



Indian River County BOCC  
Public Works - Stormwater Division  
1801 27<sup>th</sup> Street  
Vero Beach, FL 32960

Attention: Mr. Keith McCully, P.E.

**PROPOSAL FOR CONSTRUCTION MATERIALS TESTING  
OSPREY ACRES FLOWAY AND NATURE PRESERVE  
INDIAN RIVER COUNTY, FLORIDA**

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Andersen Andre Consulting Engineers, Inc. (AACE) is pleased to present this proposal for performing construction materials testing and monitoring services for the proposed Osprey Acres Floway and Nature Preserve project in Indian River County, Florida. AACE is the Geotechnical Engineer-of-Record for this project, and has previously issued a *Subsurface Exploration and Geotechnical Engineering Evaluation* report for the project dated October 26, 2016 (AACE File No. 16-144).

Based on our review of the provided bid documents and construction drawings, and on our prior involvement with the project, we understand that it is proposed to construct a serpentine nutrient removal/water treatment system which will receive an estimated 10-12 million gallons per day of piped water inflow from the adjacent Osprey Marsh polishing pond and from untreated drainage canals. The treatment system will consist of the following interconnected main features (elevations in NAVD-88):

- Initial deep settling basins
  - » Bottom elevation of 11.63 feet
  - » Design water stage of elevation 18.81 feet
- Water lettuce scrubbers/transfer channel
  - » Bottom elevations of 14.5 feet
  - » Design water stages of elevation 18.76 feet and 18.19 feet, respectively
- A filter marsh
  - » Bottom elevation of 16.0 feet
  - » Design water stage of elevation 18.03 feet
- Floway sections "A" and "B"
  - » Bottom elevation of 11.0 feet
  - » Design water stage of elevation 17.50 feet
- Various concrete weir structures with varying crest heights
  
- Floway section "C"
  - » Bottom elevation of 10.0 feet
  - » Design water stage of elevation 16.00 feet

- Floway section “D”
  - » Bottom elevation of 6.0 feet
  - » Design water stage of elevation 16.00 feet
- Weir structure S16 (top-of-weir elevation 15.30 feet) and then a 48-inch diameter CMP discharge connection to the Indian River Farms Water Control District (IRFWCD) Lateral J canal (South Relief Canal) and then to the Indian River Lagoon.
- Miscellaneous structures and piping.

The cross-sections for the various system features are currently planned with 3H:1V side slopes and varying bottom widths. Additional site improvements relative to the project include an operations building, educational trails and fencing, water main installation, paved entrance and internal driveway, parking facilities, concrete loading/compost area, etc. Finally, a Geosynthetic Clay Liner (GCL) will be installed within the settling basings, scrubbers, transfer channels, filter marshes, floways and shallow marshes. Overall, the proposed project construction schedule is 10-months.

We understand that the services for which we are preparing this proposal include:

- Monitor proofrolling and backfilling operations and perform in-place density tests as required by the project specifications.
- Perform in-place density testing for building pads, driveways and parking areas, slab-on-grades, footings, pipe and structure backfill, etc.
- Sample and test compressive strength of concrete for building construction, weirs, footings, slab-on-grade, basins bottom slabs, etc.
- Sample fill and backfill soils for modified Proctor laboratory testing.
- Sample subgrade and base materials for modified LBR laboratory testing.
- Full-time GCL installation monitoring (estimated 3 months).
- Geotechnical and Construction Materials Testing engineering consulting throughout the project duration, as needed.

As such, AACE staff will be on site to observe the work and perform tests to determine substantial compliance (relative to the services of our firm) with the project plans, specifications, and design concepts. AACE staff will not direct the Contractor nor will we have the authority to stop work. Please be aware that neither the presence of our field representatives nor the observation and testing by AACE shall imply our responsibility for defects discovered in the construction work. Further, it is understood that our firm will not be responsible for job or site safety on this project. Job site safety is the sole responsibility of the Contractor.

The proposed budget in this proposal was established based on a “man-hour basis”, rather than a “per-test” basis, since it will be difficult to estimate the precise number of density tests for this kind of project. Another challenge to a “per-test” proposal is the periodic need for a 2<sup>nd</sup> technician (e.g. when one technician is monitoring the GCL installation and cannot break-away for density testing of pipe trench backfill). As such, we are considering, for budgeting purposes, proposing that AACE staff be on site full-time for 6 months out of the overall 10-month construction schedule, including the 3 months of GCL installation monitoring. That would leave another 3 months of “full-time” presence distributed over the remainder of the project, assuming that there will be days where we are not needed, days where maybe 3-4 man-hours will be needed, etc.

Hence, estimate the cost of testing services will be **\$86,505.00** (itemized on page 4). The actual cost of AACE's testing services will be a function of work actually performed in accordance with the fees in our Continuing Services contract with Indian River County. Contractor efficiency, methodology and changes in testing frequencies may affect the overall cost. We will notify you in advance if it appears that the cost estimate will be exceeded.

To authorize us to proceed with this project, please execute and return to us a copy of the attached Professional Services Agreement form or a Purchase Order number. If you have any questions or if we can provide any additional information, please feel free to contact us at your convenience.

Best Regards,  
**ANDERSEN ANDRE CONSULTING ENGINEERS, INC.**



Peter G. Andersen, P.E.  
Principal Engineer



David P. Andre, P.E.  
Principal Engineer

**Estimated Man-Hours (based on an approximate 6-month/30-week presence)**

- Sr. Project Engineer; 30 weeks @ 3 hours/week @ \$110.00/hour ..... \$9,900.00
  - Sr. Field Technician; 30 weeks @ 40 hours/week\* @ \$55.00/hour ..... \$66,000.00
  - Technical Secretary; 40 hours @ \$45.00/hour ..... \$1,800.00
- (\*Assuming 8-hour work days, Monday through Friday)

**Laboratory Testing**

- 15 Proctor Tests @ \$85.00/test ..... \$1,275.00
- 4 LBR Tests @ \$295.00/test ..... \$1,180.00
- Allowance for acceptability testing (organic content, percent fines, carbonate content, etc.) ..... \$1,000.00

**Concrete Testing**

- Estimated 50 sets @ \$85.00/set ..... 4,250.00
- Allowance for cylinder pick-up (not scheduled with other work)  
and limited standby during concrete pours; 20 hours @ \$55.00/hour ..... \$1,100.00

**TOTAL ANTICIPATED TESTING BUDGET ..... \$86,505.00**

The following conditions apply to this project:

- (1) When not present full-time, the Contractor (or Indian River County Representative) must contact Andersen Andre Consulting Engineers, Inc. at (772) 807-9191 a minimum of 24 hours prior to any testing and 48 hours prior to weekend, holiday and evening work.
- (2) Unit rates apply to standard working days, Monday through Friday, 7:30 a.m to 5:00 p.m. Testing and hourly rates will be increased by 50% for weekend, holiday or after-hours services.
- (3) If our testing estimate for a specific work element is insufficient for that particular activity, resources from another work element can be used without prior authorization from the client as long as our total cost estimate is not exceeded. We will notify you in advance if it appears that the cost estimate presented in the attached unit fee schedule will be exceeded.
- (4) Asphalt sampling/testing, is not included herein. We will be pleased to revise this proposal to include such testing, if needed.

