



AGENDA REPORT
February 26, 2019

Approval Re: Authorization to Issue Notice to Proceed for Geotechnical Engineering and Testing Services for the Northern Segment of the St. Johns Heritage Parkway – District 5 (Fiscal Impact: \$281,727.00)

SUBJECT:

Approval Re: Authorization to Issue Notice to Proceed for Geotechnical Engineering and Testing Services for the Northern Segment of the St. Johns Heritage Parkway

FISCAL IMPACT:

FY19/20/21 Funding is budgeted in Local Option Gas Tax Bond 1163/265160.

DEPT/OFFICE:

Public Works

REQUESTED ACTION:

It is requested that the Board of County Commissioners approve and authorize the Public Works Department to issue a Notice to Proceed to Ardaman & Associates, Inc. for geotechnical engineering and testing services for the Northern Segment of the St. Johns Heritage Parkway estimated at \$281,727.00.

SUMMARY EXPLANATION and BACKGROUND:

In accordance with Board direction, staff has completed the coordination of engineering design and permitting for the Northern Segment of the St. Johns Heritage Parkway – the portion from U.S. 192 and extending northward to just west of the I-95 and Ellis Road Interchange. As the project progresses into the construction phase, it is necessary to conduct testing and inspection of the roadway materials. This service will be completed utilizing the Professional Services Agreement for Geotechnical Engineering and Testing Services with Ardaman & Associates, Inc. approved by the Board on September 20, 2016 and entered into agreement effective March 2, 2017. This acquisition of consultant professional services was obtained in conformance with Board Policy 26.

In preparation of the construction phase, the County requested a proposal from Ardaman & Associates, Inc. to provide testing and inspection services for the Northern Segment of the St. Johns Heritage Parkway. The proposal, in the amount not to exceed \$281,727.00, is based on estimated testing quantities and inspection services. The proposal fees conform to the rates included in the Professional Services Agreement. The proposal amount is less than the budgeted amount for this purpose. It is also approximately 2.7 percent of the project's construction bid amount of \$10,482,615.27. This percentage is

significantly lower than what is customarily paid for these services based on general standards recognized within the construction industry. Per Administrative Order 29, Contract Administration, a work order greater than \$100,000 requires Board approval for the authorization to issue a Notice to Proceed to Ardaman & Associates, Inc. for these materials testing and inspection services. Construction of the Northern Segment of the St. Johns Heritage Parkway is anticipated to commence in March 2019.

ATTACHMENTS:

Description

- ▢ **Geotechnical Proposal - St. Johns Heritage Parkway Northern Segment**



Tammy Rowe, Clerk to the Board, 400 South Street • P.O. Box 999, Titusville, Florida 32781-0999

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Tammy.Rowe@brevardclerk.us

February 27, 2019

M E M O R A N D U M

TO: Corrina Gumm, Interim Public Works Director

RE: Item F.11., Authorization to Issue Notice to Proceed for Geotechnical Engineering and Testing Services for the Northern Segment of the St. Johns Heritage Parkway

The Board of County Commissioners, in regular session on February 26, 2019, approved and authorized the Public Works Department to issue a Notice to Proceed to Ardaman & Associates, Inc. for geotechnical engineering and testing services for the Northern Segment of the St. Johns Heritage Parkway estimated at \$281,727.

Your continued cooperation is always appreciated.

Sincerely,

BOARD OF COUNTY COMMISSIONERS
SCOTT ELLIS, CLERK

Tammy Rowe

Tammy Rowe, Deputy Clerk

cc: Finance
Budget



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

December 17, 2018
File No. 1821-227

Brevard County Public Works Department
2725 Judge Fran Jamieson Way, Bldg. A, Suite 20
Viera, Florida 32940

Attention: Ms. Tammy Thomas-Wood

Subject: Budget Estimate for
Construction Materials Testing and Inspection Services
St Johns Heritage Parkway – N. Segment
US 192 to Ellis Road Interchange
Brevard County, Florida

Dear Ms. Thomas-Wood:

Ardaman & Associates, Inc. is pleased to present this budget estimate to provide construction materials testing and inspection services on the above referenced project.

PROJECT DESCRIPTION

It is our understanding that the proposed project will include the construction of a four-lane, divided rural arterial roadway with a length of approximately 0.95 miles. Paved shoulders will be located on each side of the roadway. The roadway will be constructed within previously undeveloped areas beginning just south of US 192 and extending northward to the Ellis Road Interchange project. Additional improvements proposed for the project include concrete sidewalks on both sides of the road, curbs, and median areas. No drilled shaft foundations are included in this project.

Based on information provided by Brevard County Public Works Department personnel, the construction of the subject roadway is anticipated to take approximately 549 calendar days (approximately 18 months). The cost estimates presented in subsequent sections of this proposal are based on the estimated 18 month duration.

SCOPE OF SERVICES

In general the scope of our work for this project is anticipated to include the following services:

Laboratory Testing Services

- Modified and Standard Proctor testing of subgrade, fill, and pipe backfill materials;
- Percent fines, Atterberg limits, organic content, and moisture content testing of stabilized subgrade materials, fill soils, and existing subgrade soils;
- LBR testing of stabilized subgrade and base materials;
- Carbonate content and Atterberg limits testing of base material;
- Extraction/gradation tests of asphaltic concrete; and
- Asphalt core unit weight tests.

We have assumed that the laboratory testing services will be provided on a "will call" basis. That is we will respond to specific requests for testing made by your designated representative(s). Additionally, the Ardaman engineering technicians performing field testing on the project site will monitor the soil and base materials to watch for changes in material type that necessitate additional laboratory testing and will notify the on-site Brevard County representatives of the need for possible additional laboratory testing.

Field Testing Services

- Sampling of roadway materials and pipe backfill materials for laboratory testing;
- In-place density testing (nuclear density gauge method) of roadway subgrade, fill, stabilized subgrade, and base materials;
- In-place density testing of drainage pipe and drainage structure backfill;
- In-place density testing of sidewalk and curb subgrade;
- Hand written entries in the density log book;
- Casting concrete compressive strength test cylinders and concrete slump testing;
- Transportation of concrete cylinders to the Ardaman Cocoa laboratory for testing;
- Sampling of asphaltic concrete during paving operations for laboratory testing;
- Asphalt pavement coring for thickness measurements and laboratory testing; and
- Asphalt plant inspection during paving by a CTQP certified inspector.

The above referenced field services, other than the plant inspection services during paving, will be provided by an Ardaman engineering technician working on site full-time. As requested, Ardaman will make available a second engineering technician to work on-site part-time during heavy construction periods, if requested. The density log book will be kept within the on-site office trailer.

The plant inspection during paving will be provided on a "will call" basis. That is we will respond to specific requests for plant inspection made by your designated representative(s).

Professional Services

- Initial set up of density log book;
- Coordination of asphalt sampling and plant inspection; and
- Preparation of reports documenting the field testing services presented above.

Written reports documenting the results of the laboratory and field testing will be prepared and submitted to the client, and other representatives designated by the client, in an electronic format on a continuous basis during the project.

COST ESTIMATE

Based on the project information presented above and on our understanding of the requested scope of services, we estimate that the costs for construction materials testing and inspection services are as follows:

Laboratory Testing Services:	\$ 55,260.00
Field Testing Services:	\$199,832.00
Professional Services:	<u>\$ 26,635.00</u>
Total Estimated Not to Exceed Cost:	\$281,727.00

We propose to provide the requested testing and inspection services at a not to exceed cost of \$281,727.00. We will provide you with a monthly invoice based on the percentage of completion for the project.

Summaries of our cost estimates for laboratory testing services, field testing services, and professional services are attached. The not to exceed cost presented above and the attached estimates are based on a project duration of 18 months. If the project duration exceeds 18 months, an increase in the project budget may be necessary.

We believe that we have proposed an adequate budget to provide the needed services. However, the total cost of the testing services will be a function of the actual quantities of work performed in accordance with the fee schedule in our contract with Brevard County. Any testing not identified on the attached budget estimates that is required for the project will be charged according to the unit rates presented in the above referenced fee schedule.

CLOSURE

We appreciate the opportunity to submit this estimate and look forward to working with you on this project. If this estimate meets your approval, please indicate your acceptance by issuing a work order. Please contact us if you have any questions or require additional information.

Respectfully,
ARDAMAN & ASSOCIATES, INC.



Dustin M. Cone
Assistant Project Engineer



Jason P. Manning, P.E.
Branch Manager

Attachments: Materials Testing Budget Estimate

Budget Estimate
Laboratory Testing Services
 SJHP – N. Segment
 Brevard County, Florida

	TASK	QUANTITY	UNITS	UNIT COST	TOTAL COST
A.	<u>Subgrade and Fill Testing</u>				
	Laboratory Proctor Tests - Subgrade Soils (one per soil type)	10	each	\$95.00	\$950.00
	Laboratory Proctor Tests - Fill (one per soil type)	20	each	\$95.00	\$1,900.00
	Laboratory Proctor Tests - Fill in Borrow Pits (one per soil type)	10	each	\$95.00	\$950.00
	Laboratory Proctor Tests - Pipe Backfill (one per soil type)	20	each	\$95.00	\$1,900.00
	Percent Fines Tests	10	each	\$40.00	\$400.00
	Atterberg Limits Tests	10	each	\$113.00	\$1,130.00
	Organic Content Tests	10	each	\$35.00	\$350.00
	Moisture Content Tests	10	each	\$19.00	\$190.00
B.	<u>Stabilized Subgrade and Base Testing</u>				
	Limerock Bearing Ratio Tests - Stab. Subgrade	50	each	\$285.00	\$14,250.00
	Limerock Bearing Ratio Tests - Base (one per Lot)	15	each	\$285.00	\$4,275.00
	Percent Fines Tests	65	each	\$40.00	\$2,600.00
	Atterberg Limits Tests	65	each	\$113.00	\$7,345.00
	Organic Content Tests	50	each	\$35.00	\$1,750.00
	Moisture Content Tests	50	each	\$19.00	\$950.00
	Carbonate Content	15	each	\$90.00	\$1,350.00
C.	<u>Concrete Testing</u>				
	Concrete Cylinder Sets (up to 4 cylinders/set) (one per 50 yds)	190	sets	\$50.00	\$9,500.00
D.	<u>Asphaltic Concrete Testing</u>				
	Bitumen Extraction/Gradation Tests - SP Mix (field samples)	22	each	\$210.00	\$4,620.00
	Asphalt Core Density Tests	50	each	\$17.00	\$850.00
ESTIMATED TOTAL COST					\$55,260.00

Notes:

- 1 Estimate one new subgrade Proctor sample every 500 l.f.
- 2 Estimate two new fill Proctor samples every 500 l.f.
- 3 Estimate one new pipe backfill Proctor every 250 l.f.
- 4 Stabilized subgrade LBR tests were estimated based on at least one sample per Lot (per 500 lineal feet of roadway) and based on prior project experience.
- 5 Base LBR tests were estimated based on one sample per Lot (per 500 lineal feet of roadway).
- 6 Estimate two field asphalt samples per day of paving. Ten days of paving are anticipated.
- 7 Four cores per day of paving assumed.

Budget Estimate
Field Testing Services
 SJHP – N. Segment
 Brevard County, Florida

	TASK	QUANTITY	UNITS	UNIT COST	TOTAL COST
A.	<u>In-Place Density, Concrete, and Asphalt Testing</u>				
	Full Time Testing Technician On-Site (max. of 40 hours /week)	3,120	hours	\$53.00	\$165,360.00
	Part Time Testing Technician On-Site (max. of 20 hours /week)	480	hours	\$53.00	\$25,440.00
	Mobilization of Coring Equipment and Generator	4	each	\$113.00	\$452.00
B.	<u>Asphalt Plant Inspection During Paving</u>				
	CTQP Plant Inspector (10 days of paving assumed)	132	hours	\$65.00	\$8,580.00
ESTIMATED TOTAL COST					\$199,832.00

Notes:

- 1 Cancellation of work without notice will be invoiced at the technician's hourly rate.
- 2 In-place density testing, density log book entry, concrete testing, soil sampling, cylinder pickup, asphalt sampling, and asphalt coring will be performed by the full time and/or part time testing technicians.
- 3 Full time testing technician cost above is based on a maximum project duration of 549 calendar days (18 months).
- 4 Full time testing technician cost above is based on a duration of 6 months.

Budget Estimate
Professional Services
 SJHP – N. Segment
 Brevard County, Florida

	TASK	QUANTITY	UNITS	UNIT COST	TOTAL COST
A.	<u>Density Log Book</u>				
	Senior Engineering Technician (initial log book set up)	12	hours	\$65.00	\$780.00
	Project Engineer (initial log book set up)	6	hours	\$103.00	\$618.00
	Project Engineer (log book review)	9	hours	\$103.00	\$927.00
B.	<u>Pavement Testing and Plant Inspection</u>				
	Project Engineer (coordination of testing during paving)	10	hours	\$103.00	\$1,030.00
	Technical Secretary (coordination and scheduling)	6	hours	\$50.00	\$300.00
C.	<u>Preparation of Field Testing Reports and Engineer Review</u>				
	Registered Senior Engineer	20	hours	\$125.00	\$2,500.00
	Project Engineer	160	hours	\$103.00	\$16,480.00
	Technical Secretary	80	hours	\$50.00	\$4,000.00
ESTIMATED TOTAL COST					\$26,635.00

Notes:

- 1 The project engineer will make three trips to the project site during the course of the project to review the density log book.