

February 8, 2018
Revised February 27, 2018

EXHIBIT A

Indian River County
Engineering Division
1801 27th Street
Vero Beach, Florida 32960

Attention: Mr. William Johnson, P.E.... *via e-mail (wjohnson@ircgov.com)*
Roadway Production Engineer

Subject: **Materials Testing Services**
58th Ave Resurfacing/Reclamation from 26th to 49th
IRC Project No. 1324 / FM No. 434840-1-58-01
Indian River County, Florida
Terracon Proposal No. PHB181012

Dear Mr. Johnson:

Dunkelberger Engineering & Testing, Inc., A Terracon Company (Terracon) is providing this proposal for **Materials Testing Services** for construction activities at the subject project in Indian River County, Florida. As requested, we will perform the field work on a unit rate (per test) basis. As such, a four-test minimum charge per trip to the site will apply; sample pick-up will be performed at an hourly rate.

A. PROJECT INFORMATION

The subject project is located on 58th Avenue from 26th Street to 49th Street. The project will involve full-depth reclamation (FDR) of the existing roadway, i.e., pulverization of the existing asphaltic concrete and base course, shoulder widening utilizing the reclaimed material, shoulder widening using traditional stabilization materials, and milling/resurfacing of select areas. The project length is approximately 11,800 lineal feet (2.25 miles). The contract duration is 270 days to substantial completion and 300 days to final completion.

More specifically, the reconstruction will involve pulverization of 12 inches of existing roadway, construction of a 9-inch thick FDR base course, and construction of three inches of asphalt pavement including a 2-inch structural course and 1-inch friction course. The shoulder widening will involve construction a 12-inch thick FDR section ranging from

2 to 7-ft wide, as well as an unpaved 12-inch thick stabilized shoulder on each side of the existing roadway.

Also associated with the project is installation of approximately 224 lineal feet (lf) of underground drainage pipe and two stormwater drainage structures. The purpose of our work is to provide quality assurance (QA) testing and inspection for the county to check the conformity of material composition with the project plans and specifications.

B. SCOPE OF SERVICES

Based on our understanding of the project plans and specifications, we envision that our field sampling/testing services will be required on a periodic or as needed basis over the duration of the project. More specifically, our work will involve the following.

Pipe Backfill, Shoulder Stabilization, Misc. Embankment

- Laboratory Proctors (AASHTO T-180) to determine maximum density of the soils used for pipe backfill.
- In-place density tests of embankment for backfill placed at a frequency of 1 test per 500 lf. Compacted subgrade tests are not anticipated beneath the FDR base.
- In-place density tests of pipe backfill at a frequency of one test per 500 lf (or fraction thereof) for each 6-inch lift of backfill placed.
- Limerock Bearing Ratio (LBR) tests of the in-place LBR materials for the Stabilized Shoulders at a frequency of 1 test every 4,000 linear feet or 3 LBR samples on each side of roadway (total of 6 tests).
- In-place density tests of the LBR Shoulder Stabilization at a frequency of 1 test per 2,000 linear feet each side of roadway (total of 12 tests).

FDR Base Course

- FDR mix design – Review and evaluate the mix design developed by the Contractor for its design approach and procedure if requested by the County and if provided to us for review prior to construction.
- Sieve Analysis test on the virgin materials before injection of emulsion at a frequency of 1 test every 1,000 linear feet per lane (estimated total of 24 tests).
- Maximum Density (Proctor) tests of the in-place FDR base materials at a frequency of 1 test every 1,000 linear feet per lane (estimated total of 24 tests)
- In-place density tests at a frequency of 1 test per 500 linear feet per lane for mainline and 1 test per 2,000 lf for shoulder (estimated total of 112 tests).

Asphalt Plant Testing

A CTQP qualified Asphalt Plant Technician will perform testing on bulk samples of the asphalt mixture for verification purposes as outlined in applicable FDOT specifications. The plant technician will also perform specific gravity testing of the Contractor's cut cores. We understand cutting of the cores will be the responsibility of the Contractor.

Terracon has not been requested to provide field inspection services during placement of the asphalt in the field. However, these services can be provided upon request.

While on-site our field technician will communicate with designated County and Contractor personnel so that items of concern or identified deficiencies can be immediately corrected.

Project Management, Engineering & Reporting

- Engineering oversight and review during the construction to coordinate the aforementioned test program, make site visits, and attend progress meetings.
- Submittal of brief engineering reports documenting our findings and test results.

Our materials testing services will be provided on an as-needed basis as dictated by the pace and methods of construction.

C. COMPENSATION

The material testing services provided will be billed in accordance with our current *2016-2018 Continuing Geotechnical Services Agreement* as illustrated on the line item unit rates in the *Estimated Scope and Budget* (Attachment A). As previously stated, a four-test minimum charge per trip to the site will apply as well as an hourly fee for sample pickup. **Terracon proposes to complete the scope of services as described herein for an estimated fee of \$28,956 and invoiced on a unit rate basis.** If additional services outside the listed project services are required, Terracon will provide such under auspice of a Supplemental Proposal using the same line item unit rates as provided herein.

The quantity of the work performed and factors beyond our control, such as weather and the contractor's schedule/efficiency, will affect the actual cost for our services. You will be invoiced at regular intervals but not less than monthly for services performed. Invoices for our services will be directed to the addressee of this letter unless we are directed otherwise. Payment is due within thirty (30) days following receipt of an invoice.

D. SITE ACCESS AND SAFETY

Indian River County (IRC) shall secure all necessary site related approvals, permits, licenses, and consents necessary to commence and complete the services and will execute any necessary site access agreement.

At Terracon, we all have a personal and uncompromising commitment to everyone going home safely each and every day. Our safety program, *Incident and Injury Free*® is about care and concern for people. It is our personal and organizational commitment at all levels of the company and is where safety is held as a core value as well as an operational priority. Working safely is an inseparable part of working correctly, just as much as other operational priorities, in particular quality, profitability and schedule. *IIF* is our commitment to our people and others, who we value for who they are and what they do. *IIF* is not just something we do, it's in everything we do.

As part of our *IIF* process, we will prepare a "Pre-Task Plan" to identify the potential site safety and job hazards associated with your site. Our Pre-Task Plan will identify and prepare our personnel to be able to handle conditions such as but not limited to traffic control, environmental contamination, site access issues, overhead and underground utilities, adverse weather conditions, and personal protection equipment and will continually be reviewed and reevaluated throughout the field work activities. We understand that each site is unique and may contain different safety conditions and as a company to protect our personnel as well as others, we look at each site individually to identify the potential concerns.

E. TESTING AND SAMPLING

The above services will be provided under an as-requested basis. Additionally, we request a 48-hour notice to schedule our services.

IRC understands that testing and sampling are discrete procedures, and that such procedures indicate conditions only at the depths, locations, and times the procedures were performed. Terracon will provide test results and opinions based only on the field/laboratory tests in the areas tested. IRC understands that testing and sampling are not continuous or exhaustive, and are conducted to reduce – not eliminate – project risk. IRC agrees to the level or amount of testing performed and the associated risk. IRC is responsible (even if delegated to contractor) for notifying and scheduling Terracon so Terracon can perform these services. Terracon shall not be responsible for the quality and completeness of IRC or its contractors work or their adherence to the

Proposal for Materials Testing Services

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project documents, and Terracon's performance of testing and sampling services shall not relieve contractor in any way from its responsibility for defects discovered in its work, or create a warranty or guarantee. Terracon will not supervise or direct the work performed by IRC or its contractors and is not responsible for their means and methods.

F. AUTHORIZATION

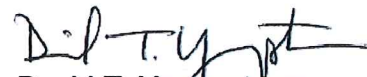
Terracon appreciates the opportunity to submit this proposal and looks forward to rendering the services described herein. Should you accept this proposal, we understand that this work will be performed under a Purchase Order issued by Indian River County.

Should you have any questions concerning this proposal, please feel free to contact Kimberly Roberts or Dave Youngstrom by e-mail (kimberly.roberts@terracon.com or dave.youngstrom@terracon.com), or by phone at 772-343-9787.

Sincerely,

Dunkelberger Engineering & Testing, Inc., A Terracon Company


Kimberly Roberts
Project Manager


David T. Youngstrom
PSL Office Manager

 /FOR
Michael J. O'Connor, P.E.
WPB Office Manager

Attachments: A - *Estimated Scope and Budget*

ATTACHMENT A

**58th Avenue Resurfacing/Reclamation
From 26th St to 49th St
Indian River County, Florida
ESTIMATED SCOPE & BUDGET**

Field Observations & Testing					
	Description	Total Units	Type	Rate	Extended Cost
1	In-Place Density Testing, FDR (1 test/500 ft each lane) *4 test minimum per visit	100	Test	\$24.00	\$2,400.00
2	In-Place Density Testing, FDR Shoulder (1 test/2,000 ft) *4 test minimum per visit	12	Test	\$24.00	\$288.00
3	In-Place Density Testing, Stab. Should (1 test/2,000 ft) *4 test minimum per visit	12	Test	\$24.00	\$288.00
4	In-Place Density Testing, Pipe Backfill (1 test/6-in lift per section placed) *4 test minimum per visit	45	Test	\$25.00	\$1,125.00
5	Sr. Eng. Technician, Sampling (18 trips @ 4 hrs/trip)	72	Hours	\$60.00	\$4,320.00
Sub-Total					\$8,421.00
Laboratory Testing					
	Description	Total Units	Type	Rate	Extended Cost
1	Proctor Test, FDR (T-180)* (1/1,000 ft of each lane)	24	Each	\$90.00	\$2,160.00
2	Proctor Test, Embankment/Pipe Backfill (T-99) (1/Soil Type)	2	Each	\$90.00	\$180.00
3	Limerock Bearing Ratio Test (FM 5-515) (1/4,000 ft of Shoulder)	6	Each	\$300.00	\$1,800.00
4	Material Finer than the No. 200 Sieve	30	Each	\$40.00	\$1,200.00
4	Sieve Analysis (T-27)	30	Each	\$70.00	\$2,100.00
*The Proctor test for the FDR involves laboratory density determination of the field-prepared FDR mixture with emulsions					
Sub-Total					\$7,440.00
Asphalt Observations & Testing					
	Description	Total Units	Type	Rate	Extended Cost
1	FDOT CTQP Certified Plant Inspector (12 days)	120	Hour	\$60.00	\$7,200.00
2	Trip Charge to Asphalt Plant from Office	12	Trip	\$35.00	\$420.00
3					
4					
Sub-Total					\$7,620.00
Engineering & Reporting Services					
	Description	Total Units	Type	Rate	Extended Cost
1	Principal Engineer	15	Hour	\$175.00	\$2,625.00
2	Project Manager/Engineer	30	Hour	\$95.00	\$2,850.00
3	Clerical/Adminstration	0	Hour	\$50.00	\$0.00
4					
Sub-Total					\$5,475.00
Field Observations & Material Testing Services					
1	Subtotal of Materials Testing Services			Total	\$28,956.00
2				x	\$0.00
Total					\$0.00

Total = \$28,956.00