | 9 | Cross-Sections at 50 ft. intervals (700 ft)=14 xsecs + 4 driveways =18 minor labeling and modifications to sections. |
| 5.31 | Traffic Control Plan Sheets | 1"=100'<br>11"x17" | Sheet | 5 | 8 | 5 | 40 | Detour plans for bridge replacement. Will use 1 sheet for detour @16hrs. Advance signing will include detail/notes sheets and VMS messaging. (3 sheets@8hr/ea). |
| 5.32 | Traffic Control Cross Section Sheets | | EA | 0 | 0 | 0 | 0 | |
| 5.33 | Traffic Control Detail Sheets | | Sheet | 0 | 0 | 0 | 0 | |
| 5.34 | Utility Adjustment Sheets | | Sheet | 0 | 0 | 0 | 0 | |
| 5.35 | Selective Clearing and Grubbing | | Sheet | 0 | 0 | 0 | 0 | |
| 5.36 | Erosion Control Plan | 1"=100'<br>11"x17" | Sheet | 0 | 0 | 0 | 0 | |
| 5.37 | SWPPP | | Sheet | 2 | 4 | 2 | 8 | 2 sheets |
| 5.38 | Project Control Network Sheet | | Sheet | 0 | 0 | 0 | 0 | |
| 5.39 | Interim Standards | | LS | 0 | 0 | 0 | 0 | |
| 5.40 | Utility Verification Sheet (SUE data) | | Sheet | 0 | 0 | 0 | 0 | |
| **Roadway Plans Technical Subtotal** | | | | | | **29** | **241** | |
| 5.42 | Quality Assurance/Quality Control | | LS | % | 10% | | 24 | |
| 5.43 | Supervision | | LS | % | 5% | | 12 | |
| **5. Roadway Plans Total** | | | | | | **29** | **277** | |

# Project Activity 6: Drainage Analysis

Estimator: Mulvaney / Uptegraff

City of Venice - Capri Isles Boulevard Bridge Replacement

| Item No. | Task | Units | No of Units | Hours / Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 6.1 | Determine Base Clearance Water Elevation | Per Location | 0 | 0 | 0 | |
| 6.2 | Pond Siting Analysis and Report | Per Basin | 0 | 0 | 0 | |
| 6.3 | Design of Cross Drains | EA | 0 | 0 | 0 | |
| 6.4 | Design of Roadway Ditches/Off-site Bypass Systems | LS | 1 | 15 | 15 | Re-grading ditches north and south of bridge replacment. Approximately 5 side drains will be impacted due to the bridge and roadway being raised. (5 hours). |
| 6.5 | Design of Outfalls | EA | 0 | 0 | 0 | |
| 6.6 | Design of Stormwater Management Facility (Offsite Pond) | EA | 0 | 0 | 0 | |
| 6.7 | Design of Stormwater Management Facility (Roadside Ditch as Linear Pond) | Per System | 0 | 0 | 0 | |
| 6.8 | Design of Flood Plain Compensation Area | Per Encroachment | 0 | 0 | 0 | |
| 6.9 | Design of Storm Drains | EA | 6 | 3 | 18 | Scupper/Barrier wall slot analysis. 4 existing inlets within 300 feet north and south of bridge. inlet replacements |
| 6.10 | Optional Culvert Material | LS | 0 | 0 | 0 | |
| 6.11 | French Drain Systems | Per 1000 Feet of French Drain | 0 | 0 | 0 | |
| 6.12 | Drainage Wells | EA | 0 | 0 | 0 | |
| 6.13 | Drainage Design Documentation Report | LS | 0 | 0 | 0 | |
| 6.14 | Preparation of Bridge Hydraulic Report | EA | 1 | 130 | 130 | Mid-range FEMA "No Rise" analysis for Capri Isles Bridge over Blackburn Canal (Non-tidal) with bridge overtopping for the 100 year frequency, converging channels just upstream of the Capri Isles bridge. One of the channels provides flood relief for the Myakka River. Mulitple bridges downstream of Capri Isles Bridge. |
| 6.15 | Temporary Drainage Analysis | LS | 1 | 0 | 0 | |
| 6.16 | Cost Estimate | LS | 1 | 4 | 4 | |
| 6.17 | Technical Special Provisions | LS | 0 | 0 | 0 | |
| 6.18 | Other Drainage Analysis | LS | 0 | 0 | 0 | |
| **Drainage Analysis Technical Subtotal** | | | | | **167** | |

## Project Activity 6: Drainage Analysis

| Item No. | Task | Units | No of Units | Hours / Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 6.19 | Field Reviews | LS | 1 | 6 | 6 | 1 person for 6 hours (with roadway) |
| 6.20 | Technical Meetings | LS | 1 | 8 | 8 | |
| 6.21 | Quality Assurance/Quality Control | LS | % | 10% | 17 | |
| 6.22 | Independent Peer Review | LS | | | 0 | Not included in scope |
| 6.23 | Supervision | LS | % | 5% | 8 | |
| **Drainage Analysis Nontechnical Subtotal** | | | | | **39** | |
| | | | | | | |
| **6. Drainage Analysis Total** | | | | | **206** | |

**Technical Meetings**

| | | | | |
|---|---|---|---|---|
| Base clearance water elevation | EA | 0 | 0 | 0 |
| Pond Siting | EA | 0 | 0 | 0 |
| Agency (SWFWMD Pre-Apps, RFAI) | EA | 1 | 4 | 4 |
| Local Governments (cities, counties) | EA | 1 | 4 | 4 |
| FDOT Drainage | EA | 0 | 0 | 0 |
| Other meetings | EA | 0 | 0 | 0 |
| **Subtotal technical meetings** | | | | **8** |
| | | | | |
| Progress Meetings (if required by FDOT) | EA | 0 | 0 | 0 |
| Phase Review Meetings | EA | 0 | 0 | 0 |
| **Total Meetings** | | | | **8** |

Carries to 6.20

# Project Activity 8: Environmental Permits

Estimator: Cronyn

City of Venice - Capri Isles Boulevard Bridge Replacement

| Item No. | Task | Units | No. of Units | Hours/ Units | Total Hours | Comments |
|---|---|---|---|---|---|---|
| 8.1 | Preliminary Project Research | LS | 1 | 2 | 2 | Research existing SWFWMD permits (3.01 H). |
| 8.2 | Complete Permit Involvement Form | LS | 0 | 0 | 0 | N/A |
| 8.3 | Establish Wetland Jurisdictional Lines | LS | 1 | 36 | 36 | 20 hrs fieldwork (Wetland delineation (GPS and flagging), T&E species occurrence/habitat, bat presence/absence), 16 hours memorandum including exhibits (3.04 Perm) |
| 8.4 | Agency Verification of Wetland Data | LS | 1 | 8 | 8 | SWFWMD |
| 8.5 | Complete And Submit ERP Permit Application | LS | 1 | 44 | 44 | Prepare application for General Permit 62-330.443, FAC (12 hrs). Environmental report (32 hours). Respond to up to 2 RAIs (8) (3.01 H.) |
| 8.6 | Prepare Dredge and Fill Sketches | LS | 4 | 4 | 16 | 2 plan sheets + 2 cross-section sheets (CAD hours) (3.04 Desgn) |
| 8.7 | Prepare USCG Permit Sketches | LS | 0 | 0 | 0 | N/A |
| 8.8 | Prepare Easement Sketches | LS | 0 | 0 | 0 | N/A |
| 8.9 | Prepare R/W Occupancy Sketches | LS | 0 | 0 | 0 | N/A |
| 8.10 | USACE Nationwide Permit Application | LS | 1 | 20 | 20 | Nationwide Permit/notice. Form ENG 4345 and supplemental forms (16 hrs). Modify from SWFWMD environmental report (8 hrs ). (3.01 I) |
| 8.11 | Prepare Tree Permit Information | LS | 0 | 0 | 0 | N/A |
| 8.12 | Mitigation Coordination and Meetings | LS | 0 | 0 | 0 | No mitigation anticipated to be required. |
| 8.13 | Mitigation Design | LS | 0 | 0 | 0 | No mitigation anticipated to be required. |
| 8.14 | Environmental Clearances | LS | 0 | 0 | | Addressed by City |
| 8.15 | Other Permits | LS | 0 | 0 | 0 | N/A |
| **Environmental Permits Technical Subtotal** | | | | | **126** | |
| 8.16 | Technical Meetings | LS | 1 | 6 | 6 | Meetings are listed below |
| 8.17 | Quality Assurance/Quality Control | LS | % | 10% | 13 | |
| 8.18 | Supervision | LS | % | 5% | 6 | |
| **Environmental Permits Nontechnical SubTotal** | | | | | **25** | |
| | | | | | | |
| **8. Environmental Permits Total** | | | | | **151** | |

## Project Activity 8: Environmental Permits

| Item No. | Task | Units | No. of Units | Hours/ Units | Total Hours | Comments |
|---|---|---|---|---|---|---|
| | **Technical Meetings** | | | | | |
| | WMD | EA | 1 | 6 | 6 | 1 meeting w/SWFWMD (pre-app. 2 people @3hrs - Tampa office) |
| | ACOE | EA | 0 | 0 | 0 | |
| | USCG | EA | 0 | 0 | 0 | |
| | USFWS | EA | 0 | 0 | 0 | |
| | FFWCC | EA | 0 | 0 | 0 | |
| | FDOT | EA | 0 | 0 | 0 | |
| | Other meetings | EA | 0 | 0 | 0 | |
| | **Subtotal technical meetings** | | | | **6** | |
| | Progress Meetings | EA | 0 | 0 | 0 | |
| | Phase Review Meetings | EA | 0 | 0 | 0 | |
| | **Total Meetings** | | | | **6** | |

Carries to 8.16

# Project Activity 9: Structures Summary and Miscellaneous Tasks and Plans

Estimator: Pein

City of Venice - Capri Isles Boulevard Bridge Replacement

Bridge Identfier (Number or Name): 176001

| Task No. | Task | Units | Design and Production Staffhours | | | | Comments |
|---|---|---|---|---|---|---|---|
| | | | No. of Units | Hours per Unit | No. of Sheets | Total | |
| | **General Drawings** | | | | | | |
| 9.1 | Index of Drawings | sheet | 1 | 8 | 1 | 8 | Single Bridge |
| 9.2 | Project Layout | sheet | 0 | 0 | 0 | 0 | Not needed |
| 9.3 | General Notes and Bid Item Notes | sheet | 2 | 12 | 2 | 24 | Simple |
| 9.4 | Incorporate FDOT Standards | sheet | 5 | 2 | 5 | 10 | Pile, beam, rebar, railing & approach slab |
| 9.5 | Incorporate Report of Core Borings | sheet | 1 | 1 | 1 | 1 | |
| 9.6 | Existing Bridge Plans | LS | 1 | 0 | | 0 | N/A |
| 9.7 | Computation Book and Quantities | LS | 1 | 12 | | 12 | |
| 9.8 | Cost Estimate | LS | 1 | 6 | | 6 | Single Bridge |
| 9.9 | Technical Special Provisions | LS | 1 | 0 | | 0 | N/A |
| **Structures - Miscellaneous Tasks & Drawings Subtotal** | | | | | 9 | 61 | |

| Task No. | Task | Total | Task 10 | Task 11 | Task 12 | Task 13 | Task 14 | Task 15 | Task 16 | Task 17 | Task 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10-16 | Bridge 1 | 506 | 30 | 0 | 476 | 0 | 0 | 0 | 0 | | |
| 10-16 | Bridge 2 | 0 | | | | | | | | | |
| 10-16 | Bridge 3 | 0 | | | | | | | | | |
| 17 | Retaining Walls | 0 | | | | | | | | 0 | |
| 18 | Miscellaneous Structures | 0 | | | | | | | | | 0 |
| **Structures Technical Subtotals** | | 506 | 30 | 0 | 476 | 0 | 0 | 0 | 0 | 0 | 0 |

| Task No. | Task | Units | No. of Units | Hours per Unit | Total | Comments |
|---|---|---|---|---|---|---|
| 9.10 | Field Reviews | LS | 1 | 8 | 8 | |
| 9.11 | Technical Meetings | LS | 1 | 17 | 17 | |
| 9.12 | Quality Assurance / Quality Control | LS | % | 7% | 40 | |
| 9.13 | Independent Peer Review | LS | % | 0% | 0 | |
| 9.14 | Supervison | LS | % | 5% | 28 | |
| **Structures Non-Technical Subtotal** | | | | | 93 | |
| 9.15 | Coordination | LS | % | 2% | 13 | |
| **9. Structures - Miscellaneous Tasks & Drawings, Non-Technical, & Coordination Total** | | | | | 167 | |

## Project Activity 10: Bridge Alternative Analysis

Estimator: Pein
Bridge Identfier (Number or Name): 176001

City of Venice - Capri Isles Boulevard Bridge Replacement

| Task No. | Task | Units | No of Units | Hours / Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| | | | **General Requirement** | | | | |
| 10.1 | Bridge Geometry | LS | 0 | 0 | 1 | 0 | |
| 10.2 | Ship Impact Data Collection | LS | 0 | 0 | | 0 | |
| 10.3 | Ship Impact Criteria | EA | 0 | 0 | | 0 | |
| | | | **Superstructure Alternatives** | | | | |
| 10.4 | Short Span Concrete | EA | 0 | 0 | | 0 | flat slab (CIP) concrete, precast slab unit, double tee |
| 10.5 | Medium Span Concrete | EA | 0 | 0 | | 0 | Prestressed beam |
| 10.6 | Long Span Concrete | EA | 0 | 0 | | 0 | |
| 10.7 | Structural Steel | EA | 0 | 0 | | 0 | |
| | | | **Foundation & Substructure Alternatives** | | | | |
| 10.8 | Pier/Bent Types | EA | 0 | 0 | | 0 | Pile & scour |
| 10.9 | Shallow Foundations | EA | 0 | 0 | | 0 | GRS evaluation |
| 10.10 | Deep Foundations | EA | 0 | 0 | | 0 | piles |
| | | | **Movable Span** | | | | |
| 10.11 | Data Collection & Design Criteria | LS | 1 | 0 | | 0 | |
| 10.12 | Movable Span Geometrics and Clearances | LS | 1 | 0 | | 0 | |
| 10.13 | Deck System Evaluation | LS | 1 | 0 | | 0 | |
| 10.14 | Framing Plan Development | LS | 1 | 0 | | 0 | |
| 10.15 | Main Girder Preliminary Design | LS | 1 | 0 | | 0 | |
| 10.16 | Conceptual Span Balance/Counterweight | LS | 1 | 0 | | 0 | |
| 10.17 | Support System Development | LS | 1 | 0 | | 0 | |
| 10.18 | Drive Power Calculations | LS | 1 | 0 | | 0 | |
| 10.19 | Drive System Development | LS | 1 | 0 | | 0 | |
| 10.20 | Power and Control Development | LS | 1 | 0 | | 0 | |
| 10.21 | Conceptual Pier Design | LS | 1 | 0 | | 0 | |

## Project Activity 10: Bridge Alternative Analysis

| Task No. | Task | Units | No of Units | Hours / Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| 10.22 | Foundation Analysis (FL Pier) | LS | 1 | 0 | | 0 | |
| 10.23 | Tender Visibility Study | LS | 1 | 0 | | 0 | |
| | **Other BDR Issues** | | | | | | |
| 10.24 | Aesthetics | LS | 1 | 2 | | 2 | minimal aesthetics |
| 10.25 | TCP/Staged Construction Requirements | LS | 1 | 0 | | 0 | N/A |
| 10.26 | Constructibility Requirements | LS | 1 | 4 | | 4 | Evaluation of construction equipment, materials delivery, site access, construction methodology. |
| 10.27 | Abutment Slope/Wall Evaluation | LS | 1 | 0 | | 0 | |
| 10.28 | Quantity and Cost Estimates | EA | 0 | 0 | | 0 | |
| 10.29 | Quantity and Cost Estimates (Movable Span) | LS | 1 | 0 | | 0 | |
| 10.30 | Wall Type Justification | LS | 1 | 0 | | 0 | |
| | **Report Preparation** | | | | | | |
| 10.31 | Exhibits | EA | 0 | 0 | | 0 | |
| 10.32 | Exhibits (Movable Span) | EA | 0 | 0 | | 0 | |
| 10.33 | Report Preparation | LS | 1 | 24 | | 24 | Prepare 30% Final Design Alternative Recommendation |
| 10.34 | Report Preparation (Movable Span) | LS | 1 | 0 | | 0 | |
| 10.35 | BDR Submittal Package | LS | 1 | 0 | | 0 | |
| | **BDR Subtotal** | | | | | **30** | |
| | **Add the following hours if Plans are included with the BDR submittal** | | | | | | |
| 10.36 | General Notes Sheets | Sheet | 0 | 0 | 0 | 0 | |
| 10.37 | Plan and Elevation Sheets | Sheet | 0 | 0 | 0 | 0 | |
| 10.38 | Construction Staging | Sheet | 0 | 0 | 0 | 0 | |
| 10.39 | Superstructure Section Sheets | Sheet | 0 | 0 | 0 | 0 | |
| 10.40 | Substructure Sections Sheets | Sheet | 0 | 0 | 0 | 0 | |
| 10.41 | General Notes Sheets (Movable Span) | Sheet | 0 | 0 | 0 | 0 | |
| 10.42 | Plan and Elevation Sheets (Movable Span) | Sheet | 0 | 0 | 0 | 0 | |
| 10.43 | Clearance Diagram (Movable Span) | Sheet | 0 | 0 | 0 | 0 | |
| 10.44 | Bascule Pier Layouts (Movable Span) | Sheet | 0 | 0 | 0 | 0 | |

## Project Activity 10: Bridge Alternative Analysis

| Task No. | Task | Units | No of Units | Hours / Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| 10.45 | Bascule Leaf Section (Movable Span) | Sheet | 0 | 0 | 0 | 0 | |
| 10.46 | Bascule Leaf Framing Plan (Movable Span) | Sheet | 0 | 0 | 0 | 0 | |
| 10.47 | Machinery Layouts (Movable Span) | Sheet | 0 | 0 | 0 | 0 | |
| 10.48 | Control Logic Diagram (Movable Span) | Sheet | 0 | 0 | 0 | 0 | |
| **30% Plans Subtotal** | | | | | **0** | **0** | |
| **10. Structures-BDR Total** | | | | | **0** | **30** | |

## Project Activity 12: Structures- Short Span Concrete Analysis

Estimator: Pein
Bridge Identfier (Number or Name): 176001

City of Venice - Capri Isles Boulevard Bridge Replacement

| Task No. | Task | Units | No. of Units | Hours / Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| **General Layout Design and Plans** | | | | | | | |
| 12.1 | Overall Bridge Final Geometry | LS | 1 | 16 | 1 | 16 | |
| 12.2 | Expansion/Contraction Analysis | EA Unit | 1 | 4 | | 4 | |
| 12.3 | General Plan and Elevation | Sheet | 1 | 36 | 1 | 36 | |
| 12.4 | Construction Staging | Sheet | 0 | 0 | 0 | 0 | Use Detour |
| 12.5 | Approach Slab Plan and Details | Sheet | 1 | 16 | 1 | 16 | |
| 12.6 | Miscellaneous Details | Sheet | 2 | 16 | 2 | 32 | |
| **End Bent Design and Plans** | | | | | | | |
| 12.7 | End Bent Geometry | EA | 1 | 8 | | 8 | |
| 12.8 | End Bent Structural Design | EA | 1 | 8 | | 8 | |
| 12.9 | End Bent Plan and Elevation | Sheet | 1 | 24 | 1 | 24 | Double dimensioned to cover both end bents |
| 12.10 | End Bent Details | Sheet | 1 | 12 | 1 | 12 | |
| **Intermediate Bent Design and Plans** | | | | | | | |
| 12.11 | Bent Geometry | EA | 1 | 8 | | 8 | |
| 12.12 | Bent Stability Analysis | EA | 1 | 24 | | 24 | possible moderate scour |
| 12.13 | Bent Structural Design | EA | 1 | 24 | | 24 | |
| 12.14 | Bent Plan and Elevation | Sheet | 1 | 24 | 1 | 24 | |
| 12.15 | Bent Details | Sheet | 1 | 12 | 1 | 12 | |
| **Misc. Substructure Design and Plans** | | | | | | | |
| 12.16 | Foundation Layout | Sheet | 1 | 24 | 1 | 24 | |
| **Superstructure Design and Plans** | | | | | | | |
| 12.17 | Finish Grade Elevation Calculation | LS | 1 | 24 | | 24 | |
| 12.18 | Finish Grade Elevations | Sheet | 1 | 16 | 1 | 16 | |
| **Cast-In-Place Slab Bridges** | | | | | | | |
| 12.19 | Bridge Deck Design | EA Unit | 0 | 0 | | 0 | |
| 12.20 | Superstructure Plan | Sheet | 0 | 0 | 0 | 0 | |
| 12.21 | Superstructure Sections and Details | Sheet | 0 | 0 | 0 | 0 | |

## Project Activity 12: Structures- Short Span Concrete Analysis

| Task No. | Task | Units | No. of Units | Hours / Unit | No. of Sheets | Total Hours | Comments |
|---|---|---|---|---|---|---|---|
| **Prestressed Slab Unit Bridges** | | | | | | | |
| 12.22 | Prestressed Slab Unit Design | EA Design | 1 | 24 | | 24 | |
| 12.23 | Prestressed Slab Unit Layout | Sheet | 1 | 18 | 1 | 18 | |
| 12.24 | Prestressed Slab Unit Details and Schedule | Sheet | 1 | 36 | 1 | 36 | |
| 12.25 | Deck Topping Reinforcing Layout | Sheet | 1 | 18 | 1 | 18 | |
| 12.26 | Superstructure Sections and Details | Sheet | 1 | 20 | 1 | 20 | |
| **Reinforcing Bar List** | | | | | | | |
| 12.27 | Reinforcing Bar List | Sheet | 1 | 8 | 1 | 8 | |
| **Load Rating** | | | | | | | |
| 12.28 | Load Rating | EA Unit | 2 | 20 | | 40 | |
| **12. Structures-Short Span Concrete Total** | | | | | 15 | 476 | |

## Project Activity 7: Utility Coordination

Estimator: Eash

City of Venice - Capri Isles Boulevard Bridge Replacement

| Item No. | TASK | Units | No of Units | Hours / Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| Task A | Potable Water & Reclaim Water Main Design | LS | 1 | 80 | 80 | |
| Task B | Permitting | LS | 1 | 24 | 24 | |
| | | LS | 1 | | 0 | |
| | | LS | 1 | | 0 | |
| | | LS | 1 | 0 | 0 | |
| | | LS | 1 | 0 | 0 | |
| | | LS | 1 | 0 | 0 | |
| | | LS | 1 | 0 | 0 | |
| | | LS | 1 | 0 | 0 | |
| | | EA Mtg. | 1 | 0 | 0 | |
| | | | | 7. Utilities Total | 104 | |

## Project Activity 33: Post-Design Services

Estimator: Uptegraff

City of Venice - Capri Isles Boulevard Bridge Replacement

| Item No. | Task | Units | No of Units | Hours / Unit | Total Hours | Comments |
|---|---|---|---|---|---|---|
| | | | | | | |
| 33.1 | Pre-Bid Meetings | Mtg. | 1 | 4 | 4 | (4hrs/mtg.*1person) |
| 33.2 | Bid Addenda Responses | LS | 1 | 12 | 12 | |
| 33.3 | Review Bid Tabulations | LS | 1 | 6 | 6 | Review bid for balanced unit costs vs. engineer's estimate. Provide letter to City |
| **Bidding Phase Services Subtotal** | | | | | **22** | |
| 33.4 | Pre-Construction Meetings | Mtg. | 1 | 4 | 4 | (4hrs/mtg.*1person) - attendance only - minutes by City |
| 33.5 | Shop Drawing Reviews | EA | 5 | 8 | 40 | (assumed max 5 submittals) |
| 33.6 | Respond to RFI's | EA | 3 | 6 | 18 | (assumed 3 RFI's max.) |
| 33.7 | Site Visits | EA | 3 | 5 | 15 | (5hrs/visit*1person) (assume 3 visits) |
| 33.8 | Progress Meetings | Mtg. | | | 0 | Not in contract |
| 33.9 | As-Built Certification (ERP) | EA | 1 | 8 | 8 | For cerfication Required per SWFWMD. As-built/record drawings by Contractor/City. Incl. review of record drawings (4 hrs), provide certifications and submit to SWFWMD (4hrs.) |
| **Construction Phase Services Subtotal** | | | | | **85** | |
| **33. Post Design Services Total** | | | | | **107** | |