AGENDA

CALL TO ORDER

Invocation
Flag Salute

ROLL CALL

PUBLIC PARTICIPATION: For any items ON THE AGENDA, citizen comments are limited to five (5) minutes per speaker. Speakers will be called when the item is introduced for discussion.

DELETIONS OR AMENDMENTS TO THE AGENDA (City Charter Sec. 4.11)

PRESENTATIONS

Water Quality and Strategic Initiatives - Mike Ulrich, Volusia County Utilities Director

PUBLIC HEARINGS

1. The applicants, Mark and Julie Yarbrough, are requesting City Council approve a Special Exception to allow for a garage apartment at 208 Colomba Road. (Quasi-Judicial)

NEW BUSINESS

2. The City Manager is requesting City Council approve a Piggyback Agreement with MASCi GENERAL CONTRACTOR, INC. for the 2022 Street Resurfacing Project.

3. The City Manager is requesting City Council approval of Stormwater Design, Engineering and Construction Management and Inspection Services from Neel-Schaffer, Inc. for the James Pond Pump Station, Bill Keller Pump Station Upgrade, and Bill Keller Park Irrigation.

4. The City Manager is requesting City Council approval of the Stormwater Engineering Design, Permitting, and Construction Engineering and Inspection (CEI) Services from Kimley-Horn and Associates, Inc. for Individual Project Orders #3-8.

COUNCIL MEMBER REPORTS / COMMUNICATIONS

Member Reports/ Communications

A. Mayor and Council Members

B. City Manager

C. City Attorney

DATE OF UPCOMING MEETING / WORKSHOP

Regular City Council Meeting April 6, 2022, 6:30 p.m.
If any person decides to appeal any decision made by the City Council with respect to any matter considered at this meeting or hearing he/she will need a record of the proceedings, and for such purpose he/she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based (FS 286.0105).

Individuals with disabilities needing assistance to participate in any of these proceedings should contact the City Clerk at least three (3) working days in advance of the meeting date and time at (386) 668-2040.
REQUEST

The applicants, Mark and Julie Yarbrough, are requesting that City Council approve a Special Exception to allow for a garage apartment at 208 Colomba Road. (Quasi-Judicial)

PURPOSE

The purpose of the proposed Special Exception is to allow the applicant to construct a garage apartment.

CONSIDERATIONS

The subject site is located at 208 Colomba Road. The applicant is requesting a Special Exception to permit them to construct a garage apartment in their rear yard. The Future Land Use for the subject property is Residential/Low Density and the zoning is Single-Family Residential (R-4).

Land Development Code Sec 3-92(c) allows for garage apartments to be permitted as Special Exceptions.

Pursuant to Land Development Code Section 1-9, Special Exceptions are certain uses or development situations that may involve consideration of special circumstances or factors to determine that they are appropriate to the specific location and property. In considering a request for a special exception, the City Council shall evaluate the request against the criteria put forth in Section 1-9 (2) Criteria for Special Exceptions attached as Exhibit A.

(2) Criteria for special exceptions. All applications for special exceptions shall be reviewed and approved in accordance with the following criteria:

   a. The proposal shall be consistent with the Comprehensive Plan. The proposed use does not conflict with the Comprehensive Plan.

   b. The establishment, maintenance, or operation of the proposed use shall not be detrimental to or endanger the public health, safety, or general welfare. The proposed use will not likely cause undue harm to the public health, safety or welfare.

   c. The proposed use shall not impede the normal and orderly development and improvement of surrounding properties for uses permitted in the district and shall be consistent with the character of the immediate neighborhood. The proposed use will not affect the character of the area.
d. Adequate measures shall be taken for ingress, egress and parking in a manner consistent with traffic operations and safety. There will be a car port for the garage apartment.

e. The proposal shall not have a substantial adverse effect on any known archaeological, historical, or cultural resource located on or off the site. The proposed garage apartment will not have a substantial adverse effect on any known archaeological, historical, or cultural resource.

f. The proposed design shall minimize adverse effects of the use on adjacent property, including visual impacts. The proposed use would not have any substantial adverse effects on the use of adjacent property.

g. Adequate provision shall be made for buffers, landscaping, public open space, and other improvements necessitated by the proposal. The proposed structure would be naturally buffered from the right-of-way.

h. The use shall meet the lot and building requirements of the district in which it is located unless the requirements are specifically modified by the City Council. A special exception shall meet any specific requirements identified in this Code and no variance shall be granted from these requirements. The applicant is able to meet the lot and building requirements of the district in which it is located.

i. The use shall comply at all times with the approved development plan, and any conditions imposed for establishment and operation of the use. The use will comply if the Special Exception is approved.

The proposed Special Exception was noticed in the Daytona Beach News Journal on Saturday, March 5, 2022. Additionally, the applicant has sent out notification to all neighbors within 1,000 feet as required by the City Ordinance.

FINDINGS OF FACT:

- Land Development Code Section 3-92(c) allows for garage apartments to be permitted as Special Exceptions.
- The Proposed Special Exception meets the review criteria provided by Land Development Code Sec 1-9.
- The Development Review Committee met on February 1st, 2022 and recommended to approve the requested Special Exception.
- There will be a driveway access to the carport.
- The A/C pad and equipment on the east side of the existing dwelling unit will be moved to the west side to make room for a driveway access to the rear yard.
- Driveway construction shall be permitted through the building, residential stormwater, and use permit applications.

COST/FUNDING

N/A
RECOMMENDATION

It is recommended that the City Council approve the Special Exception for Mark and Julie Yarbrough to allow for a garage apartment at 208 Colomba Road.

IMPLEMENTATION

The applicant would be required to apply for a building permit to construct the garage apartment.

ATTACHMENTS

- Survey
- Site plan
- Driveway Exhibit
- Elevation renderings
- Floor plan
LEGAL DESCRIPTION: (OR 7377, PG 3902)

lots 36, 37 and 38, Block "H", PLANTATION ESTATES UNIT B, according to the Plat thereof, recorded in Map Book 11, Page 263, of the Public Records of Volusia County, Florida.

NOTES:

BEARINGS SHOWN HEREON ARE BASED ON THE NORTH RIGHT-OF-WAY LINE OF COLOMBA ROAD AS BEING A BEARING OF 89°55'07"W (WASSUMED).

THE FLOODPLAIN BOUNDARY, IF SHOWN HEREON, WAS SCHEE FROM A LARGE SCALE FEMA FLOOD INSURANCE MAP AND AS SUCH HAS AN INHERENT ERROR OF 10% OF THE FEMA MAP SCALE.

UNDERGROUND UTILITIES AND FOUNDATION MAY EXIST AND HAVE NOT BEEN LOCATED, EXCEPT AS SHOWN.

I HEREBY CERTIFY THAT THE SURVEY SHOWN HEREON WAS MADE UNDER MY RESPONSIBLE CHARGE AND THAT IT HAS BEEN PREPARED IN ACCORDANCE WITH THE STANDARDS OF PRACTICE (MINIMUM TECHNICAL STANDARDS) AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYS AND MAPPERS IN CHAPTER 54-17, OF THE FLORIDA ADMINISTRATIVE CODE, SECTION 472.021, FLORIDA STATUTES.

FLOOD CERTIFICATION:

(Par map dated September 29, 2017)

This is to certify that I have consulted the Federal Insurance Flood Hazard Boundary Map and found the ABOVE named Property IS NOT located in a special flood hazard area, according to Community Panel Map No. 12172C-0520-K Map Panel 620 of 930, Zone "X".

BLACKWELL & ASSOCIATES LAND SURVEYORS, INC
955 W. VOLUSIA AVE. * DELAND, FL * PH: (386) 734-9050
WWW.BLACKWELLSURVEYING.COM

BOUNDARY SURVEY CERTIFIED TO:
BARBARA LOUDON

NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RASUED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

BLACKWELL & ASSOCIATES LAND SURVEYORS, INC. (LE #7871)

BOARD 
ROBERT R. EVERS - P.S. 
FLORIDA CERTIFICATE No. 5875

DATE: 10/31/21
W.0. No. 12-988-92
DRAWN BY: RC
FIELD BOOK: 167/11
CADD FILE: 12-988-92
MS. BARBARA LOUDON  
NEW TWO STORY GUESTHOUSE  
208 COLOMBA ROAD DEBARY, FL. 32713

Proposed Front Elevation

Applicable Codes

Building: Florida Building Code
Plumbing: Florida Plumbing Code
ADA: Florida Accessibility Code
Life Safety: Florida Fire Prevention Code
Mechanical: Florida Mechanical Code
Gas: Florida Building Code
Electrical: National Electrical Code

Building Characteristics

Type: V-B Construction
Non-Sprinklered
Maximum building height of 20'
Two Story
Building Area
Occupancy classification: R - Residential

PROPOSED
Added Conditioned Floor Area: 800 Sq. Ft.
Added Carport Floor Area: 150 Sq. Ft.
Added Utility Room: 71 Sq. Ft.
Total Proposed Area Under Roof: 1021 Sq. Ft.

Drawing Index

A-1: Cover Sheet
A-2: Proposed Exterior Elevations
A-3: Garage Floor Plan
A-4: Second Floor Plan
A-5: Foundation Plan
A-6: Lintel Plan
A-7: Building Sections
A-8: Floor Framing Plan
A-9: Roof Framing Plan
DE-1: Construction Details
A-13: Building Sections
E-1: Electrical Floor Plan
P-1: Plumbing Floor Plan

Property Owner:
BARBARA LOUDON  
208 COLOMBA ROAD  
DEBARY, FL. 32713
PARCEL #:03418080360

EPI  
MICHAEL WOLFE, P.E.  
ENGINEERS P.A.  
311 A SOUTH WOODLAND BOULEVARD  
DELAND, FL. 32744  
PHONE 386-734-8800  
CERTIF NO. 26298

PLANS PREPARED  
December 27, 2021

NEW CONSTRUCTION
NOTE: INTERIOR DIMENSIONS TAKEN TO DRYWALL OR CMU FINISH

PROPOSED SECOND FLOOR PLAN

SCALE 1/2"=1'-0"

WALL LEGEND

COMMUNICATION NOTES:
City Council Meeting  
City of DeBary  
AGENDA ITEM

Subject: 2022 Street Resurfacing Project – Piggyback Agreement – Masci General Contractors  
Attachments: ( ) Ordinance

From: Carmen Rosamonda, City Manager  
( ) Resolution

Meeting Hearing Date: March 2, 2022  
( ) Supporting Documents/ Contracts

( ) Other

**REQUEST**

City Manager is requesting City Council Approval of a Piggyback Agreement with MASCI GENERAL CONTRACTOR, INC. for the 2022 Street Resurfacing Project.

**PURPOSE**

The City of DeBary is continuing to improve its roadway infrastructure and maintain a high level of service for DeBary residents and businesses. Staff continually monitors the City roadways to identify priorities for improvements and repairs. The eleven sites selected for the 2022 Street Resurfacing Project require resurfacing to maintain a smooth travel surface which will reduce maintenance costs and maintain safe pavement conditions for the City roadways. The roadways that are proposed for improvement are; Donald E. Smith Boulevard, Hammock Oak Circle, Hazeltine Drive, Colomba Road, S Shell Road, Cedarwood Court, Caddie Court, Toms Road, City Hall Parking Lot Pavement Repair, DeBary Drive and Plantation Club Drive.

**CONSIDERATIONS**

The recommended Piggyback Agreement is based on a City of Port Orange, Florida, Contract with MASCI GENERAL CONTRACTOR, INC. (MASCI). By public advertisement, the City of Port Orange Florida extended an Invitation to Bid, ITB 19-35 for its Citywide Paving Program on December 20, 2019. MASCI was awarded a Contract for the City of Port Orange, Florida, Citywide Paving Program on April 29, 2020. The Contract Term is two (2) years. The Agreement was renewed by mutual agreement until September 30, 2022. The City Attorney has reviewed the City of Port Orange, Invitation to Bid, ITB 19-35 and the Construction Contract with MASCI and confirmed eligibility of the documents for the Piggyback Agreement by the City of DeBary with MASCI for the 2022 Street Resurfacing Project.

KHARE Construction Services, LLC., has provided Construction Management services for the City to develop the scope of the 2022 Street Resurfacing Project in coordination with City Staff. The scope of the project is depicted on schematic drawings that are included with this report to indicate the location and limits of the proposed project sites and identify the specific costs and quantities by Pay Item. The project schedule of values is determined by applying the Pay Item pricing established under the MASCI and City of Port Orange Contract to the payment quantities determined by KHARE.
KHARE was requested to propose a scope of work and cost estimate for Construction Management and Construction Inspection Services for the 2022 Street Resurfacing Project. Attached is the KHARE proposal and Work Order 0322-01 for services as necessary to complete the Preliminary Construction Contract Administration and provide Construction Inspection Services and Contract Administration for the Construction Phase of the project. The KHARE proposal is in the amount of $29,232.00.

MASCI GENERAL CONTRACTORS is a well-known General Construction and Paving Contractor in Central Florida. MASCI provided similar street resurfacing services for the City of DeBary with good results. MASCI has completed similar resurfacing projects for the FDOT, Volusia County and many other municipalities in the region.

COST/FUNDING

The proposed Contract Amount is $505,489.97. Funding for the project is budgeted from the Public Works – Road Resurfacing – Line Item No. 001-4100-541-4623.

RECOMMENDATION

Recommendation for City Council to approve the Piggyback Agreement with MASCI GENERAL CONTRACTORS, INC. for the 2022 Street resurfacing Project for the amount of $505,489.97.

Recommendation for City Council to approve a 5% contingency budget to be established to provide funding for unforeseen conditions that may arise during construction. The recommended Contingency Amount is $25,274.50.

Recommendation for City Council to approve KHARE Construction Services, LLC, Work Order No. 0322-01 in the amount of $29,232.00 for Construction Management and Construction Inspection Services for the 2022 Street Resurfacing Project.

IMPLEMENTATION

The preliminary schedule for MASCI to start the project is April/May 2022. The project is expected to be complete approximately 30 days after Notice to Proceed.

ATTACHMENTS

Citywide Map – Key Plan
Site Plan Maps – Project No. 1 through Project 11
KHARE Proposal – Construction Management Services
Work Order 0322-01 KHARE
PROJECT MEMORANDUM

DATE: February 22, 2022

TO: Carmen Rosamonda, City Manager

FROM: Kevin Hare, Construction Services Manager

SUBJECT: 2022 Street Resurfacing Project Proposal for Construction Management and Inspection Services KHARE Construction Services, LLC - Work Order No. 0322-01

Carmen,

As you requested, KHARE Construction Services, LLC proposes to provide Construction Management and Construction Inspection services to the City of DeBary for the 2022 Street Resurfacing Project according to the Scope of Services below;

**SCOPE OF SERVICES**

- Preliminary planning, data collection and development of project scope.
- Review Master Contract Agreements advertised by other Public Agencies for use as Piggyback Agreement for DeBary with Masci General Contractors, Inc.
- Work with Masci General Contractors to apply pricing from Master Agreement with City of Port Orange, Florida for City of DeBary project.
- Develop spreadsheet and site drawings to be used for Contract Documents and for presentation to City Council for approval of project scope and Contract with Masci.
- Provide presentation of recommendations for Scope of Project for City Council Review.
- Coordinate Purchase Order for Masci based on City Council approval to initiate Payment Bond and Performance Bond.
- Review of Performance Bond Payment Bond.
- Correspondence and coordination for Contract execution.
- Conduct Pre-Construction conference with Contractor and Staff.
- Inspection Services for 2022 Street Resurfacing Project – daily monitoring and inspections of Contractor asphalt resurfacing operations – Monitor traffic, resident issues, clean-up, noise control and dust control.
- Construction Management Services – monitor and quantify work performed to support payment to Contractor – review Contractor's Pay requests – recommend payment to Contractor – coordinate payment with Finance Department.

**PRELIMINARY COSTS**

The remaining balance of the FY 2020 Street Resurfacing Project budget for the Construction Management and Inspection Services was $2,027.68. At the direction of the City Manager, KHARE Construction Services, LLC (KHARE) began preliminary work on the 2022 Street Resurfacing Project beginning August 20, 2021. For the period August 20, 2021 to September 14, 2021, KHARE and was compensated from the remaining balance of the 2020 budget in the amount, $2,027.68.
KHARE continued work on the 2022 Street Resurfacing Project for the Period September 15, 2021 to September 30, 2021. Work Order No. 1021-01 was approved to compensate KHARE for preliminary work on the 2022 Street Resurfacing Project the period September 14, 2021 to September 30, 2021. KHARE and was compensated the amount, $1,800.32.

KHARE continued preliminary work on the 2022 Street Resurfacing Project for the Period October 1, 2021 to January 13, 2022. Work Order No. 0222-01 was approved on February 16, 2022 to compensate KHARE for preliminary work on the 2022 Street Resurfacing Project for the period October 1, 2021 to January 13, 2022. KHARE and was compensated the amount, $4,408.00.

Total Amount Paid to KHARE for the period, 8/20/21 to 1/13/22 - $8,236.00

ESTIMATE OF COST TO COMPLETE PROJECT SERVICES - January 14, 2022 to Project Completion.

KHARE continued preliminary work on the 2022 Street Resurfacing Project for the period January 14, 2022 to February 18, 2022. The scope of the Work is documented on detailed time sheets for administrative efforts to develop and negotiate the Piggyback Agreement with MASI. The documented billable hours for the period January 14, 2022 to February 18, 2022 is fifty two (52) hours.

KHARE proposes to continue Construction Contract Administration and Preliminary Construction Management Services for the project as required to initiate the Contraction Phase of the project. Estimated Billable Hours – 20 hours

KHARE proposes to provide Construction Inspection Services to confirm Contract compliance by the Contractor for the 2022 Street Surfacing Project. The Construction Phase of the project is estimated to have a duration of one (1) month from the date of Notice to Proceed. Estimated Billable Hours – 20 days – 8 hours each day – 160 hours

KHARE proposes to complete the Construction Contract Administration services for the 2022 Street Surfacing Project to confirm that all Work is completed by MASI and the Contractor’s Payment Application is reviewed for accuracy and compliance with the Contract documents. The Estimated Billable Hours – 20 hours

Total Hours for the Construction Phase -252 Hours

Work Order 0322-01 is attached for your approval. Work Order 0322-01 includes a total of two hundred fifty two (252) billable hours for KHARE services to complete Construction Management and Construction Inspection services for the 2022 Street Resurfacing Project. The approved Billable Rate for Construction Manager Services by KHARE Construction Services, LLC is $116.00.

The total amount of Work Order 0322-01 is $29,232.00.

If you have questions or comments please let me know.

End of Memorandum
Exhibit B
WORK ORDER
FOR
MASTER AGREEMENT FOR PUBLIC WORK PROJECTS
CONSTRUCTION MANAGEMENT SERVICES
CONSTRUCTION COSTS LESS THAN $2,000,000

WORK ORDER NO.: KHARE – 0322-01

PROJECT: Construction Management and Inspection Services for FY 2022 Street Resurfacing Project

CITY: City of DeBary, Florida

COUNTY: Volusia County

CONSTRUCTION MANAGER: KHARE Construction Services, LLC.

CONSULTANT’S ADDRESS: 1457 Mt. Laurel Drive
Winter Springs, Florida 32708

Execution of the Work Order by CITY shall serve as authorization for the CONSTRUCTION MANAGER to provide for the above project, professional services as set out in the Scope of Services attached as Exhibit “A,” to that certain Agreement of JANUARY 20, 2021 between the CITY and the CONSTRUCTION MANAGER and further delineated in the specifications, conditions and requirements stated in the following listed documents which are attached hereto and made a part hereof.

ATTACHMENTS:

[X] DRAWINGS / PLANS / SPECIFICATIONS
[X] PROPOSAL AND SCOPE OF SERVICES
[ ] SPECIAL CONDITIONS
[X] TIME SHEETS

The CONSULTANT shall provide said services pursuant to this Work Order, its attachments and the above-referenced Agreement which is incorporated herein by reference as if it had been set out in its entirety. Whenever the Work Order conflicts with said Agreement, the Agreement shall prevail.

TIME FOR COMPLETION: The work authorized by this Work Order shall be commenced and completed as directed by the City Manager.
METHOD OF COMPENSATION:

(a) This Work Order is issued on a:

[X] TIME BASIS METHOD WITH A NOT-TO-EXCEED AMOUNT
[ ] TIME BASIS METHOD WITH A LIMITATION OF FUNDS AMOUNT

(b) If the compensation is based on a "Fixed Fee Basis," then the CONSTRUCTION MANAGER shall perform all work required by this Work Order for the sum of __________________ DOLLARS ($ ). In no event shall the CONSTRUCTION MANAGER be paid more than the Fixed Fee Amount.

(c) If the compensation is based on a "Time Basis Method" with a Not-to-Exceed Amount, then the CONSULTANT shall perform all work required by this Work Order for a sum not exceeding TWENTY NINE THOUSAND TWO HUNDRED THIRTY TWO DOLLARS AND NO CENTS ($29,232.00). The CONSTRUCTION INSPECTION AND MANAGEMENT compensation shall be based on the actual work required by this Work Order as directed by the City Manager.

(d) If the compensation is based on a "Time Basis Method" with a Limitation of Funds Amount, then the CONSULTANT is not authorized to exceed the limitation of Funds amount of __________________ DOLLARS ($ ) without prior written approval of the CITY. Such approval, if given by the CITY, shall indicate a new Limitation of Funds amount. The CONSTRUCTION MANAGER shall advise the CITY whenever the CONSTRUCTION MANAGER has incurred expenses on this Work Order that equals or exceeds eighty percent (80%) of the Limitation of Funds amount. The City shall compensate the CONSTRUCTION MANAGER for the actual work performed under this Work Order.

Payment to the CONSTRUCTION MANAGER shall be made by the CITY in strict accordance with the payment terms of the above-referenced Agreement.

It is expressly understood by the CONSTRUCTION MANAGER that this Work Order, until executed by the CITY, does not authorize the performance of any services by the CONSTRUCTION MANAGER and that the CITY, prior to its execution of the Work Order, reserves the right to authorize a party other than the CONSTRUCTION MANAGER to perform the services called for under this Work Order if it is determined that to do so is in the best interest of the CITY.

IN WITNESS WHEREOF, the parties hereto have made and executed this Work Order for the purposes stated herein.

KHARE Construction Services, LLC

By: __________________________________________

Kevin J Hare, President

Date: ______________________________

CITY OF DEBARY, FLORIDA

By: __________________________________________

Date: ______________________________
PROJECT NO. 4 - COLOMBA ROAD
End of Double Yellow Stripe

Existing Construction Joint

Project No. 6 - Cedarwood Court

Project 7 - Caddie Court

Areas for Mill and Resurface

Project 6 - Project 7 - Project 11
Project No. 5 - South Shell Road
Toms Road

Mansion Boulevard

Palm Road

2226.00 LF

Project No. 8 - Toms Road
Pavement Repair Area
40 x 30  133 SY

Project No. 9 - City Hall Park Lot - Pavement Repair
Plumosa Road

Project 10A

Sepp Road

Project 10C - Intersection

DeBary Drive

Project 10B

21.00 FT

261.00 FT

DeBary Drive

1254.00 LF

Project 10B

1584.00 LF

Project 10D

Palm Road

Project No. 10 - DeBary Drive
AGREEMENT BETWEEN
CITY OF DEBARY, FLORIDA

AND

MASCI GENERAL CONTRACTOR, INC.

PIGGYBACK AGREEMENT TO CITY OF PORT ORANGE STANDARD CONTRACT FOR SERVICES WITH
MASCI GENERAL CONTRACTOR, INC., DATED APRIL 29, 2020

THIS AGREEMENT (this “Agreement”) is entered into by and between CITY OF DeBARY, a Florida municipal corporation, whose address is 16 Colomha Road, DeBary, Florida 32713 (hereinafter referred to as “City”), and MASCI GENERAL CONTRACTOR, INC., a Florida Profit Corporation, with its principal office located at 5752 South Ridgewood Avenue, Port Orange, FL 32127 (hereinafter referred to as “Masci”).

WHEREAS, the City desires to engage a vendor to provide road resurfacing services to the City, in particular, those road resurfacing and other ancillary and related services required in connection with a series of resurfacing projects collectively referred to as the City’s 2022 Street Resurfacing Project (the “2022 Project”); and

WHEREAS, on December 20, 2019, the City of Port Orange (“Port Orange”) issued Invitation to Bid No. 19-35 for its Citywide Paving Program (“ITB”), in which it solicited competitive sealed bids for installation, replacement, and repair of existing roads and pavement structures, including sidewalks, driveway aprons, curbs, gutters, and bike paths located within the city (i.e., road resurfacing); and

WHEREAS, such ITB was subsequently modified by Addenda Nos. 1, 2, and 3, issued by Port Orange in early 2020 on January 8th, 10th, and 14th respectively; and

WHEREAS, after receiving 4 bids in response to the ITB, Port Orange staff issued a Notice of Intent to Award, in which it identified Masci as one of three lowest bidders recommended for award;

WHEREAS, on April 21, 2020, the Port Orange City Council approved award of the ITB to Masci, and on April 29, 2020, the City of Port Orange and Masci entered into City of Port Orange Standard Contract for Services, dated April 29, 2020 (the “Original Government Contract”);

WHEREAS, the City has determined that use and procurement of Masci’s goods and services pursuant to the terms, conditions, and pricing of the publicly procured Original Government Contract, is cost-effective and in the best interest of the City, and therefore, the City approves this Agreement pursuant to § 14.C. of the City of DeBary Purchasing Policy and Procedures.

NOW THEREFORE, for good and valuable consideration, which the parties acknowledge, the City agrees to enter into and does hereby enter into this Agreement with
Masci, and Masci agrees to enter into and does hereby enter into this Agreement with the City for the Scope of Services as set forth herein:

1. **RECITALS:** The foregoing Recitals are true and correct and are incorporated herein as material provisions of this Agreement by this reference.

2. **SERVICES.**

   (A) **Modification of Original Government Contract.** Masci shall provide the City with road and pavement resurfacing services in accordance with the terms, conditions, and pricing of the Original Government Contract between the Port Orange and Masci, which contract and its associated contract documents are attached hereto as **Exhibit “A”** and incorporated herein, except that the “City of DeBary” will be substituted for “City,” “City of Port Orange,” “Port Orange,” or other such term(s) as may be used to refer to the original contracting agency, and any references to “City,” “City of Port Orange,” or “Port Orange” staff or other contracting agency personnel and staff will be read to refer to functionally equivalent or corresponding City of DeBary personnel and staff. The scope of services and other terms and conditions of the Original Government Contract are hereby incorporated into this Agreement as material terms and conditions except as otherwise modified by this Agreement. Any references to statutes, ordinances, rules, resolutions, or code provisions not applicable to the City of DeBary will be deemed stricken from the Original Government Contract and not be applied to or in the construction of this Agreement. All notices required to be sent or provided to Port Orange must instead be provided to the City as set forth in paragraph 8 of this Agreement. If the terms of this Agreement conflict with the terms of the Original Government Contract, the terms of this Agreement will control to the extent of such conflict. Similarly, the terms and conditions of the State of Florida's Participating Addendum will govern and control to the extent any such terms and conditions conflict with the Master Agreement. The City will have no liability or responsibility for or concerning Masci’s products or services provided to Port Orange, or any other governmental entity or agency piggybacking upon or otherwise utilizing the Original Government Contract. Nothing under this Agreement will require the City to order or otherwise purchase any minimum amount of equipment or services.

   (B) **Scope of Work as Applied to the City.** The City is entering into this Agreement with Masci for the completion of those road resurfacing projects identified in **Exhibit “B”** – **2022 Street Resurfacing Project – Summary Project List and Cost**, which is attached hereto and incorporated herein. A breakdown of the total estimated cost and applicable unit pricing for each project is as set forth in **Exhibit “C”** – **2022 Street Resurfacing Project – Location and Cost Information Sheet**, attached hereto and incorporated herein. The location of each project to be completed under the 2022 Project is as depicted in the 2022 Street Resurfacing Project map attached hereto and incorporated herein as **Exhibit “D.”** Masci shall commence each such project upon the receipt of a written task assignment or notice to proceed for each such project from the City, and Masci shall not commence any such work until so assigned. Such work is to be assigned at the City’s discretion and at such times when the City is prepared to proceed with same given current conditions, staffing, and available funding.

3. **TERM/TERMINATION.** The initial term of this Agreement will be from the Effective Date until completion of the 2022 Project, unless terminated earlier in accordance with
this Agreement. Thereafter, the City will have the option to extend this Agreement for up to two additional one-year periods upon satisfactory performance by Masci and as deemed in the best interest by the City. The initial term together with any renewal term hereunder will be collectively referred to in this Agreement as the “Term.” The termination provisions of the Original Government Contract are incorporated herein by this reference.

4. WARRANTY. All the services and products to be provided or performed by Masci must be in conformance with commonly accepted industry and professional codes and standards, ordinances, resolutions, and standards of the City and the legal compliance provisions of this Agreement.

5. CITY LOGO. Masci may not use the City’s logo unless otherwise authorized in writing by the City Manager. Masci’s or its employee’s or agent’s misuse of the City’s logo will constitute a material default of this Agreement and basis for immediate termination of this Agreement upon written notice, and be subject to other rights and remedies that the City may have at law and in equity.

6. INSURANCE. Within ten (10) days from the Effective Date and prior to rendering services to the City, Masci shall provide the City with any certificates of insurance evidencing insurance coverage as was or is required by the Original Government Contract. To the extent that Masci was required to acquire and maintain any such policies by the Original Government Contract, Masci must acquire and maintain any such policies pursuant to this Agreement. Masci must list the City as an additional insured or named insured on each such policy if required to do so with regard to Port Orange under the Original Government Contract. Masci must maintain such required insurance coverages throughout the Term of this Agreement and for such time following the expiration or termination of this Agreement as may be or may have been required by the Original Government Contract.

7. GOVERNING LAW.

   (A) Laws/Venue/Mediation. This Agreement is governed by and to be construed in accordance with the laws of the State of Florida. Regardless of anything herein to the contrary, the sole and exclusive venue for any litigation arising out of or concerning this Agreement, including its exhibits and performance of services hereunder will, if in state court, be in Volusia County, Florida before County Court or Circuit Court (as appropriate) in and for Volusia County, Florida, or, if in federal court, the Middle District of Florida, Orlando Division.

Any disputes, claims, or counterclaim between City and Masci arising out of or in connection with this Agreement that cannot be amicably resolved by the parties through good faith negotiations must first be submitted to nonbinding mediation for resolution. As a condition precedent to the filing of any suit or other legal proceeding, the parties shall endeavor to resolve claims, disputes, or other matters in question by mediation. The exclusive method to initiate mediation is for either party to serve a written request for same on the other party. The parties shall, by mutual agreement, select a mediator within fifteen (15) days of the date of the request for mediation. If the parties cannot agree on the selection of a mediator, then the City shall select the mediator who, if selected solely by the City, will be a mediator certified by the Supreme Court of Florida. No suit or other legal proceeding may
be filed until (i) the mediator declares an impasse, which declaration, in any event, must be issued by the mediator not later than sixty (60) days after the initial mediation conference; or (ii) sixty (60) days has elapsed since the written mediation request was made if the other party refuses to or has not committed to attend mediation; provided however, a lawsuit may be filed prior to the satisfaction of the mediation requirement in order to preserve a claim that will lapse due to an immediate forthcoming expiration of an applicable statute of limitation or repose or to obtain emergency injunctive relief. If a lawsuit is filed prior to the completion of the mediation requirement, the lawsuit must be abated upon motion of either party until the mediation requirement has been satisfied, except in the case of a cause of action for emergency injunctive relief. The parties must share the mediator's fee equally. The mediation must be held in Volusia County, Florida, unless another location is mutually agreed upon in writing by the parties. Agreements reached in mediation are enforceable as settlement agreements in any court having jurisdiction over same. These alternative dispute resolution procedures supersede and replace any other alternative dispute resolution procedures required or imposed by the Original Government Contract.

(B) **Sovereign Immunity.** Nothing contained in this Agreement or any record or communication arising out of or concerning this Agreement may be considered or deemed a waiver of the City’s sovereign immunity protections or of any other privilege, immunity, or defense afforded to the City and its officials, officers, agents, and employees under law. Regardless of anything set forth in any section, part, or portion of this Agreement to the contrary, nothing in this Agreement may be deemed as a waiver of immunity or limits of liability of the City beyond any statutory limited waiver of immunity or limits of liability that may have been or may be adopted by the Florida Legislature, and the cap on the amount and liability of the City for damages, regardless of the number or nature of claims in tort, equity, or contract, may not exceed the dollar amount set forth by the Florida Legislature for tort. Nothing in this Agreement may inure to the benefit of any third party for the purpose of allowing any claim against the City, which claim would otherwise be barred under the doctrine of sovereign immunity or by operation of law.

(C) **Non-Appropriation.** Regardless of anything to the contrary contained in this Agreement, the City’s payment and performance of obligations under this Agreement for each and every fiscal year of the City’s beyond the fiscal year when the Agreement is executed shall be subject to discretionary annual appropriation by the City’s City Council of funds therefore. When funds are not appropriated or otherwise made available to support the continuation of payment and performance in a subsequent fiscal period, this Agreement must be deemed terminated on the last day of the fiscal period for which appropriations were made without further cost, penalty, or obligation to the City, provided that the City will remain responsible for all products and services requested by the City and provided by Masci.

(D) **No Damages Against City for Delay.** Notwithstanding any other provisions of this Agreement, including the Original Government Contract incorporated herein, Masci’s exclusive remedy for delays, impacts, disruption, acceleration, resequencing, and interruptions in performance of the services or provision of products caused by events beyond Masci’s and its employees’, materialmen’s, subcontractors’, and agents’ control, including delays, impacts, disruption, acceleration, resequencing and interruptions claimed to be caused by or attributable to the City or its officials, officers, employees and agents (or any combination thereof), will be a
claim for and be limited to an equitable extension of time under the applicable service authorization. Without limiting the foregoing, Masic is not entitled to costs for remobilization after a delay, impact, disruption, acceleration, resequencing, or interruption in the performance of the services has occurred.

(E) Public Records Law. In performing services under this Agreement to the City, Masic shall comply with the Florida’s Public Records Act (Chapter 119, Florida Statutes) including with all “Contractor” provisions of Section 119.0701(2), Florida Statutes.

IF MASIC HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO MASIC’S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT: Annette Hatch, City Clerk, 16 Colomba Road, DeBary, Florida 32713; Email – ahatch@debary.org; Telephone – (386) 601-0219.

By entering into this Agreement, Masic acknowledges and agrees that any records maintained, generated, received, or kept in connection with, or related to the performance of services provided under, this Agreement are public records subject to the public records disclosure requirements of § 119.07(1), Florida Statutes, and Article I, section 24 of the Florida Constitution. Pursuant to § 119.0701, Florida Statutes, any contractor entering into an agreement for services with the City is required to:

(i) Keep and maintain public records required by the City to perform the services and work provided pursuant to this Agreement.

(ii) Upon request from the City’s custodian of public records, provide the City with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.

(iii) Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Agreement term and following completion or termination of the Agreement if the Agreement does not transfer the records to the City.

(iv) Upon completion or termination of the Agreement, transfer, at no cost, to the City all public records in the possession of Masic or keep and maintain public records required by the City to perform the service. If Masic transfers all public records to the City upon completion or termination of the Agreement, Masic shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If Masic keeps and maintains public records upon completion or termination of the Agreement, Masic shall meet all applicable requirements for retaining public records as set forth in the applicable retention schedule for State and Local Government Agencies, which schedule is published and maintained by the Florida Department of State, Division of Library and Information Services. All records stored electronically must be provided to
the City, upon request from the City’s custodian of public records, in a format that is compatible with the information technology systems of the City.

Requests to inspect or copy public records relating to the Agreement must be made directly to the City. If Masci receives any such request, Masci shall instruct the requestor to contact the City. If the City does not possess the records requested, the City shall immediately notify Masci of such request, and Masci must provide the records to the City or otherwise allow the records to be inspected or copied within a reasonable time.

Masci acknowledges that failure to provide the public records to the City within a reasonable time may result in the assessment of penalties under § 119.10, Florida Statutes. Masci further agrees not to release any records that are statutorily confidential or otherwise exempt from disclosure without first receiving prior written authorization from the City. Masci agrees to indemnify, defend, and hold the City harmless from and against any and all claims, damage awards, penalties, sanctions, and causes of action arising from Masci’s failure to comply with the public records disclosure requirements of section 119.07(1), Florida Statutes, or by Masci’s unauthorized disclosure or release of public records that are exempt or confidential and exempt from the public records disclosure requirements, including, but not limited to, any third party claims or awards for attorney’s fees and costs arising therefrom. Masci authorizes the City to seek declaratory, injunctive, or other appropriate relief against Masci from a Circuit Court in Volusia County, Florida on an expedited basis to enforce the requirements of this section. This paragraph will survive expiration and termination of this Agreement.

(F) Legal Compliance.

(i) Masci hereby represents and warrants to the City that Masci has the knowledge, experience and skill to provide the products and perform the services required to be performed by it hereunder; that Masci will comply with all applicable federal, state and local laws and codes, including, without limitations, all professional registration requirements (both corporate and individual for any required basic disciplines); and that it shall perform said services and provide said products in accordance with generally accepted professional standards, in the most expeditious and economical manner, and consistent with the best interest of City.

(ii) Masci and its employees and agents shall promptly observe, comply with, and execute the provision of any and all present and future federal, state, and local laws, rules, regulations, requirements, ordinances, and orders (including Resolutions, Codes and Ordinances of the City of DeBary) which may pertain or apply to the Services that may be rendered hereto, or to the wages paid by Masci to its employees. MASCI shall also require, by contract, that all sub-consultants shall comply with the provisions of this subsection.

(iii) Masci shall, during the Term of this Agreement, procure and keep in full force, effect, and good standing all necessary licenses, registrations, certificates, and
other authorizations as are required by local, state, or federal law, in order for Masci to render its services, products, or work as may be required herein.

(iv) Masci may not engage in any action that would create a conflict of interest in the performance of the actions of any City official, officer, employee, or other person during the course of performance of, or otherwise related to, this Agreement or which would violate or cause others to violate the provisions of Part III, Chapter 112, Florida Statutes, relating to ethics in government.

(v) Masci warrants that it has not employed or retained any company or person, other than a bona fide employee working solely for Masci to solicit or secure this Agreement or the Original Government Contract and that it has not paid or agreed to pay any person, company, corporation, individual or firm, other than a bona fide employee working solely for Masci, any fee, commission, percentage, gift, or other consideration contingent upon or resulting from the award or making of this Agreement. For the breach or violation of this provision, the City shall have the right to terminate this Agreement without liability.

(G) **Severability.** In the event any provision hereof is determined to be unenforceable or invalid, such unenforceability or invalidity shall not affect the remaining provisions of this Agreement, which shall remain in full force and effect. To that extent, this Agreement is deemed severable.

(H) **Carryover of Certifications and Representations.** Masci represents and warrants that the information contained within the certifications and statements made by Masci in response to the initial solicitation issued by Port Orange and within the Original Government Contract are true and correct on the Effective Date of this Agreement, and such certifications, representations, and warranties are hereby extended to the City.

(I) **False Claims.** If Masci is unable to support any part of its claim and it is determined that such inability is attributable to misrepresentations of fact or fraud on the part of Masci, Masci will be liable to the City for an amount equal to such unsupported part of the claim in addition to all costs to the City attributable to the cost of reviewing said part of Masci’s claim. The City and Masci acknowledge that the “Florida False Claims Act” provides civil penalties not more than $10,000.00 plus remedies for obtaining treble damages against contractors or persons causing or assisting in causing Florida governmental entities to pay claims that are false when money or property is obtained from a Florida governmental entity by reason of a false claim. Masci agrees to be bound by the provisions of the Florida False Claims Act for purposes of this Agreement and the services performed hereunder.

8. **NOTICE.** Whenever in this Agreement it is necessary to give notice or demand by either party to the other, such notice or demand must be given in writing and sent by certified or registered mail, return receipt requested, and addressed as follows:

To Masci: Leonel Masci
President  
5752 South Ridgewood Avenue  
Port Orange, FL 32127  

To City:  
City of DeBary  
Attn: City Manager  
16 Colomba Road  
DeBary, Florida 32713  

9. E-VERIFY. Masci shall comply with § 448.095, Florida Statutes, effective January 1, 2021, and register with and utilize the U.S. Department of Homeland Security’s E-Verify system to verify the employment eligibility of all new employees hired by Masci. Furthermore, any subcontract Masci enters into with a subcontractor or subrecipient to perform work under this Agreement must contain the following language: "The subcontractor must comply with § 448.095, Florida Statutes, and register with and utilize the U.S. Department of Homeland Security’s E-Verify system to verify the employment eligibility of all new employees hired by Masci on or after the effective date of this contract and thereafter during the remaining term of such contract.” If Masci fails to comply with the foregoing or § 448.095 or § 448.09(1), Florida Statutes, the City will take action as required by § 448.095(2)(c), Florida Statutes, which may include termination of this contract. If the City terminates this contract due to Masci’s or a subcontractor’s (or subrecipient’s) failure to comply with § 448.095 or § 448.09(1), Florida Statutes, Masci will be liable to the City for any additional costs or expenses incurred by the City as a result of the termination of this Agreement. Furthermore, Masci agrees to indemnify, defend, and hold harmless the City from and against any fines, sanctions, or penalties levied against the City by a governmental agency arising from the Masci’s failure or alleged failure to comply with this paragraph, including, but not limited to, the City’s loss or repayment of grant funds. Pursuant to § 448.095(2)(d), Florida Statutes, any challenge to termination under this provision must be filed in the Circuit Court no later than 20 calendar days after the date of termination.

10. INDEMNIFICATION (§ 725.06, Florida Statutes). If the Original Government Contract or this Agreement constitutes a contract subject to the limitations of § 725.06, Florida Statutes, any indemnification provision contained therein (or herein) will be deemed or otherwise interpreted to provide the indemnification allowed by such statute and require Masci to indemnify and hold harmless the City, including its officers and employees, from liabilities damages, losses and costs, including, but not limited to, reasonable attorney’s fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of Masci and persons employed or utilized by Masci in the performance of this Agreement. Furthermore, if applicable law requires that there be a maximum monetary limit of indemnification for which Masci is responsible so that any such indemnification provision remains enforceable, such limit for any indemnification provision(s) contained within this Agreement or the Original Government Contract is two million dollars ($2,000,000) per occurrence, which the City and Masci agree bears a commercially reasonable relationship to this Agreement and the work and services to be performed hereunder.
11. EFFECTIVE DATE. The Effective Date of this Agreement shall be the date when the last of the parties has executed this Agreement and upon its approval by the City of DeBary City Council.

12. SURVIVABILITY. Termination or expiration of this Agreement will not affect any rights of either party arising out of any event or occurrence prior to termination, including any obligation of either party to indemnify, defend, or hold harmless one another for acts or omissions performed in connection with this Agreement or to pay any amount which became due and payable under the terms and conditions of this Agreement prior to expiration or such termination. Furthermore, any terms or conditions that contemplate continued performance beyond expiration or termination of this Agreement (e.g., provisions relating to the maintenance of public records, venue for or jurisdiction over disputes arising from this Agreement, or procedures for resolution of disputes under this Agreement) shall continue in full force and effect subsequent to such termination or expiration.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement as of the day and year entered by the last party executing this Agreement as written below.

Masci General Contractor, Inc.

Leonel Masci
Digitally signed by Leonel Masci
Date: 2022.03.04
16:26:25 -05'00'

By: Leonel Masci, President

City of DeBary, a Florida municipal corporation

By: Carmen Rosamonda

Its: City Manager

Approved by the City Council on ____________, 2022.
This Standard Contract for Services ("Contract") is entered into this 29th day of April, 2020, by and between the CITY OF PORT ORANGE, a Florida municipal corporation, whose principal address is 1000 City Center Circle, Port Orange, Florida 32129 (the "City"), and MASI GENERAL CONTRACTOR, INC., a Florida corporation whose principal address is 5752 South Ridgewood Avenue, Port Orange, Florida 32127 ("Contractor"). The City and Contractor are collectively referred to herein as the "Parties."

1. Provision of Services

(a) The Contractor hereby agrees to provide installation, replacement, and repair of existing roads and pavement structures, including sidewalks, driveway aprons, curbs, gutters, and bike paths, and as further described in Intent to Bid 19-35 ("ITB 19-35"), Addendum No. 1, Addendum No. 2, and Addendum No. 3, which are made a part hereof by reference. Contractor's Proposal, and Scope of Services as referenced in ITB 19-35 is attached hereto as Exhibit "1," and made a part hereof by reference. A complete copy of ITB 19-35, Addendum No. 1, Addendum No. 2, Addendum No. 3, and Contractor's Proposal is available in the Office of the City Clerk.

(b) The time, manner and place for performance of such services shall be:

Term: The initial term of this Contract shall become effective on the last date the Contract is signed by the Parties and shall continue for a period of two (2) years (the "Initial Term").

Renewals: Upon written agreement of the Parties, this Contract may be renewed for up to two (2) one-year periods, subject to review and approval of the City Manager and budget appropriation.

Manner and Place: The work shall be performed in accordance with and in a manner as required by all current federal, state, county, fire, building and land development codes, laws, ordinances and regulations, and with applicable permits and licenses per the City Code of Ordinances.

Time and Essence: Contractor acknowledges that time is of the essence for this Contract.

Authorization for Services: This Contract standing alone does not authorize the purchase of any goods or services or require the City to place any orders for goods or service. Authorization for the purchase of goods or services from Contractor under this Contract shall be upon issuance of a Notice to Proceed and a written Purchase Order issued by the City and executed by the City Manager. The City reserves the right to contract with other parties for the goods and services contemplated by this Contract, as determined in the City's sole and absolute discretion.

2. City Obligations: In return for the services identified above, the City agrees to compensate Contractor at the unit prices as set forth in Exhibit "1," attached hereto. The City's obligation to pay the Contractor under this Contract is limited to an amount not to exceed the budget appropriation for each fiscal year. All payments shall be governed by the Local Government Prompt Payment Act as set forth in Sections 218.70 through 218.79, Florida Statutes, as amended.
3. **Contract Documents.** The following forms, attached as Exhibit "2," are an integral part of this Contract and must be completed, signed, witnessed and notarized as indicated and returned with the signed Contract:

(a) Front Page for Bond (F.S. § 255.05)
(b) Combination Payment and Performance Bond (F.S. § 255.05)

4. **Contract Administration.** The Public Works and Utilities Director, Lynn Stevens, shall perform contract administration of this Contract. The City may change the contract administrator, from time to time and at any time, upon written notice to Contractor. For notice provisions, see the paragraph below entitled "Notice."

5. **Liens.** Contractor acknowledges that Contractor shall not be entitled to lien the City or other public property.

6. **Termination for Convenience of the City**

(a) The parties agree that the City may terminate this Contract, or any work or delivery required hereunder, from time to time either in whole or part, whenever the City Manager of Port Orange shall determine that such termination is in the best interest of the City.

(b) Termination, in whole or in part, shall be effected by delivery of a Notice of Termination signed by the City Manager or his designee, mailed or delivered to the Contractor, and specifically setting forth the effective date of termination.

(c) Upon receipt of such Notice, the Contractor shall:

(i) cease any further deliveries or work due under this Contract, on the date, and to the extent, which may be specified in the Notice;

(ii) place no further orders with any subcontractors except as may be necessary to perform that portion of this Contract not subject to the Notice;

(iii) terminate all subcontracts except those made with respect to contract performance not subject to the Notice;

(iv) settle all outstanding liabilities and claims which may arise out of such termination, with the ratification of the Finance Director of Port Orange; and

(v) use best efforts to mitigate any damages which may be sustained by the Contractor as a consequence of termination under this clause.

(d) After complying with the provisions of subparagraph (c), above, the Contractor shall submit a termination claim, in no event later than six (6) months after the effective date of termination, unless one or more extensions of three (3) months each are granted by the Finance Director.

(e) The Finance Director, with the approval of the City Manager, shall pay from the using department's budget, reasonable costs of termination, including a reasonable amount for profit on supplies or services delivered or work completed. In no event shall this amount be greater than the original contract price, reduced by any payments made prior to Notice of Termination, and further reduced by the price of the supplies not delivered or the services not provided. This Contract shall be amended accordingly, and the Contractor shall be paid the agreed amount.

(f) In the event that the parties cannot agree on the whole amount to be paid to the Contractor by reason of termination under this clause, the Finance Director shall pay the Contractor the amounts determined as follows, without duplicating any amounts which may have already been paid under the preceding paragraph of this clause:
(i) With respect to all Contract performance prior to the effective date of Notice of Termination, the total of:

(1) the cost of work performed or supplies delivered;
(2) the cost of settling and paying any reasonable claims as provided in paragraph (c) (iv), above;
(3) a sum as profit on (a) determined by the Finance Director to be fair and reasonable.

(ii) The total sum to be paid under (i) above shall not exceed the contract price, as further reduced by the contract price of work or supplies not terminated.

(g) In the event that the Contractor is not satisfied with any payments which the Finance Director shall determine to be due under this clause, the Contractor may appeal any claim to the City Council in accordance with Paragraph 23 of this contract concerning disputes.

7. Termination for Convenience for Subcontractors. In accordance with the termination for the convenience of the City provision of this contract, the Contractor shall include similar provisions in any subcontract, and shall specifically include a requirement that subcontractors make all reasonable efforts to mitigate damages which may be suffered. Failure to include such provisions shall bar the Contractor from any recovery from the City whatsoever of loss or damage sustained by a subcontractor as a consequence of termination for convenience.

8. Termination for Default. Either party may terminate this Contract, without further obligation, for the default of the other party or its agents or employees with respect to any agreement or provision contained herein. In the event of default by the contractor, the City reserves the right to procure the item(s) bid from other sources and holds the bidder responsible for excess costs incurred as a result. City Council may elect to refrain from doing business with the bidder as stipulated in City Code 2-276 Suspension and Disbarment.

9. Examination of Records

(a) The Contractor agrees that the City, or any duly authorized representative, shall, until the expiration of five (5) years after final payment hereunder, have access to and the right to examine and copy any pertinent books, documents, papers and records of the Contractor involving transactions related to this Contract.

(b) The Contractor further agrees to include in any subcontract for more than $10,000 entered into as a result of this Contract, a provision to the effect that the subcontractor agrees that the City or any duly authorized representative shall, until the expiration of five (5) years after final payment under the subcontract, have access to and the right to examine and copy any pertinent books, documents, papers and records of such subcontractor involved in transactions related to such subcontract, or this Contract. The term subcontract as used herein shall exclude purchase orders for public utility services at rates established for uniform applicability to the general public.

(c) The period of access provided in subparagraphs (a) and (b) above for records, books, documents and papers which may relate to any arbitration, litigation, or the settlement of claims arising out of the performance of this contract or any subcontract shall continue until any appeals, arbitration, litigation or claims shall have been finally disposed of.

10. Public Records Compliance. Contractor shall comply with public records laws as set forth in Chapter 119, Florida Statutes, and shall specifically:

(a) Keep and maintain public records required by the City to perform the service.
(b) Upon request from the City's custodian of public records, provide the City with a copy of the requested record or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Section 119, Florida Statutes, or as otherwise provided by law.

(c) Ensure that public records that are exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Contract term and following completion of the Contract if the Contractor does not transfer the records to the City.

(d) Upon completion of the Contract, Contractor shall transfer to the City, at no cost, all public records in possession of the Contractor and destroy any duplicate public records that are exempt from public records disclosure requirements. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

If Contractor does not comply with a public records request, the City shall deem the non-compliance a breach of this Contract, and the Contractor may be subject to penalties under Section 119.0701, Florida Statutes.

CONTRACTOR QUESTIONS RELATING TO CONTRACTOR’S DUTIES TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT MUST BE FORWARDED TO THE OFFICE OF THE CITY CLERK, CITY HALL, 1000 CITY CENTER CIRCLE, PORT ORANGE, FLORIDA 32129; TELEPHONE: (386) 506-5563; E-MAIL: CITYCLERK@PORT-ORANGE.ORG.

11. Termination for Non-Appropriation of Funds

(a) If funds are not appropriated for any succeeding fiscal years subsequent to the one in which this contract is entered into, for the purpose of this Contract, then the City may terminate this Contract upon thirty (30) days prior written notice to the Contractor. Should termination be accomplished in accordance with this Section, the City shall be liable only for payments due through the date of termination.

(b) The City agrees that should it terminate in accordance with this Section, it shall not obtain services which are substantially equal to or similar to those for which this contract was entered into. This provision shall survive any termination of the Contract.

12. Insurance. Contractor shall maintain insurance, as required herein, during the life of this Contract. Contractor shall provide to the City, a certificate of insurance endorsing the City of Port Orange as an additional named insured. All insurance coverages of the Contractor shall be primary and non-contributory. All insurance coverages of the Contractor shall not seek contribution from any other insurance or self-insurance available to the City. For workers’ compensation coverage, the Contractor’s insurance certificate shall include the insurer’s waiver of subrogation in lieu of endorsing the City as an additional insured for workers’ compensation. The City shall not accept Workers’ Compensation Exemptions. Contractor may use leased employees if the Contractor ensures that all workers who access the job site are employees covered by the employee leasing company, and no non-employees are permitted to access the job site. Any Contractor using a leased employee shall complete the City’s Leased Employee Affidavit Form Exhibit. Policies for Workers’ Compensation may be issued by companies authorized as a group self-insurer by F.S. 440.572.

Policies other than Workers’ Compensation shall be issued by insurers licensed and/or duly authorized under Florida Law to do business in the State of Florida and all insurers are required to have a minimum rating of “A-” in the “Best Key Rating Guide” published by A.M. Best & Company, Inc. Contractor shall not commence work under this Contract until the City has received a certificate or certificates of insurance with endorsement evidencing the required insurance. Insurer shall provide the City written notice of cancellation, nonrenewal or any other changes in coverage no later than thirty (30) days prior to the effective date of the change and shall provide notice to the City.
no later than 10 days after non-payment. The Certificates of Insurance and required insurance policies shall contain provisions that thirty (30) days prior written notice shall be given to the City of any cancellation, intent not to renew, or reduction in the policies or coverages.

Contractor shall require and ensure each of its subcontractors to maintain, until the completion of the subcontractor's work, insurance of the types and to the limits set forth herein. All insurance coverages shall be primary and non-contributory. All insurance coverages of the subcontractors shall not seek contribution from any other insurance or self-insurance available to the City. The Contractor is responsible for ensuring that its subcontractors maintain the required coverage. Failure of the Contractor to ensure the subcontractors maintain the required coverage, shall not relieve the Contractor of any contractual responsibility, obligation or liability.

The City reserves the right to increase insurance coverage as determined for higher risk contracts.

The acceptance by the City of any Certificate of Insurance does not constitute approval or agreement by the City that the insurance requirements have been satisfied or that the insurance policy shown on the Certificate of Insurance is in compliance with this Contract and does not waive the insurance required by this Contract.

Should at any time the Contractor or subcontractors not maintain the insurance coverages required herein, the City may terminate the Contract or at its sole discretion shall be authorized to purchase such coverages and charge the Contractor for such coverages purchased. The City shall be under no obligation to purchase such insurance, nor shall it be responsible for the coverages purchased or the insurance company or companies used. The decision of the City to purchase such insurance coverages shall in no way be construed to be a waiver of any of its rights under the Contract.

### Standard Insurance Requirements

<table>
<thead>
<tr>
<th>Insurance</th>
<th>Standards</th>
<th>Additional Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers' Compensation</td>
<td><strong>Contract Amount</strong></td>
<td>☐ If Contract requires work on or about navigable waters, Longshoreman's and Harbor Workers' Coverage required.</td>
</tr>
<tr>
<td>The Contractor shall maintain coverage for its employees with statutory workers' compensation limits, and no less than the limits indicated in the Schedule of Limits for Employers' Liability, Said coverage shall include a waiver of subrogation in favor of the City. The City will not accept elective exemptions. Any contractor using an employee leasing company shall complete the Leased Employee Affidavit Form Exhibit.</td>
<td><strong>Limits:</strong> Statutory/Statutory/$500,000, $10 - $20 million, $1,000,000</td>
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<tr>
<td>Comprehensive General Liability (Including Completed Operations and Contractual Liability)</td>
<td><strong>Limits:</strong> Combined Single Limit Bodily Injury and Property damage $1,000,000 occurrence $1,000,000 aggregate</td>
<td>☐ When work is on or under Railroad rights of way or properties, the Contractor shall take out and maintain during the life of the Contract, Railroad protective liability and property damage insurance in amounts as requested by the Railroad.</td>
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City of Port Orange - Standard Contract for Services - Masic General Contractor, Inc., (CA 7190) ITB 19-35 City Wide Paving Program Page 5
<table>
<thead>
<tr>
<th>Insurance Coverage</th>
<th>Limits</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive Business, Automobile Liability to include all owned, hired and non-owned automobiles.</td>
<td>Auto Liability Body Injury and Property Damage: $1,000,000 each occurrence $1,000,000 aggregate</td>
<td></td>
</tr>
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**Additional Insurance Requirements**

- **Property Insurance Builders Risk:**
  - Additional Coverage: Buildings - Completed value of Contract. “All Risk” coverage on latest ISO or its equivalent. Permission granted to occupy. Owner named as insured AIMA.
  - Limits: "To be determined.

- **Professional Liability:**
  - Limits: Coverage - $1,000,000

- **Installation Floater (IT):**
  - Limits: Coverage - "To be determined.

- **Contractor Pollution Liability:**
  - Limits: Coverage - $1,000,000

- **Errors and Omissions:**
  - Limits: Coverage - $1,000,000

- **Umbrella Policy:**
  - Limits: Coverage - "To be determined.

- **Payment and Performance Bond Required:**
  - Limits: Coverage - Equal to amount of Contract.

- **City Manager waives Payment and Performance Bond for work under $25,000.00.**

- **Unless otherwise required by law, City Manager waives Insurance for FOB goods under $25,000.00.**

13. A Contract for the purchase of supplies shall be governed by the City of Port Orange Code of Ordinances, as amended, and such supplies shall be deemed "goods," as defined therein.

14. Assignability of Contract. Neither this contract, nor any part hereof, may be assigned by the Contractor to any other party without the express written approval of the City Council.

15. Modifications or Changes to this Contract

   (a) Change Orders. The Department Head, with the concurrence of the City's signatory as required by the City's Purchasing Policy, shall without notice to any sureties, have the authority to order changes in this Contract which affect the cost or time of performance. Such changes shall be ordered in writing specifically designated to be a change order. Such orders shall be limited to reasonable changes in the services to be performed or the time of the performance. The City will not be held liable for any changes which have not been properly authorized and approved in accordance with this Contract.

   (b) If any change under this clause causes an increase or decrease in Contractor's cost of, or time required for the performance of the work hereunder, Contractor shall receive an equitable adjustment in accordance with subparagraph (d), which shall include all compensation to the Contractor, or the City, of any kind in connection with such change, including all costs and damages related to or incidental to such change.

   (c) Contractor need not perform any work described in any change order unless it has received a certification from the City that there are funds budgeted and appropriated sufficient to cover the cost of such changes.

   (d) No claim for changes ordered hereunder shall be considered if made after final payment in accordance with the Contract.

16. Sovereign Immunity. The City expressly retains all rights, benefits and immunities of sovereign immunity in accordance with Section 768.28, Florida Statutes. Notwithstanding anything set forth in any section of this Contract...
to the contrary, nothing in this Contract shall be deemed as a waiver of immunity or limits of liability of the City beyond any statutory limited waiver of immunity or limits of liability which may have been adopted by the Florida Legislature or may be adopted by the Florida Legislature and the cap on the amount and liability of the City for damages regardless of the number or nature of claims in tort or equity shall not exceed the dollar amount set by the legislature for tort. Nothing in this Contract shall inure to the benefit of any third party for the purpose of allowing any claim against the City which would otherwise be barred under the Doctrine of Sovereign Immunity or operation of law.

17. **Warranties.** Contractor warrants that (1) the supplies to be provided to the City pursuant to this Contract are fit and sufficient for the purpose intended; (2) the supplies are merchantable, of good quality, and free from defects, whether patent or latent, in material or workmanship, and (3) the supplies sold to the City pursuant to this Contract conform to the standards required by this Contract.

Contractor further warrants that Contractor has title to the supplies provided, and that the supplies are free and clear of all liens encumbrances, and security interests. All warranties made in this Contract, together with service warranties and guarantees, shall run to the City and its successors and assigns.

18. **Additional Warranties.** Contractor further expressly warrants that materials and workmanship are warranted from defect for a one-year period. This is a minimum acceptable warranty.

19. **Additional Bond Security.** If any surety bond furnished in connection with this Contract becomes unacceptable to the City, Contractor shall promptly furnish such additional security as may be required from time to time to protect the interests of the City and a person supplying labor and materials in the prosecution of work contemplated by this Contract. Contractor expressly acknowledges that if the work to be performed hereunder is a public work, a Payment and Performance Bond, in accordance with Florida Statutes Section 255.05, in a form acceptable to the City, shall be provided and recorded with the Clerk of Volusia County at Contractors expense.

20. **Inspection**

(a) All supplies (which term throughout this clause includes without limitation raw materials, components, intermediate assemblies, and their products) shall be subject to inspection and test by the City, to the extent practicable at all times and places including the place of manufacturer, and in any event prior to acceptance.

(b) In the event any supplies or lots of supplies are defective in material or workmanship, or otherwise not in conformity with the requirements of this Contract, the City shall have the right either to reject them (with or without instructions as to their disposition) or to require their correction. Supplies or lots of supplies which have been rejected or required to be corrected shall be removed or, if permitted or required by the Finance Director, corrected in place by and at the expense of Contractor promptly after notice, and shall not thereafter be tendered for acceptance unless the former rejection or requirement of correction is disclosed. If Contractor fails promptly to remove such supplies or lots of supplies which are required to be removed or promptly to replace or correct such supplies or lots of supplies, the City may either (i) by contract or otherwise replace or correct such supplies and charge Contractor the cost for such replacement or correction; or (ii) may terminate this Contract for default as provided in the clause of this Contract entitled "Termination for Default." Unless Contractor corrects or replaces such supplies within the delivery schedule, the Finance Director may require the delivery of such supplies at a reduction in price, which is equitable under the circumstances. Acceptance or rejection of the supplies shall be made as promptly as practicable after delivery, except as otherwise provided in this Contract. Failure to inspect and accept or reject supplies shall neither relieve Contractor from responsibility for such supplies as are not in accordance with the Contract requirements nor impose liability on the City therefor.

(c) The inspection and test by the City of any supplies or lots thereof does not relieve Contractor from any responsibility regarding defects or other failures to meet the Contract requirements, which may be discovered.
prior to acceptance. Except as otherwise provided in this Contract, acceptance shall be conclusive except as regards latent defects, fraud, or such gross mistakes as to amount to fraud.

21. **Liability for Loss or Damage.**

   (a) Contractor shall be liable for any loss of, or damage to, City property caused by the negligence, recklessness, or intended wrongful misconduct of Contractor, his/its agents, servants and employees and shall indemnify and save the City harmless against all actions, proceedings, claims, demands, costs, damages and expenses, including attorney's fees, by reason of any suit or action brought for any actual or alleged injury to or death of any person or damage to property other than City property, resulting from the performance of the Contract by Contractor, his/its agents, servants and employees. Contractor shall submit a full written report to the Finance Director within twenty-four (24) hours following the occurrence of such damage, loss or injury.

   (b) To the fullest extent permitted by law, in addition to the express duty to indemnify City when there is any causal connection between Contractor's work and any injury, loss, damage, death or property damage, Contractor expressly undertakes a duty to defend City as a separate duty, independent of and broader than the duty to indemnify. The duty to defend agreed to by Contractor hereby expressly include all costs of litigation, attorney's fees, settlement costs and reasonable expenses in connection with the litigation, whether or not the claims made for loss, injury, damage or property damage are valid or groundless and regardless of whether the defense of City is maintained by the City or assumed by Contractor as long as the claims made could be causally connected to Contractor as reasonable determined by City.

22. **Non-discrimination.** During the performance of this Contract, Contractor agrees as follows:

   (a) Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, disability, marital status, age or national origin, except where such is a bona-fide occupational qualification reasonably necessary to the normal operation of Contractor. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause. Contractor agrees and fully supports and complies with the Americans with Disabilities Act of 1990.

   (b) Contractor shall state in all solicitations or advertisements for employees placed by or on behalf of Contractor that Contractor is an equal opportunity employer.

   (c) Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient compliance with this provision. Contractor shall include the provisions of the foregoing subparagraphs (a), (b), and (c) in every subcontract or purchase order of over $10,000 so that the provisions will be binding upon each subcontractor or vendor.

23. **Disputes.** The City Manager, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to Contractor, shall decide disputes with respect to this Agreement. The decision by the City Manager shall be final and binding unless, within five (5) business days from the date of delivery of the decision of the City Manager, appeal is made to the City Council in writing and delivered to the City Clerk, Robin L. Fenwick, MMC. The decision of the City Council shall be final and binding unless set aside by a court of competent jurisdiction as fraudulent, capricious, arbitrary, or so grossly erroneous as necessary to imply bad faith, or not to be supported by any evidence.

24. **Force Majeure.** Neither party shall be liable for any delay in performance or failure to perform any obligation hereunder if, and to the extent that, such failure or delay is caused by an event of Force Majeure. Force Majeure shall mean any act, event or condition that is beyond the party's reasonable control, that materially and adversely
affects the party’s ability to perform its obligations hereunder, and that is not the result of the party’s willful neglect, error, omission or failure to exercise reasonable due diligence.

25. **Controlling Law.** This Agreement contains important matters affecting legal rights and is accepted and entered into in Florida and any question regarding its validity, construction, enforcement, or performance shall be governed by Florida law. Any legal proceeding arising from or in any way regarding the Agreement shall have its venue located exclusively in the Circuit Court of Volusia County, Florida, and the parties hereby expressly consent and submit themselves to the personal jurisdiction and venue of the court.

26. **Additional Provisions.** This Contract includes all additional provisions as may have been outlined in written quotes and purchase orders and any attachments or exhibits to this Contract whether delivered herewith or subsequently approved as a part hereof, such as drawings or technical specifications prepared in the performance of this work. In the event of a conflict between any attachments or exhibits to this Contract, and this Contract, the language of this Contract shall control. In the event of a conflict between the Scope of Services as referenced in ITB 19-35 and Addendum No. 1, Addendum No. 1 shall control.

27. **Integration.** This Contract and the documents incorporated herein by reference shall constitute the whole agreement between the parties. There are no promises, terms, conditions, or obligations other than those contained herein, and this Contract shall supersede all previous communications, representations, or agreements, written or verbal, between the parties hereto.

28. **Notice.** For purposes of this agreement, notices shall be sent as follows:

- **City:** City of Port Orange
  - Attention: City Manager
  - 1000 City Center Circle
  - Port Orange, Florida 32129
  - (386) 506-5501

- **Copy to:**
  - City of Port Orange
  - Attention: Lynn Stevens, Public Works and Utilities Director
  - 1000 City Center Circle
  - Port Orange, Florida 32129
  - (386) 506-5575

- **Contractor:** Masci General Contractor, Inc.
  - Attention: Leonel Masci, President
  - 5752 South Ridgewood Avenue
  - Port Orange, Florida 32127
  - (386) 322-4500
  - leticiamasci@masciuc.com

Any notice or other communication given under the Contract will be in writing and delivered by hand, sent by facsimile (provided acknowledgement of receipt thereof is delivered to the sender), sent by certified, registered mail, or sent by any nationally recognized overnight courier service to the addresses provided herein. The parties may, from time to time and at any time, change their respective addresses and each will have the right to specify as its address any other address by at least 10 days written notice to the other party.
29. **Contract Construction**

This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument. The delivery by facsimile or e-mail of an executed copy of this Agreement shall be deemed valid as if an original signature was delivered. No contract shall be formed between Contractor and the City until the City signs this Agreement.

30. **Authority to Sign.** Each person signing this Agreement warrants that he or she is duly authorized to do so and to bind the respective party to the Agreement.

[Remainder of this page intentionally left blank]
Witnesses:

Printed Name: David Masci

Printed Name: Letizia M. Ferrero

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of ___ physical presence or ___ online notarization, this ___ day of ___ , 2020, by Leonel Masci, as President of Masci General Contractor, Inc., a Florida corporation. He ___ personally known or ___ produced __________________ as identification.

Catherine Geary
Commission # GS074509
Expires: Feb. 20, 2021
Bonded thru Aaron Notary

MASCi GENERAL CONTRACTOR, INC.

By: Leonel Masci, President

If this Contract is signed by an individual not identified as the President of the corporation in the records of the Florida Department of State, Division of Corporations, please provide written authorization for that individual to enter into contracts on behalf of the corporation.

Date: 4/12/20

Notary Public, State of Florida
Printed, typed or stamped name, commission and expiration:
CITY OF PORT ORANGE

By: Donald O. Burnette, Mayor

Date: 4/29/2020

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of ___ physical presence or ____ online notarization, this 29th day of April, 2020, by Donald O. Burnette, as Mayor of the City of Port Orange, a Florida municipal corporation, on behalf of the city. He is ___ personally known or ____ produced as identification.

Notary Public, State of Florida
Printed, typed or stamped name, commission and expiration:

ATTEST:

By: Robin L. Fenwick, MMC, City Clerk

Date: 4/29/2020

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me, by means of ___ physical presence or ____ online notarization, this 29th day of April, 2020, by Robin L. Fenwick, as City Clerk of the City of Port Orange, a Florida municipal corporation, on behalf of the city. She is ___ personally known or ____ produced as identification.

Notary Public, State of Florida
Printed, typed or stamped name, commission and expiration:
EXHIBIT “1”

Contractor's Schedule to Unit Prices
and Scope of Work as Amended by Addendum No. 1

Consisting of 73 Pages
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
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<th>Estimated Quantity</th>
<th>Unit Price</th>
<th>Extended Price</th>
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<td>$4,000.00</td>
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SECTION 3 – SCOPE OF WORK

ATTACHMENT “A”

TECHNICAL PROVISION TP-101

MOBILIZATION

The work specified in this Technical Provision consists of the preparatory work and operations in mobilizing for beginning work on the project and shall conform with the requirements of Section 101 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction latest edition except as amended hereinafter.

Perform preparatory work and operations in mobilizing for beginning work on the project including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site and for the preparation and posting of homeowner notifications, establishment of temporary offices, buildings, safety equipment and first aid supplies, and sanitary and other facilities. This item shall not include ongoing cost for above items.

Include the costs of all required permits, including the National Pollutant Discharge Elimination System permit, and any preconstruction expense necessary for the start of the work, excluding the cost of construction materials.

Pre-Construction Conference: A Pre-Construction Meeting will be held at a location selected by the City to verify and agree on the square yardage of the project prior to beginning work on any assigned task. Names and phone numbers of key personnel of both Contractor and Owner shall be exchanged at the Pre-Construction Meeting. An anticipated schedule for completion of the work, including an adequate breakdown of tasks for each roadway included in the assignment shall be provided to the owner for review and approval at the Pre-Construction meeting. Any necessary updates to emergency contacts information shall be exchanged promptly, throughout the construction period. All required paperwork must be submitted at or before the Pre-Construction Meeting and notices to businesses and residences as required in TP-102 shall be submitted for review and approval. Attendees must include, at minimum, the project superintendent and on-site foreman, the project inspector and other key personnel as may be needed for proper understanding of the project.

Method of Measurement: A pay item for Mobilization is listed in the bid form for work specified in this technical provision. Unit of measure for Mobilization will be each mobilization for each separate process. All work of a particular type per Task Authorization shall be completed with one mobilization fee. No separate mobilization will be considered for work defined above on the same Task Authorization when mobilization was measured on the same type of work previously.

Basis of Payment: Payment will be Each, as listed on the bid form for mobilization as measured above.

TECHNICAL PROVISION TP 102

MAINTENANCE OF TRAFFIC (MOT) AND DUST ABATEMENT

The work specified in this Technical Provision consists of maintaining traffic within the project limits during the entire construction period and shall comply with the requirements of Section 102 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction latest edition, the Florida Department of Transportation Roadway and Traffic Design Standards latest edition, Index 600 series and 700 series, Florida Department of Transportation’s Plans Preparation.
The Contractor's work shall include any temporary suspensions of work, preparing approved traffic control plans, providing facilities, devices, and operations as required for access to residences and businesses along the project and for the safety and convenience of the public and to minimize public nuisance, installing, and maintaining traffic control markings, signs, and safety devices, and any other special requirements for safe and expeditious movement of traffic in the project area and other impacted areas as specified herein.

Regardless of the MOT standards and specific traffic control plan used, it shall be the Contractor's responsibility to maintain the work zone in a safe condition.

**Work Zone Traffic Supervisor:** The Contractor shall provide, at no additional cost to the City, a Work Zone Traffic Supervisor who has successfully completed advanced training in Maintenance of Traffic, and in general conformance to Section 5-8.4 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. The Contractor shall provide a copy of the Work Zone Traffic Supervisor's training certification at the preconstruction conference. The Maintenance of Traffic Plan shall be installed, maintained and removed under the direct supervision of an individual who has successfully completed intermediate or advanced training in Maintenance of Traffic.

**Traffic Control Plan:** Preparing detailed work zone traffic control plans for the Engineer's approval is included in this Technical Provision. The plans prepared shall indicate a traffic control plan for each phase of the Contractor's activities. The Contractor may not begin work until a traffic control plan is approved in writing by the City. Traffic control plans modifications require the City's written approval. Except in an emergency, no changes to the approved plan are allowed until written approval is received. The approved traffic control plan shall be available on site at all times.

**Maintenance of Detours:** The Contractor shall repair, at his expense, all potholes and other localized failures on streets used as detour routes and haul roads to simplify construction operations.

**Replacement of Traffic and Street Signs:** The Contractor shall re-erect all existing traffic and street signs within the project site moved or relocated during construction.

**Replacement of Striping and Traffic Markings:** The contractor shall replace, upon completion of the work, all traffic stripes and pavement marks in their original locations unless directed otherwise by the City. Painted traffic stripes and markings are acceptable as detailed in these Technical Provisions.

**Specific Requirements:** The work and payments for MOT includes the following:

1. All existing roads will be kept open to two-way traffic during construction, except where otherwise approved in the MOT plan. The Contractor will maintain one lane of traffic minimum in each direction (each lane 11-foot wide minimum) at all times by using existing or constructing temporary pavement.
2. Temporary pavement will consist of six-inch thick suitable base and one-inch thick asphalt concrete surface.
3. Construction of major side streets should be phased similarly to maintain one lane of traffic in each direction (each lane 11-foot wide minimum) at all times by using existing or constructing temporary pavement.
4. The Contractor shall remove any existing striping conflicting with MOT during construction and provide adequate signing and/or striping.

5. Alternate access shall be provided to all residences and businesses whenever construction interferes with the existing means of access. The Contractor is not permitted to isolate residences or businesses.

6. Major intersections shall have through movements maintained at all times during construction except during short periods of time approved by the City Engineer’s Representative.

7. Traffic shall be maintained on paved, dust free surfaces at all times.

8. The Contractor is responsible for establishing a work schedule so that any location under construction will not be left in hazardous condition at the completion of any work period.

9. When construction activities require flagmen for traffic control, the Contractor will employ the appropriate number of trained, competent flagmen, and will provide them with appropriate equipment in good condition.

10. Temporary approaches or crossings and intersections with trails, roads, streets, businesses, parking lots, residences, and garages will be provided and maintained in a safe condition by the Contractor. The Contractor shall take precautions to protect the work and the safety of the public.

11. All homeowners, residents and businesses affected by the construction shall be notified five (5) days in advance of the work and suitable signs shall be posted at each end of the project limits. Unsecured notices will not be allowed. The contractor shall also place the notice on the windshield of any parked cars on the street. Should work not occur on the specified day, a new notification shall be distributed. The notification shall state the time and date that the work will take place, a current phone number of the contractor’s on-site supervisor and a brief description of work being performed. The contractor will be responsible for contacting local affected waste collection companies, United States Mail Carriers, United Parcel Services, Police and Law Enforcement, City/County and Municipal Fire Services etc. ahead of time to notify of the day that work is planned and how it may affect their operation. The City shall be notified in time to allow posting to social media. Failure to do so will result in delay of the operations.

12. Driveway blockage during construction shall be consciously minimized so as to reduce inconvenience to local residence. In no case shall a driveway be blocked without prior knowledge of the home or business owner or tenant.

13. Cleanup shall be performed each day at close of the work day to ensure no trash, debris or loose asphalt are remaining. A complete cleanup of the job site shall be performed within three (3) business days. To include replacement of damaged sod, irrigation, mailboxes, and driveway aprons.

Dust Abatement:

General: Dust abatement shall consist of applying, when ordered, water or dust palliative for abatement of dust nuisance originating within the project limits. The methods, materials, and procedures for dust abatement shall be subject to approval by the City Engineer. Dust abatement operations shall be performed by the Contractor at the time, location, and in the amount ordered by the City Engineer. Dust abatement operations shall be on-call for operation on a 12-hour per day, seven- day per week basis as necessary.

Water: Water used for dust control shall be furnished and applied by means of vehicle-mounted tanks equipped with suitable sprinkling devices and in the quantities ordered by the City Engineer.
The water used for dust abatement may be obtained from any approved pond, lake, stream, or municipal water system. The water shall be free of excess silt, excess and harmful chemicals, acids, alkalies, or any substance which might be obnoxious to traffic or might be harmful to plant growth. Salt water shall not be used.

Vehicle for Application: The vehicle for applying water for dust abatement shall be equipped with an approved metering device, installed at such point on the vehicle as to measure the water at the time of its application. The vehicle may be equipped with a calibrated tank when approved by the City.

Method of Measurement:
No pay item is listed on the Bid Form for work required in this Technical Provision. The quantity to be paid shall be included in the quantities measured for which items as listed in this Technical Provision are incidental. This includes all items of work described herein and in Section 102 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction. These items include but are not limited to driveway maintenance, temporary pavement marking, temporary signing, barricades and flagmen.

Basis of Payment:
The quantities to be paid for under this Technical Provision shall be included in the Unit Prices for work to which it is incidental, for instance Microsurfacing (Single application) or Painted Traffic Stripe. The unit prices include all work listed in their respective Technical Provision plus items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions, including all items of work described herein, in the plans, and in Section 102 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

TECHNICAL PROVISION
TP-271
FULL-DEPTH RECLAMATION WITH PORTLAND-CEMENT

This work shall consist of the preparation of a stabilized base course composed of a mixture of the existing bituminous concrete pavement, existing base course material and cement and other additives. The manufacture of the stabilized base course shall be done by in-place pulverizing and blending of the existing pavement and base materials, and the introduction of cement or additives if called for in the Special Conditions. The process which results in a stabilized base course, shall be accomplished in accordance with these specifications and conform to the lines and grades established by the engineer.

Existing asphalt pavement shall be pulverized by a method that does not damage the material below the plan depth as shown on the appropriate roadway section.

Materials:

RAP: Materials must meet all requirements specified in the 2010 Florida Department of Transportation Standard Specifications for Road and Bridge Construction 283-2, except that 98% of all material is required to pass through a 50 mm (2 inch) sieve.

Additional Base Materials: Additional base materials may be needed for adjusting grade elevations as directed by the engineer, or for widening. When such additional material is required it shall be among those bases listed in FDOT Design Standards as General Use Optional Base Materials and meet applicable FDOT requirements for such.
Portland Cement: Portland Cement shall be type I or II and conform to the latest standard requirements of ASTM C150 and AASHTO M85, for the type specified.

Water: The water for the base course shall be clean and free from sewage, oil, acid, strong-alkaline, or vegetable matter and it shall be in sufficient supply for mixing and curing. Water of questionable quality shall be tested in accordance with the requirements of AASHTO T 26.

Soil: The soil base to be reclaimed shall be evaluated by a professional geotechnical engineering laboratory to determine suitability in the stabilization process. The soil shall be free of roots, sod, weeds, and shall not contain gravel or stone retained on a 1-inch (25 mm) sieve, or more than 45% retained on a No. 4 (4.75 mm) sieve, as determined by ASTM C 136.

Equipment:

Road Reclaimer: Shall be originally designed for pavement reclaiming of a size equal to or larger than a Caterpillar Model RM 350B with comparable specifications including horsepower and rotor size. The reclaimer shall be capable of pulverizing and mixing pavement, base materials, and subgrade soil to depth of 16 inches. It shall have the capability of introducing and metering additives uniformly and accurately and that positive displacement pumps accurately meter the planned amount of water and cement material into the mixture. The reclaiming machine shall mix the cement additive thoroughly with the RAP and soil materials. The pump shall be mechanically or electronically interlocked with the ground speed of the machine. The cement metering system and water metering system shall be capable of continuously monitoring (GPM) flow and totaling the quantity of water and cement applied into the mixing chamber. Additives shall be uniformly distributed and mixed with the pulverized material, any existing underlying material as specified.

Motor Grader: Shall be of sufficient size and horsepower to adequately rough-grade the pulverized base and rough-and-finish grade the mixed-and-compacted base. The equipment shall be in good working order free from leaks and capable of maintaining an accurate grade and cross-slope.

Rollers: Shall be in good working order free from leaks and capable of compacting the mix to the requirements of this specification. Vibratory rollers shall be a minimum of 10 tons and capable of rolling in either vibratory or static mode. Three wheel-static rollers shall be a minimum of 11 tons. Pneumatic tire rollers shall have a minimum of 9 oscillating wheels with smooth, low-pressure tires (pressure shall be equally matched in all tires within 5 PSI) and weigh at least 20 tons. Initial compaction shall be accomplished by either single or dual drum vibratory or three wheel-roller static rollers.

Cement Delivery Equipment: Apply the cement by use of a mobile cement mixer trailer capable of mixing predetermined ratios of cement and water connected to the reclaimer for introduction into the pulverized base. Alternately, a cyclone, screw-type or pressure-manifold type distributors may be used with a certain to accurately place the determined amount of cement onto the pulverized base for mixing.

Additional Equipment: Additional equipment will be needed to complete the operations required by this technical provision. All equipment necessary for the successful completion of projects governed by this technical provision shall be included in the unit costs associated herein. Availability of quality assurance devices (such as a 15° straight edge) shall be the responsibility of the Contractor.

Construction:

Layout: The Contractor will be responsible for the string lining and lay-out of the roadway prior to paving.
Elevations of the existing road must be referenced at sufficient intervals to ensure the roadway elevation is not changed in any location after final surface is placed. Method of layout and line and elevation reference must be approved by the engineer prior to beginning work. It is imperative that roadway elevations remain unchanged except cross slope correction or as approved by the engineer.

Weather and Seasonal Limitations: The soil-cement base shall not be mixed or placed while the atmospheric temperature is below 35 F (2 C) or when conditions indicate that the temperature may fall below 35 F (2 C) within 24 hours, or when the weather is foggy or rainy, or when the soil or sub-grade is frozen.

Mix Design: Prior to base course construction, a minimum of one (1) core sample must be taken for every 5,000 square yards of the roadway. Representative samples of the RAP material, underlying base material and virgin materials, where applicable, shall be supplied to a nationally accredited laboratory for preliminary testing to determine the optimum moisture content and proportions of cement needed to produce a finished base course with a mix design target of 300 PSI and a final in-place base compressive strength of 200 to 400 PSI. Laboratory tests of material to be reclaimed and virgin materials for use as base shall be performed to determine compliance with 3 day and 7 day minimum compressive strength requirements of the mixture and the quantity of cement required in the mix. Test specimens containing various amounts of cement are to be compacted in accordance with ASTM D556, and the optimum moisture for each amount of cement is to be determined. Actual application quantities for the Portland cement will be derived from the mix design. The minimum compressive strength requirements of the mixture shall be determined by the engineer of record. The mix design and laboratory testing shall be performed by a geotechnical engineering laboratory and all reports sealed by a professional engineer.

Widening: When the existing base is to be widened, the Contractor shall excavate the shoulder from the edge of the existing pavement to at least 6 inches beyond the planned new width of the base prior to pulverization. All costs involved in collecting, hauling, and disposing of these materials shall be borne by the Contractor.

The bottom of the trench shall be kept free of loose soil and vegetation. Approved base material (those bases listed in FDOT Design Standards as General Use Optional Base Materials) shall be placed in the excavation uniformly and without loss or contamination. The Contractor shall correct all areas of irregular grade or deficient thickness and shall remove and replace material contaminated with soil, organic material, or debris.

After the final pass of the reclaimer, soil shall be drawn up against the widening material to close the excavation, and the shoulder shall be graded and compacted to produce a firm, even surface.

Additional Material: When additional material is to be added to correct cross slope deficiencies or change elevation as directed by the engineer, approved base material (those bases listed in FDOT Design Standards as General Use Optional Base Materials) shall be placed on the roadway prior to final pass for pulverization and mixed uniformly with the existing material.

Pulverization: The existing pavement and base material shall be pulverized and blended to the depth required so the entire mass of material shall be uniformly graded to the following gradation:

<table>
<thead>
<tr>
<th>SIEVE</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2''</td>
<td>95</td>
</tr>
<tr>
<td>4-1/2''</td>
<td>98-100</td>
</tr>
</tbody>
</table>

Material gradation may vary due to local aggregates and conditions. Multiple passes of the reclaimer may be necessary to achieve the required gradation.
The cement and water shall be introduced into the mix through the reclaimers uniformly and accurately and metered such that areas are of equal consistency and moisture content. Alternately, the cement may be introduced by means of a spreader bar with curtain on the cement distributor. Cement shall not be introduced by means of a spreader bar or hose from the cement delivery tanker. The reclaimed material, cement and water shall be combined in place to meet the requirements specified in such proportions that the reclaimed mixture is of acceptable composition and stability. Before the start and at the end of each day’s work and at any time requested, the engineer must be permitted access to the mixing equipment in order to read the meter to verify the quantity of cement applied during the day’s work. Field adjustments shall be made as necessary to the recommended mix design under the guidance of a knowledgeable and competent technician to obtain a satisfactory reclaimed mixture of consistent composition and stability throughout the Project.

After the material has been processed, it shall be compacted to the lines, grades, and depth required. Water may be applied to ensure optimum moisture content at the time of mixing and compaction.

Compaction: Commence rolling with self-propelled rollers as required by this technical provision at the low side of the course, except leave 3 to 6 inches from any unsupported edge or edges unrolled initially to prevent distortion. Density readings shall be taken by Contractor’s licensed nuclear gauge operator and witnessed by the Engineer/Inspector. A control strip of not less than 500 feet shall be constructed to develop proper rolling/compaction patterns and methods to obtain desired density. Whenever there is a change in the reclaimed material or compaction method, equipment or unacceptable results occur, a new control strip shall be constructed, tested and analyzed.

Rollers shall move at a uniform speed that shall not exceed 8 km/hour (5 miles/hour). For static rollers, the drive drum normally shall be in the forward position or nearest to the paver. Vibratory rollers shall be operated at the speed, frequency and amplitude required to obtain the required density and prevent defects in the mat.

The number, weight and type of rollers furnished shall be sufficient to obtain the required compaction of the reclaimed material. The field density of the compacted mixture shall be at least 95 percent of the maximum density of laboratory specimens prepared from samples of the cement treated base material taken from the material in place. The specimens shall be compacted in accordance with ASTM D-558. The in-place field density shall be determined in accordance with ASTM D-2922.

Any pavement shaving or other unacceptable displacement shall be corrected. The cause of the displacement shall be determined, and corrective action taken immediately and before continuing rolling.

Care shall be exercised in rolling the edges of the reclaimed mixture, so the line and grade of the edge are maintained.

At the end of each day’s production, a transverse construction joint shall be formed by a header or by cutting back into the compacted material to form a true vertical face free of loose material. The protection provided for construction joints shall permit the placing, spreading, and compacting of base material without injury to the work previously laid. Where it is necessary to operate or turn any equipment on the completed base course, sufficient protection and cover shall be provided to prevent damage to the finished surface. A supply of mats or wooden planks shall be maintained and used as approved and directed by the Engineer.

Finishing: Finishing operations shall be completed and the base course shall conform to the required lines, grades, and cross section. If necessary, the surface shall be lightly scarified to eliminate any imprints made by the compacting or shaping equipment. The surface shall then be recompacted to the required density. Correct all irregularities greater than 1/2” over ten feet to the satisfaction of the engineer.
Protection and Curing: After the base course has been finished as specified herein, it shall be protected against drying for a period of 5 to 7 days by the application of a prime coat as specified in FDOT Standard Specifications section 300 at a rate of not less than 0.15 gal/sq. The curing method shall begin as soon as possible, but no later than 24 hours after the completion of finishing operations. The finished base course shall be kept moist continuously until the curing material is placed.

At the time the prime coat is applied, the surface shall be dense, free of all loose and extraneous material, and shall contain sufficient moisture to prevent penetration of the bituminous material. Water shall be applied in sufficient quantity to fill the surface voids immediately before the bituminous curing material is applied.

The curing material shall be maintained and re-applied as needed by the Contractor during the 7-day protection period so that all of the soil-cement will be covered effectively during this period. Finished portions of soil-cement that are used by equipment in constructing an adjoining section shall be protected to prevent equipment from marring or damaging the completed work.

When the air temperature may be expected to reach the freezing point, sufficient protection from freezing shall be given the soil-cement for 7 days after its construction and until it has hardened.

Thickness: The average thickness of the base constructed during one day shall be within 1/2 inch (12-mm) of the thickness required, except that the thickness of any one point may be within 3/4 inch (19-mm) of that required. Where the average thickness shown by the measurements made in one day's construction is not within the tolerance given, the Engineer shall evaluate the area and determine if, in his/her opinion, it shall be reconstructed at the Contractor's expense or the deficiency deducted from the total material in place.

**Sampling and Testing:**

| Control Testing for Full Depth Reclamation Field Sampling and Testing |
|------------------|------------------|------------------|------------------|
| **Type of Test** | **Method** | **Frequency** | **Size and Location** |
| RAP and Soil-Cement Base Gradation | ASTM D-186 | Each 3000 SY (not less than once per day) | 20 lb min-sampled from hopper |
| Moisture Density-Relationship of Soil-Cement Mixtures | ASTM D-668 | Each 1400 SY (not less than once per day) | 30 lb min-sampled from pulverized base |
| Compressive Strength of Molded Soil-Cement-Cylinders | ASTM D-1633 | Each 3600 SY (not less than once per day) | 30 lb min-sampled from pulverized and-mixed base |
| In-place Field Density | ASTM D-2622 | Each 250 SY (not less than once per day) | Random locations after spreading and compaction |

The depth of Reclaimed Bituminous Base Course shall be determined by measuring uncompacted reclaimed material immediately behind the scribed in conjunction with measuring the milling depth prior to placement of reclaimed material. One depth measurement for each 250 square yards of completed base course shall be made. Any section deficient by 0.5 in (12-mm) or more from the specified depth shall be removed and satisfactorily replaced by the contractor at no additional cost. At the City's option, cores may be taken by the engineer in the finished product to further ensure base thickness meets requirements.

All delivery tickets and notes regarding any materials brought to the project site to complete this Contract must be given to the Engineer/Inspector upon delivery to the project site.

Additional sampling and testing may be required if major changes in RAP characteristics are observed, such as a much coarser or finer gradation or a noticeable difference in asphalt content, or when considerable variability is occurring in the field test results.
Traffic Control

The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on freshly reclaimed base until rolling and blotting has been completed. The Contractor shall submit a MOT plan indicating all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. MOT and associated devices shall be checked daily and periodically throughout the project for compliance, and where adjustments or corrections are needed, prompt revisions shall be made.

Method of Measurement:

If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for Full Depth Reclamation with Cement, and not specifically listed in another item in the Bid Form, shall be included in the CY Price for Pulverization including but not limited to shaping, compacting, finish grading, prime coat, sanding prime coat. Cost for introduction of cement into the mixture shall be included in the per TN cost for Cement. Cost for excavation for widening will be included in the CY Price for Excavation. Cost for additional materials needed for widening or adjustment of grade as directed by the engineer shall be included in the CY Price for General Use Optional Base Material.

Basis of Payment:

The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for Full Depth Reclamation (Pulverization), the per Ton price for Cement, the per Cubic Yard price for Excavation and the per Cubic Yard price for General Use Optional Base Material. The Unit prices include all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Full Depth Reclamation with Cement, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.

TECHNICAL PROVISION TP-282

Full Depth Reclamation with Emulsion

This work shall consist of the preparation of a stabilized base course comprised of a mixture of the existing bituminous pavement, existing base course material and emulsified asphalt and other additives.

Description: The manufacture of the stabilized base course shall be done by in-place pulverizing and blending of the existing pavement and base materials, and the introduction of emulsion and additives as called for in the design mix formula. The process shall be accomplished in accordance with these specifications and conform to the depths, lines and grades established by the engineer.

Existing asphalt pavement shall be pulverized by a method that does not damage the material below the specified depth.
Materials:

RAP (Reclaimed Asphalt Pavement): The existing asphalt pavement incorporated into the finished base after mixing shall meet all requirements specified in the Florida Department of Transportation Standard Specifications for Road and Bridge Construction (latest edition), section 283-2, except that 98% of all material is required to pass through a 50 mm (2-inch) sieve.

Additional Base Materials: Additional base materials may be needed for adjusting grade elevations as directed by the engineer, or for widening. When such additional material is required, it shall be among those bases listed in FDOT Design Standards (latest edition) as General Use Optional Base Materials and meet applicable FDOT requirements for such.

Asphalt Emulsion: Asphalt emulsion, type CSS-1h or CMS-2h, meeting the requirements of AASHTO M 208-01, shall be utilized. The contractor shall certify the liquid bituminous material meets this specification.

The City will require the Contractor to sample and test each load of emulsion prior to delivery. The Contractor will also provide a sample of the emulsion on site, prior to commencing work. The City will require the Contractor to provide sample containers and a local independent testing laboratory for the analyzing of emulsion. The Contractor will be responsible for the cost of the testing. The City reserves the right to require testing of any shipment of emulsion. All samples shall be shipped and stored in clean-air tight-sealed wide-mouth jars or bottles made of plastic. The City may require base-prepared containing emulsified asphalt found to be outside of specification requirements to be removed and replaced at the sole expense of the contractor or left in place at no pay.

Portland Cement: Portland cement in either a dry or slurry form may be added to the reclaimed mixture if required by the mix design. Slurry made from Portland cement shall contain a minimum of 30% dry solids content. Cement used for full depth reclamation shall be Type I or II and conform to the latest standard requirements of AASHTO M 85, for the type specified. Cement shall be limited to no more than 1.5 percent by dry weight of reclaimed material. Cement amounts greater than 1.5 percent will only be allowed if approved by the Engineer.

Water: The water for the base course compaction shall be clean and free from sewage, oil, acid, strong alkaline, or vegetable matter and it shall be in sufficient supply for mixing and curing. Water of questionable quality shall be tested in accordance with the requirements of AASHTO T-26.

Base: The base to be reclaimed shall be evaluated by a professional geotechnical engineering laboratory to determine suitability in the stabilization process. The soil shall be free of roots, sod, and weeds. Cost for evaluation shall be borne by the owner, and results provided to the Contractor at the pre-construction conference.

Mix Design: Prior to construction, obtain an adequate number of core samples to develop the mix design(s). Representative samples of the asphalt pavement material, underlying base material, and virgin materials, where applicable, shall be supplied to a nationally accredited laboratory for testing to determine the proportions of asphalt emulsion, and other additives, if necessary, needed to produce a mix design meeting the requirements in the following table. The optimum binder content shall be the binder content that results in the highest wet tensile strength while also having 70% retained tensile strength compared to the dry strength and additionally has a minimum 1800 pounds Marshall stability. The mix design shall be signed and sealed by a professional engineer and submitted to the Engineer prior to use for approval.
<table>
<thead>
<tr>
<th>Property</th>
<th>Test Procedure</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gradation of Reclaimed Material</td>
<td>AASHTO T27-11</td>
<td>Report</td>
</tr>
<tr>
<td>Optimum-Binder Content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compaction effort at optimum fluids content:</td>
<td>Asphalt Institute-</td>
<td>Report</td>
</tr>
<tr>
<td>Marshall Compactor; 50 blows/side or</td>
<td>MS-14, Appendix F.</td>
<td></td>
</tr>
<tr>
<td>Superspan-Gyratory Compactor; 100</td>
<td>ASTM D6926-10</td>
<td></td>
</tr>
<tr>
<td>mm-diameter specimen; 30 gyrations</td>
<td>AASHTO T312-12</td>
<td></td>
</tr>
<tr>
<td>Density determination</td>
<td>FM 1.1-106</td>
<td></td>
</tr>
<tr>
<td>Marshall stability</td>
<td>ASTM D6927-06</td>
<td>4800 lbs., Min</td>
</tr>
<tr>
<td>Cure at 50°C to constant weight, Test at 40°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistance of compacted bituminous mixture</td>
<td>AASHTO T283-07 (2014)</td>
<td>70% Min-retained tensile strength</td>
</tr>
<tr>
<td>to moisture induced damage-Vacuum saturation of 55% to 75%, water-bath 25°C 23 hours, last hour at 40°C water bath</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Equipment:**

Road Reclaimer: Shall be originally designed for pavement reclaiming of a size equal to or larger than a Caterpillar Model RM 350H with comparable specifications including horsepower and rotor size. The reclaimer shall be capable of pulverizing and mixing pavement, base materials, and subgrade soil to a depth of 16 inches. It shall have the capability of introducing and metering additives uniformly and accurately and that positive displacement pumps accurately meter the planned amount of emulsion into the mixture. The reclaimer shall mix the emulsified asphalt additive thoroughly with the RAP and soil materials. The pump shall be mechanically or electronically interlocked with the ground speed of the machine. The asphalt metering system and water metering system shall be capable of continuously monitoring (GPM) flow and totaling the quantity of water and asphalt emulsion applied into the mixing chamber. Additives shall be uniformly distributed and mixed with the pulverized material, any existing underlying material as specified. Equipment such as road planers or cold milling machines designed to mill or shred the existing bituminous concrete, rather than crush or fracture it, shall not be allowed.

Motor Grader: Shall be of sufficient size and horsepower to adequately rough-grade the pulverized base and rough and finish grade the mixed and compacted base. The equipment shall be in good working order free from leaks and capable of maintaining an accurate grade and cross-slope.

Rollers: Shall be in good working order free from leaks and capable of compacting the mix to the requirements of this specification. Vibratory rollers shall be a minimum of 10 tons and capable of rolling in either vibratory or static mode. Three-wheel static rollers shall be a minimum of 11 tons. pneumatic tire rollers shall have a minimum of 9 oscillating wheels with smooth, low pressure tires (pressure shall be equally matched in all tires within 5 psi) and weigh at least 20 tons. Initial compaction shall be accomplished by either single or dual drum vibratory or three wheel roller static rollers.

Additional equipment: Provide additional equipment needed to complete the operations required by this technical provision. Availability of quality assurance devices (such as a 15 straight edge) shall be the responsibility of the Contractor.

Construction:

Layout: The Contractor shall be responsible for the string lining and layout of the roadway prior to paving. Elevations of the existing road must be referenced at sufficient intervals to ensure the roadway elevation is not changed in any location after final surface is placed. Method for layout and line and elevation reference shall be approved by the City prior to beginning work. It is imperative that roadway elevations remain unchanged except cross slope correction or as approved by the engineer.

ITB 19-35 CITYWIDE PAVING PROGRAM
Weather and Seasonal Limitations: The base shall not be mixed or placed while the atmospheric temperature is below 50°F or when conditions indicate that the temperature may fall below 50°F within 24 hours, or when the weather is foggy or rainy, or when the soil or subgrade is frozen.

Widening: When the existing base is to be widened, excavate the shoulder from the edge of the existing pavement to at least 6 inches beyond the planned new width of the base prior to pulverization. The bottom of the trench shall be kept free of loose soil and vegetation.

Approved base material (those bases listed in FDOT Design Standards as General Use Optional Base Materials) shall be placed onto the existing pavement so it can be mixed in with the existing pavement and base material during the pulverization operation to make a homogeneous base course across the entire width of the road, including the widening area. Correct all areas of irregular grade or deficient thickness and remove and replace material contaminated with soil, organic material, or debris.

After the final pass of the reclaimer, soil shall be drawn up against the widening material to close the excavation and the shoulder shall be graded and compacted to produce a firm, even surface.

Additional Material: When additional material is to be added to correct cross-slope deficiencies or change elevation as directed by the engineer, approved base material (those bases listed in FDOT Design Standards as General Use Optional Base Materials) shall be placed on the roadway prior to final pass for pulverization and mixed uniformly with the existing material.

Pulverization: The existing pavement and base material shall be pulverized and blended to the depth required so the entire mass of material shall be uniformly graded to the following gradation:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Min. Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>400</td>
</tr>
<tr>
<td>2&quot;</td>
<td>95</td>
</tr>
<tr>
<td>Number 4</td>
<td>65</td>
</tr>
<tr>
<td>No. 200</td>
<td>20</td>
</tr>
</tbody>
</table>

Material gradation may vary due to local aggregates and conditions. A minimum of two passes of the reclaimer are required; additional passes may be necessary to achieve the required gradation. If material removal is required to maintain roadway elevation or correct cross slope, removal shall be done prior to the final pass of the reclaimer. Injection shall occur on the final pass of the reclaimer.

The asphalt emulsion shall be introduced into the mix through the reclaimer uniformly and accurately and metered such that areas are of equal consistency and moisture content. The reclaimed material and additives shall be combined in place to meet the requirements specified in such proportions that the reclaimed mixture is of acceptable composition and stability. Before the start and at the end of each day's work and at any time requested, the City engineer, or designee, shall be permitted access to the mixing equipment in order to read the meter to verify the quantity of asphalt emulsion applied during the day’s work. Field adjustments shall be made as necessary to the recommended mix design under the guidance of a knowledgeable and competent technician or superintendent to obtain a satisfactory reclaimed mixture of consistent composition and stability throughout the project.

After the material has been processed, it shall be compacted to the lines, grades, and depth required. Water may be applied to ensure optimum moisture content at the time of mixing and compaction.

Compaction: Commence rolling with self-propelled rollers as required by this technical provision at the low side of the course, except leave 3 to 6 inches from any unsupported edge or edges unrolled initially to

ITB 19-35 CITYWIDE PAVING PROGRAM  Page 22 of 140
prevent distortion. Density readings shall be taken by Contractor's licensed nuclear gauge operator and witnessed by the Engineer/Inspector. A control strip of not less than 500 feet shall be constructed to develop proper rolling/compaction patterns and methods to obtain desired density. Whenever there is a change in the reclaimed material or compaction method, equipment or unacceptable results occur, a new control strip shall be constructed, tested and analyzed.

The number, weight and type of rollers furnished shall be sufficient to obtain the required compaction of the reclaimed material. The field density of the compacted mixture shall be at least 96.0% of the maximum density of laboratory specimens prepared from samples of the base material taken from the material in place. The specimens shall be compacted in accordance with AASHTO T312. The in-place field density shall be determined in accordance with ASTM D 2922.

Any pavement-shoving or other unacceptable displacement shall be corrected. The cause of the displacement shall be determined, and corrective action taken immediately and before continuing rolling. Care shall be exercised in rolling the edges of the reclaimed mixture, so the line and grade of the edge are maintained.

At the end of each day's production, a transverse construction joint shall be formed by a header or by cutting back into the compacted material to form a true vertical face free of loose material. The protection provided for construction joints shall permit the placing, spreading, and compacting of base material without injury to the work previously laid. Where it is necessary to operate or turn any equipment on the completed base course, sufficient protection and cover shall be provided to prevent damage to the finished surface. A supply of mats or wooden planks shall be maintained and used as approved and directed by the Engineer.

Finishing: Finishing operations shall be completed and the base course shall conform to the required lines, grades, and cross section. If necessary, the surface shall be lightly scarified to eliminate any imprints made by the compacting or shaping equipment. The surface shall then be recompacted to the required density. Correct all irregularities greater than 1/8" over ten feet to the satisfaction of the engineer.

Protection and Curing: After the base course has been finished as specified herein, it shall be protected by the application of a prime coat as specified in FHWA Standard Specifications section 300 at a rate of not less than 0.15 gal/500 sq. yd. The curing method shall begin as soon as possible, but no later than 24 hours after the completion of finishing operations. The finished base course shall be kept moist continuously until the curing material is placed.

At the time the prime coat is applied, the surface shall be dense, free of all loose and extraneous material, and shall contain sufficient moisture to prevent penetration of the bituminous material. Water shall be applied in sufficient quantity to fill the surface voids immediately before the bituminous curing material is applied.

Finished portions of base that are used by equipment in constructing an adjoining section shall be protected to prevent equipment from marring or damaging the completed work.

Thickness: The average thickness of the base constructed during one day shall be within 1/4" of the thickness required, except that the thickness of any one point may be within 3/8" of that required. Where the average thickness shown by the measurements made in one day's construction is not within the tolerance given, the Engineer shall evaluate the area and determine if, in his/her opinion, it shall be reconstructed at the Contractor's expense or the deficiency deducted from the total material in place.
### Control Testing for Full-Depth Reclamation Field Sampling and Testing

<table>
<thead>
<tr>
<th>Type of Testing</th>
<th>Frequency</th>
<th>Sample Location &amp; Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAP Gradation: 3&quot;, 2&quot;, No. 4 and No. 200</td>
<td>Each 3,000 SY or Min. once per day</td>
<td>Random locations after spreading prior to compaction</td>
</tr>
<tr>
<td>Moisture-Density Relationship of Reclaimed Base</td>
<td>Each 3,000 SY or Min. once-per-day¹</td>
<td>Sample at point of each Nuclear Density Measurement</td>
</tr>
<tr>
<td>In-Place Field Density²</td>
<td>Each 250 Square yards⁴</td>
<td>Random locations after spreading and Compaction operations</td>
</tr>
<tr>
<td>Moisture Added to RAP³</td>
<td>Each 1,000 Square yards³</td>
<td>Reclaimed Lift Depth Sample at Point of each Nuclear Density Measurement</td>
</tr>
</tbody>
</table>

### Table A Notes

1. Additional sampling and testing may be required if major changes in RAP characteristics are observed.

2. Sample RAP in accordance with ASTM-D678 or AASHTO T168 procedures for Sampling Bituminous Paving Mixtures.

3. Target densities for reclaimed mix compaction are established by the laboratory compaction of specimens in accordance with ASTM-D656. The compacted field density shall be determined in accordance with ASTM D 2022. Dry density shall be determined by correcting the moisture density using the procedure in Note 4.

4. The moisture content shall be determined by AASHTO T110 for Moisture or Volatile Distillates in Bituminous Paving Mixtures. Also, the moisture content appears to be determined adequately by weighing and drying to a constant weight using a forced draft oven as for ASTM-D 2216 or AASHTO T 265 or by microwave oven drying as for ASTM-D 4643.

5. For each length or lot-size quantity specified, materials sampling shall be completed on a random basis using the procedures of ASTM-D 3366 for Random Sampling of Construction Materials.

The depth of Reclaimed Bituminous Base Course shall be determined by measuring compacted reclaimed material immediately behind the final rollers in conjunction with measuring the milling depth prior to placement of reclaimed material. One depth measurement for each 250 square yards of completed base course shall be made. Any section deficient by 0.5 in. (12 mm) or more from the specified depth shall be removed and satisfactorily replaced by the contractor at no additional cost. At the City's option, cores may be taken by the engineer in the finished product to further ensure base thickness meets requirements.

All delivery tickets and notes regarding any materials brought to the project site to complete this Contract must be given to the Engineer/Inspector upon delivery to the project site.

### Traffic Control

The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on freshly reclaimed base until rolling and blotting has been completed. The Contractor shall submit a MOT plan addressing all facets of traffic control for the project area. The MOT plan shall be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP 102. MOT and associated devices shall be checked daily and periodically throughout the project for compliance, and where adjustments or corrections are needed, prompt revisions shall be made. Unless specifically approved prior to construction in writing by the City Engineer, all roadways shall be returned to traffic the same day and all lane closures removed and roadway lanes fully opened.
Method of Measurement:

If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified including all items of work described herein. Any item necessary for Full-Depth Reclamation with Asphalt Emulsion and not specifically listed in another item in the bid form, shall be included in the SY cost for Pulverization including but not limited to shaping, compacting, finish grading, prime coat, sanding prime coat, etc. Cost for introduction of asphaltic cement into the mixture shall be included in the per GL cost for Asphalt Emulsion. Cost for excavation for widening will be included in the CY Price for Excavation. Cost for additional materials needed for widening or adjustment of grade as directed by the engineer shall be included in the CY Price for General Use Optional Base Material.

Basis of Payment:

The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for Full-Depth Reclamation (Pulverization), the per Gallon price for Asphalt Emulsion, the per Cubic Yard price for Excavation and the per Cubic Yard price for General Use Optional Base Material. The Unit prices include all items listed in the JTB including all General Conditions, Special Conditions and Technical Provisions pertaining to Full-Depth Reclamation with Asphalt Emulsion, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this JTB as detailed in the specifications.

TECHNICAL PROVISION TP-309
CRACK SEALING

The work covered by these specifications consists of furnishing all labor, equipment and materials necessary to perform all operations in connection with the cleaning and sealing of construction and random cracks.

Material: Utilize Rubberized Joint-Sealing Material meeting the requirements of Modified AASHTO M173. Utilize Asphalt Rubber Sealing Compound meeting the requirements of ASTM D5078.

Equipment

Kettle: The kettle shall be an oil-jacketed double wall kettle equipped with agitator and 2-inch hot-asphalt pump. Provide separate thermometers for oil bath and melting chamber. Provide a pump for circulating the transfer oil bath. Do not allow the operating temperature in the kettle to exceed the flash point of the sealing material.

Compressor: Utilize an air compressor capable of maintaining a minimum of 100 PSI at 150 CFM, measured at the source and equipped with traps that will maintain the compressed air free of oil and water.

Extruder: Provide an extruder capable of providing variable width overband from 2 to 4 inches where overband process is utilized. Where the pavement being sealed will be overlaid within six months of sealant application, the sealant placement shall be recessed 1/4" in the crack or joint reservoir with no overband.
Construction

No crack sealing material shall be applied when pavement temperature is below 40°F, unless a heat lance is utilized to adequately heat the crack. No material shall be placed on wet surfaces.

Vegetation and other deleterious materials shall be removed prior to sealing utilizing a motorized wire brush. All cracks shall be cleaned of loose dirt and debris with a compressor.

Where overbanding is required, fill joints and cracks in such a manner to provide a 2" band centered over the joint. The thickness of the material shall not exceed 1/8" to 1/16". Material shall be leveled by means of a squeegee or a dish mounted on the delivery wand.

When traffic requires immediate use of the roadway, a boiler slag aggregate shall be broadcast over cracks to prevent sealer pickup.

All workmanship shall be of the highest quality, and excess spilled sealer shall be removed from the pavement surface by approved methods and discarded. Any workmanship determined to be below standards of the particular craft involved will not be accepted and will be corrected and/or replaced as required by the City.

Traffic Control: The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on affected areas until all operations have been completed and the sealer has dried or cover aggregate placed such that tire pickup will not occur. The Contractor shall submit a MOT plan indicating all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with TP-102. MOT and associated devices shall be checked daily and periodically throughout the project for compliance, and where adjustments or corrections are needed, prompt revisions shall be made.

Method of Measurement: If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be per Gallon or as specified in the Bid Form including all items of work described herein. Any item necessary for Crack Sealing, and not specifically listed in another item in the Bid Form, shall be included in this item.

Basis of Payment: The quantities to be paid for under this Technical Provision shall be included in the per Gallon unit price for Crack Sealing or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Crack Sealing, including all MOT as described in TP-102 and all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.
TECHNICAL

PROVISION TP-313a

Rejuvenating Fog Seal

The work specified in this section consists of furnishing and applying a rejuvenating fog seal on existing roads at application rates described here in.

Description: Rejuvenating Fog seals are a method of adding asphalt to an existing pavement surface to improve sealing or waterproofing while replacing softer fractions of the asphalt lost through manufacture, placement and oxidation due to weathering. They help prevent further stone loss by holding aggregate in place and create a superior bond to underlying asphalts through the softening of the top layer.

Materials:

Liquid-emulsified bituminous material: A polymer-modified liquid bituminous material containing rejuvenating agent conforming to the following requirements. The contractor shall certify the liquid bituminous material meets this specification. Additionally, the emulsion supplier shall receive quarterly certificates of analysis from both the polymer and rejuvenating agency manufacturers. The COAs will be provided to the agency upon request.

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Procedure</th>
<th>Specification (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emulsion Properties</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity, Saybolt Furol, @ 77°F, SFS</td>
<td>T51</td>
<td>10</td>
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<tr>
<td>Storage, 24 hour, %</td>
<td>T59</td>
<td>1</td>
</tr>
<tr>
<td>Oil Distillate, %</td>
<td>T59</td>
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</tr>
<tr>
<td>Sieve Test, %</td>
<td>T59</td>
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<tr>
<td>Residue by Distillation @ 350°F, %</td>
<td>T59</td>
<td>30</td>
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<tr>
<td><strong>Residue Properties from Distillation</strong></td>
<td></td>
<td></td>
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<tr>
<td>Penetration @ 4°C, 200g weight, 60 sec</td>
<td>T40</td>
<td>30</td>
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<tr>
<td>Residue Properties From Low Temp Evaporation</td>
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<td></td>
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<tr>
<td>Poly (ASTM 772-11, Procedure-B)</td>
<td>T415</td>
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<tr>
<td><strong>Polymer Properties</strong></td>
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<td></td>
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<tr>
<td>Swelling in rejuvenating agent, % max weight increase: 48 hrs</td>
<td>ASTM-D471-Mod</td>
<td>40%</td>
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<tr>
<td>Tensile Strength (psi)</td>
<td>ASTM-D442a Mod</td>
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<tr>
<td>Glass Transition Temperature (Tg) Midpoint by DSC (°C)</td>
<td>ASTM-D7426</td>
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<td>Latex Density at 23°C (g/cm³)</td>
<td>ASTM-D6837 Mod</td>
<td>1.00 1.95</td>
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<tr>
<td>Latex pH</td>
<td>ASTM E70 Mod</td>
<td>6.0 8.0</td>
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<tr>
<td>Test on Rejuvenating Agent</td>
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<tr>
<td>Flash Point, COC, °F</td>
<td>T48</td>
<td>380</td>
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<tr>
<td>Viscosity, 140°F, CST</td>
<td>201</td>
<td>50 175</td>
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<tr>
<td>Saturate, % by wt</td>
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<td>30</td>
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<tr>
<td>Asphaltene</td>
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<td><strong>Test on Rejuvenating Residue</strong></td>
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<td>Weight change, %w</td>
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<tr>
<td>Viscosity Ratio (RTF/C/Orig.)</td>
<td>ASTM-D2470</td>
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</table>
1. Exception to AASHTO T59: Bring the temperature on the lower thermometer slowly to 350°F plus or minus 10°F. Maintain this temperature for 20 minutes. Complete the total distillation in 60 plus or minus 5 minutes.
2. Use these modifications for Polymer Properties testing:


1. Using a syringe, place 0.8 gm of latex into an 18 mm diameter DSR mold.
2. Allow the sample to dry at ambient lab conditions (air conditioned) on the bench for 72 hours. Sample should be easily removable from the mold.
3. Take the "button" out of the mold and place the sample into a forced-air oven at 40°C (104°F) for 48 hours (on release paper). If at the end of the ambient dry, the sample sticks to the mold, place it into the oven and check it after 1–2 hours.
4. After 48 hours cool and weigh the sample to the nearest 0.0001 gram and record the weight.
5. Put ¼ inch of Rejuvenating Agent into a 3 oz penetration tin.
6. Place the "button" on the Rejuvenating Agent, and add another ½ inch of Rejuvenating Agent, so that the "button" is covered.
7. Put the cap on the penetration tin and place it into the 40°C oven for 48 hours.
8. Remove the "button from the Rejuvenating Agent, blot surface of the "button" to remove excess Rejuvenating Agent, cool the "button" to room temperature and weigh it.
9. Calculate weight gain of the "button", express as %.

**ASTM D442A Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension: Modifications**

1. To prepare the polymer film, dilute the waterborne polymer to 40% Total Solids Content and pour 57 g into a Teflon or silicone release mold of dimensions 71/8" X 71/8" X ¼".
2. Allow to dry at 23°C (73°F) and 50% RH (controlled conditions) for 7—10 days total time, during which time the film should be flipped around once, preferably after 3 or 4 days. The film should be transparent in the end.
3. To drive out any residual water, place the film in an oven at 50°C for 30 min. Dried film thickness should be 25 mil + 5 mils. Discard films <20 mil.
4. Cut out dumbbell-shaped test specimens of dimension 75 mm total length, 25 mm mid-section (L) and 4 mm width of mid-section.
5. Grip in Instron machine with gap size 1 inch, use 8 inch/min cross-head speed.

**ASTM D7426 Standard Test Method for Assignment of the DSC Procedure for Determining Tg of a Polymer or an Elastomeric Compound—Modifications**

Use between 3—50 mg dry polymer. Instrument used is TA Q2000 Differential Scanning Calorimeter (DSC). Heating rate is 20°C/min.


Replace "Emulsified Asphalt" with "Latex" in text of test method. The testing temperature used should be 25 +/− 3°C. The calculation in Section 7 should be as follows.
Calculation:
\[ D = (W_f - W_t) \times 0.1 \]
\[ S_G = D / 8.337 \]
Where: \( W_f \) = Weight of filled cup (g) \( W_t \) = Weight of empty cup (g)

ASTM E70 Standard Test Method for pH of Aqueous Solutions with the Glass Electrode: Modifications

1. A pH meter with automatic temperature measurement should be used in the evaluation with a calomel cell assembly or combination electrode. Calibration should be made using the procedure with the pH meter, according to ASTM method, prior to testing the pH of the latex. In Section 9, the procedure for measuring pH of the latex should be as follows:

(a) Place the electrode and probe into the dispersion that is to be measured and swirl the sample cup or beaker gently. (You may also use the probe in a stirring motion.)

(b) Wait for the reading to stabilize (usually less than a minute) and read/record this value. Note the temperature if not utilizing an ATC probe.

(c) Take the electrode and ATC probes from the sample and rinse thoroughly with de-ionized water. Pat dry and place back into appropriate solution recommended by electrode manufacturer for storage.

End of Test Modifications

Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it meets the requirements of this specification. COA shall include, at a minimum, required emulsion properties and percentage of polymer solids in the emulsion.

Material Samples: The City will require the Contractor to sample and test each load of emulsion prior to delivery. The Contractor will also provide a sample of the emulsion, on site, prior to commencing work. The City will require the Contractor to provide sample containers and a local independent testing laboratory for the analyzing of emulsion. The Contractor will be responsible for the cost of the testing. The City reserves the right to test any shipment of emulsion that is believed to be substandard. All samples shall be shipped and stored in clean air-tight sealed wide mouth jars or bottles made of plastic. If requested by the City, samples of rejuvenator and polymer shall also be provided in sample containers for testing by the City. Cost of polymer and rejuvenator testing shall be borne by the City. Where these tests identify material outside specification requirements, the City shall require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the City. Further, the City may require the material placed containing the emulsified asphalt outside of specification requirements to be removed and replaced at the sole expense of the contractor or left in place at no pay.

Equipment:

Distributor: The liquid bituminous material shall be applied with a truck-mounted, pressure distributor that has been calibrated within the previous twelve (12) months, for transverse and longitudinal application rate. The distributor shall be equipped, maintained and operated so that the bituminous material can be applied at controlled temperatures and rates from .03 to .22 gallons per square yard with
nozzles adjusted to allow minimum overlap of 3x. The distributor shall be capable of applying bituminous material of variable widths up to sixteen (16) feet. The distributor shall uniformly apply the bituminous material to the specified rate with a maximum allowed variation of 0.015 gallons per square yard. Distributor equipment shall include tachometer, accurate volume measuring device, a calibrated tank and a thermometer for measuring the temperature of the tank’s contents. Distributors shall be equipped with an asphalt pump and full circulating spray bars adjustable laterally and vertically. Distributors and transport trailers shall be equipped with a sampling valve. Distributor trucks shall be of the pressure type with insulated tanks. The use of gravity distributors will not be permitted. The valves shall be operated by levers so that one or all valves may be quickly opened or closed in one operation. The valves which control the flow from nozzles shall act positively so as to provide a uniform unbroken spread of bituminous material on the surface. The distributor shall be equipped with a computer-controlled DMI to provide for accurate and rapid determination and control of the amount of bituminous material being applied. The distributor shall be capable of carefully monitoring application rates with computer-generated reports registering speed in feet per minute, trip total distance in feet, and application rate.

**Sand Truck:** The truck used for sanding shall be equipped with a spreader that allows the sand to be uniformly distributed onto the pavement. The spreader shall be able to apply 1/2 pound to 3 pounds of sand per square yard in a single pass. The spreader shall be adjustable so as to broadcast sand onto driveways, tree lines, or lawns. The sand to be used shall be free flowing, without any leaves, dirt, stones, etc. Any wet sand shall be rejected from the job site.

**Additional Equipment:** Additional equipment may be needed to complete the operations required by this technical provision. All equipment necessary for the successful completion of projects governed by this technical provision shall be included in the unit costs associated herein. Availability of quality assurance devices shall be the responsibility of the Contractor.

**Construction:**

**Layout:** The Contractor will be responsible for the lay-out of the roadway and project planning and sequencing to meet traffic control requirements prior to placement of the sealer.

**Weather and Seasonal Limitations:** The fog seal shall not be applied to a wet surface or when rain is occurring, or when the threat of rain is present immediately before placement. The surface treatment shall not be applied when the ambient temperature or pavement temperature are less than 60°F.

If rain occurs prior to the emulsion breaking, the area shall be re-fogged at no cost to the City. Further, the contractor’s traffic control and project monitoring shall continue until the emulsion applied has broke and the resultant surface is not slippery or dangerous to vehicular travel.

**Preparation of Surface:** The contractor will be responsible for blowing and/or sweeping the roadway immediately ahead of the fog seal operation to make sure the road is free of sand, dust, loose aggregate and other debris. The surface shall be clean and dry prior to the application.

**Application of Bituminous Material:** The emulsion shall not be diluted.

Properly calibrated distributor trucks with 1/8" to 3/16" opening spray nozzles shall be used to apply the emulsion. The emulsion shall be heated to the manufacturer’s recommendation. The emulsion shall be sprayed at a rate as directed in the field by the City. Application will be determined dependent upon the surface conditions.

**Tight Surface (low absorbance and relatively smooth) — 6-10 gal/yr**
Open Surface (relatively porous and absorbent with open voids)—0.8—1.4 gal/yr

Exceptions: When fog seal is required as a subsequent treatment to chip seal, OGCM, or other method described in this contract, materials, equipment and application shall be as described in this technical provision and as amended in the technical provision appropriate to the work the fog seal is subsequent to. If discrepancies occur, the City shall determine the appropriate specification.

Sanding/Blotting: After the fog seal has penetrated and sufficiently broke, a coating of dry sand may be applied to the surface in sufficient amount to protect the traveling public. Application will be at the direction of the City and paid separately.

Contractor’s Quality Control Plan: Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the City with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:

- Source materials used on the project.
- Sampling and testing methods used to determine compliance with material specifications.
- Equipment to be used on the project.
- Calibration methods used to determine compliance with this specification.
- Pavement cleaning and preparation procedure.
- Plan for protecting fog seal from damage by traffic.
- Procedure for monitoring initial acceptance requirements.
- An action plan demonstrating adjustment of the operation for adverse environmental conditions or out of specification materials or procedures.

Traffic Control: The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh fog seal until material is sufficiently broke such that tire pickup does not occur. The Contractor shall submit an MOT plan indicating all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with TP-102. OT and associated devices shall be checked daily and periodically throughout the project for compliance; and where adjustments or corrections are needed, prompt revisions shall be made.

Documentation: Complete a daily report that includes the following information:

- Job number
- Route/Street Name(s)
- Owner’s On-Site Representative Name
- Date
- Air temperature—Min/Max (during application)
- Unit weight of emulsified asphalt (pounds per gallon)
- Beginning and ending application locations
- Length and width in feet
- Total area (square yards)
- Gallons of emulsified asphalt
- Application rate (pounds/gallons per square yard)
- Contractor’s authorized signature
- Emulsified asphalt bill of lading(s)

Method of Measurement: If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for Rejuvenating Fog Seal, and not specifically listed in another item in the Bid Form, shall be included in this item.
Basis of Payment: The quantities to be paid for under this Technical Provision shall be included in the per Gallon or SV price for Rejuvenating Fog Seal, the per Cubic Yard price for sanding or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Rejuvenating Fog Seal, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.

TECHNICAL PROVISION

TP-314

ASPHALT REJUVENATION SPECIFICATION

The work specified in this section shall consist of furnishing all labor, material, and equipment necessary to perform all operations for the application of an asphalt rejuvenating agent to asphaltic concrete surface courses.

Description: The rejuvenation of surface courses shall be by spray application of a maitene-based cationic rejuvenating agent composed of petroleum oils and resins emulsified with water. All work shall be in accordance with the specifications, the applicable drawings, and subject to the terms and conditions of this contract.

Materials:

The asphalt rejuvenating agent shall be an emulsion composed of a petroleum resin oil base uniformly emulsified with water. Each bidder must submit with his bid a certified statement from the asphalt rejuvenator manufacturer showing that the asphalt rejuvenating emulsion conforms to the required physical and chemical requirements.

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>Test Method</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emulsion:</td>
<td></td>
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<tr>
<td>Viscosity @ 25</td>
<td>C, SFSD 244</td>
<td>T-69 15-40</td>
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<tr>
<td>Residue, % W¹</td>
<td>D-244(Mod.)</td>
<td>T-59 (Mod) 60-66</td>
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<tr>
<td>Miscibility Test²</td>
<td>D-244(Mod.)</td>
<td>T-59 (Mod) No Coagulation</td>
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<td>Sieve Test, % W³</td>
<td>D-244(Mod.)</td>
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<td>Particle Charge Test</td>
<td>D-244</td>
<td>T-59 Positive Percent Light</td>
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<td>Transmittance⁴</td>
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<td>GB 30</td>
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Tests on Residue from Distillation:

| Flash Point, COC |            | D-92 T-48 196 - |
| Viscosity @ 60   | C, e St D-445 | 400 200 |
| Asphaltene, % W | D-2006-70 | - 4.00 |
| Maitene Dist. Ratio | D-2006-70 | - 0.3 0.6 |

\[
\begin{align*}
\text{PC + A₄} / \text{S + A₂} & = \text{-} \\
\text{PC/S Ratio} & = \text{D-2006-70 0.5 -} \\
\text{Saturated Hydrocarbons, S} & = \text{D-2006-70 24 28}
\end{align*}
\]
1. ASTM D-244 Modified Evaporation Test for percent of residue is made by heating 50-gram sample to 149°C (300°F) until foaming ceases; then cool immediately and calculate results.

2. Test procedure identical with ASTM D-244-60 except that 0.2 Normal Calcium Chloride solution shall be used in place of distilled water.

3. Test procedure identical with ASTM D-244 except that distilled water shall be used in place of two percent sodium oleate solution.

4. Test procedure is attached.


Material Performance: The asphalt rejuvenating agent shall have the capability to penetrate the asphalt pavement surface. The asphalt rejuvenating agent shall be absorbed and incorporated into the asphalt binder. Verification that said incorporation of the asphalt rejuvenating agent into the asphalt binder has been affected shall be by analysis of the chemical properties of said asphalt binder i.e. viscosity shall be improved to the following extent. The viscosity shall be reduced by a minimum of forty percent (40%) percent as determined by dynamic shear rheometer (DSR) method for asphalt testing in accordance with AASHO T315-05. This analysis shall apply to extracted asphalt binder, taken from cores extracted fifteen to thirty days following application, in the upper 3/8” of pavement. In addition, the treated areas shall be sealed in depth to the intrusion of air and water.

The rejuvenating agent shall have a record of at least five years of satisfactory service as an asphalt rejuvenating agent and in depth sealer. Satisfactory service shall be based on the capability of the material to decrease the viscosity of the asphalt binder and provide an in-depth seal. Reclamite®, manufactured by D&D Emulsion, Inc., Mansfield, Ohio, is a product of known quality and accepted performance.

The bidder must submit with his bid the manufacturer’s certification that the material proposed for use is in compliance with the specification requirements. The bidder must submit with his bid previous use documentation and test data conclusively demonstrating that the rejuvenating agent has been used successfully for a period of five years by government agencies such as Cities, Counties, etc. and that the asphalt rejuvenating agent has been proven to perform, as heretofore required, through field testing by government agencies as to the required change in asphalt binder viscosity. Testing data shall be submitted indicating such product performance on a sufficient number of projects to insure product consistency. In addition, testing data shall be submitted to indicate said product performance over a testing period of three years to ensure reasonable life expectancy.

RECLAMITE®, a product of Golden Bear Oil, a division of Tower Refining, LLC, is a product of known quality and accepted performance.

Equiptment:

Distributor: The distributor for spreading the emulsion shall be self-propelled and shall have pneumatic tires. The distributor shall be designed and equipped to distribute the asphalt rejuvenating agent uniformly on variable widths of surface at readily determined and controlled rates from 0.05 to 0.5 gallons per square yard of surface, and with an allowable variation from any specified rate not to exceed 5 percent of the specified rate.

Distributor equipment shall include full circulation spray bars, pump-tachometer, volume measuring
device and a hand-hose attachment suitable for application of the emulsion manually to cover areas inaccessible to the distributor. The distributor shall be equipped to circulate and agitate the emulsion within the tank.

A check of distributor equipment as well as application rate, accuracy and uniformity of distribution shall be made when directed by the Engineer.

**Sand Truck:** The truck used for sanding shall be equipped with a spreader that allows the sand to be uniformly distributed onto the pavement. The spreader shall be able to apply 1/2 pound to 2 pounds of sand per square yard in a single pass. The spreader shall be adjustable so as not to broadcast sand onto driveways or to lawns.

The sand to be used shall be free flowing, without any leaves, dirt, stones, etc. Any wet sand shall be rejected from the job site.

Any equipment that is not maintained in full working order, or is proven inadequate to obtain the results prescribed, shall be repaired or replaced at the direction of the Engineer.

**Construction:**

**Layout:**
The Contractor will be responsible for the lay out of the roadway and project planning and sequencing to meet traffic control requirements prior to paving.

**Weather and Seasonal Limitations:**
The asphalt rejuvenating agent shall not be applied to a wet surface or when rain is occurring, or the threat of rain is present immediately before placement. The surface treatment shall not be applied when the temperature is less than 50 degrees Fahrenheit in the shade. When applying emulsions, the temperature of the surface shall be a minimum of 50°F and no more than 140°F.

If unexpected rain occurs prior to material penetration and sanding, the agent shall be reapplied at nearest to the City. Further, the contractor's traffic control and project monitoring shall continue until the application has penetrated, area has been sanded and the resultant surface is not slippery or dangerous to vehicular traffic.

**Preparation of Surface:**
The contractor will be responsible for blowing or sweeping the road immediately ahead of the fog-sel operation to make sure the road is free of loose aggregate and other debris. The surface shall be clean and dry prior to the application.

The asphalt rejuvenating agent shall be applied by a distributor truck at the temperature recommended by the manufacturer and at the pressure required for the proper distribution. The emulsion shall be so applied that uniform distribution is obtained at all points of the areas to be treated. Distribution shall be commenced with a running start to insure full rate of spread over the entire area to be treated. Areas inadvertently missed shall receive additional treatment as may be required by hand sprayer application.

Application of asphalt rejuvenating agent shall be on one-half width of the pavement at a time. When the second half of the surface is treated, the distributor nozzle nearest the center of the road shall overlap the previous application by at least one-half the width of the nozzle spray. In any event the centerline construction joint of the pavement shall be treated in both applications passes of the distributor truck.

Before spreading, the asphalt rejuvenating agent shall be blended with water at the rate of two (2) parts
rejuvenating agent to one (1) part water, by volume or as specified by the manufacturer. The combined mixture of asphalt-rejuvenating agent and water shall be spread at the rate of 0.05 to 0.10 gallons per square yard, or as approved by the Engineer following field testing.

Where more than one application is to be made, succeeding applications shall be made as soon as penetration of the preceding application has been completed and the Engineer grants approval for additional applications.

Grades or super-elevations of surfaces that may cause excessive runoff, in the opinion of the Engineer, shall have the required amounts applied in two or more applications as directed.

After the street has been treated, the area within one foot of the curb line on both sides of the road, when directed by the Engineer, shall receive an additional treatment of the asphalt-rejuvenating emulsion. Said treatment shall be uniformly applied by a method acceptable to the Engineer.

After the rejuvenating emulsion has penetrated, a coating of dry sand shall be applied to the surface in sufficient amount to protect the traveling public as required by the Engineer.

The Contractor shall furnish a quality inspection report showing the source, manufacturer, and the date shipped, for each load of asphalt rejuvenating agent. When directed by the Engineer, the Contractor shall take representative samples of material for testing.

Applicator Experience: The asphalt-rejuvenating agent shall be applied by an experienced applicator. A project superintendent knowledgeable and experienced in application must be in control of each day's work.

Material Standards and Alternates: The product "Reclaimite"®, as manufactured by Golden Bear Oil, a division of Tricor Refining, LLC, for the asphalt-rejuvenating agent is the standard for these specifications and the prices quoted on the Bid Sheet Base Bid shall be for this standard. Should a bidder wish to submit a bid for alternates to the Standard, said prices shall be entered on the BID SHEET as the "Alternate Bid" for each item. In the event that the bidder submits no bid for the Standard, only the "Alternate Bids" should be completed.

Bidders may offer an ALTERNATE for the Standard specified in the Specifications provided the bidder adheres to the following and submits same with his bid:

(a) List the proposed alternate on the BID SHEET form giving the product name and price.

(b) Furnish complete specifications and descriptive literature for the alternate as well as a one-gallon sample of the material proposed for use. Such descriptive and detailed information shall be complete and at least equal in detail to the City's requirements for the standard item for which the alternate is offered.

(c) Submit a current Material Safety Data Sheet for the alternate materials. The City will give the alternate consideration. The Contractor may furnish only those alternate items included in his proposal and approved by the City prior to award of a contract.

(d) Furnish all required test data and use documentation as hereto for required.

If no ALTERNATE is indicated on the BID SHEET, the Contractor shall furnish the STANDARD.
Weather and Seasonal Limitations: The temperature of the asphalt rejuvenating emulsion, at the time of application shall be as recommended by the manufacturer. The asphalt rejuvenating agent shall be applied only when the existing surface to be treated is thoroughly dry and when it is not threatening to rain. The asphalt rejuvenating agent shall not be applied when the ambient temperature is below 40°F.

Handling of Asphalt-Rejuvenating Agent: Contents in tank cars or storage tanks shall be circulated at least forty-five minutes before withdrawing any material for application. When loading the distributor, the asphalt rejuvenating-agent concentrate shall be added first and then the required amount of water shall be added. The water shall be added into the distributor with enough force to cause agitation and thorough mixing of the two materials. To prevent foaming, the discharge end of the water hose or pipe shall be kept below the surface of the material in the distributor that shall be used as a spreader. The distributor truck will be cleaned of all of its asphalt materials and washed out to the extent that no discoloration of the emulsion may be perceptible. Cleanliness of the spreading equipment shall be subject to the approval and satisfaction of the Engineer.

Street Sweepings: The Contractor shall be responsible for sweeping and cleaning of the streets prior to, and after treatment.

Prior to treatment, the street will be cleaned of all standing water, dirt, leaves, foreign materials, etc. This work shall be accomplished by hand-brooming, power blowing or other approved methods. If, in the opinion of the Engineer, hand-cleaning is not sufficient, a self-propelled street sweeper shall be used.

All sand used during the treatment must be removed no later than 48 hours after treatment of the street. This shall be accomplished by a combination of hand and mechanical sweeping. All turnouts, cul-de-sacs, etc., must be cleaned of any material to the satisfaction of the Engineer. Street sweeping will be included in the price bid per square yard for asphalt rejuvenating agent.

If, after sand is swept and in the opinion of the Engineer a hazardous condition exists on the roadway, the contractor must apply additional sand and sweep same no later than 24 hours following reapplication. No additional compensation will be allowed for reapplication and removal of sand.

Traffic Controls:

The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh Asphalt Rejuvenator until penetration, in the opinion of the Engineer, has become complete and the area is suitable for traffic. The Contractor shall submit an M.O.T. plan indicating all facets of traffic control for the project area. The M.O.T. plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. M.O.T. and associated devices shall be checked daily and periodically throughout the project for compliance, and where adjustments or corrections are needed, prompt revisions shall be made.
Method of Measurement:

If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be per Square Yard of Asphalt Rejuvenating Agent or as specified in the Bid Form including all items of work described herein. Any item necessary for Asphalt Rejuvenator as detailed in this specification, and not specifically listed in another item in the Bid Form, shall be included in this item.

Basis of Payment:

The quantities to be paid for under this Technical Provision shall be included in the per Square Yard price for Asphalt Rejuvenator or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Asphalt Rejuvenator, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.

Resident Notification: The contractor shall notify all residences and businesses on the street to be treated. The notice be delivered no more than 24 hours prior to the treatment of the road. The notice will have a local phone number that residents may call to ask questions. The notice shall be signs placed at each end of the treatment area. Unsecured notices will not be allowed. The contractor shall also place the notice on the windshield of any parked cars on the street. Hand distribution of this notice will be considered incidental to the contract.
Exhibit A

PROCEDURE FOR DETERMINING PERCENT-LIGHT TRANSMITTANCE ON ASPHALT REJUVENATING AGENT

A. SCOPE

This procedure covers the determination of percent-light transmittance of the asphalt rejuvenating agent.

B. APPARATUS

1) Container may be either glass, plastic or metal having a capacity of 6,000 ml.
2) Graduated cylinder, 1,000 ml or greater
3) Light transmittance measuring apparatus, such as Bausch and Lomb or Lumetron spectrophotometer
4) Graduated pipette having 1 ml capacity to 0.01 ml accuracy
5) Suction bulb for use with pipette
6) Test tubes compatible with spectrophotometer, 3/4” x 6”, Bausch and Lomb, Catalog No. 33-17-81, (B&L)

C. CALIBRATION OF SPECTROPHOTOMETER

1) Calibrate spectrophotometer as follows: (a) Set wavelength at 580 mu, (b) Allow spectrophotometer to warm-up thirty minutes, (c) Zero percent-light transmittance (%LT) scale, (d) Rinse test tube three times with tap water and fill to top of circle marking on B&L test tube or approximately 2/3 full, (e) Place tube in spectrophotometer and set %LT scale at 100, and (f) repeat steps (e) and (e) two times or until no further adjustments are necessary.

D. PROCEDURE

4) Shake, stir or otherwise thoroughly mix emulsion to be tested. Place sample of emulsion in beaker and allow to stand one minute.
2) Place 2,000 ml tap water in container.
3) Suck 1,000 ml emulsion into pipette using suction bulb. Wipe off outside of pipette.
4) Using suction bulb, blow emulsion into container.
5) Rinse pipette by sucking in diluted emulsion solution and blowing out.
6) Clean pipette with soap or solvent and water. Rinse with acetone.
7) Stir diluted emulsion thoroughly.
8) Rinse out tube to be used with the diluted emulsion three times and fill to top of circle.
9) Calibrate spectrophotometer.
10) Place diluted emulsion sample tube in spectrophotometer, cover and read %LT to nearest tenth.
44) Repeat steps 9 and 10 until three identical consecutive readings are achieved.
42) The elapsed time between addition of emulsion to dilution of water and final %LT reading should not exceed 5 minutes.
TECHNICAL PROVISION

TP-316

Asphaltic-Surface Treatment (Chip Seal)

The work specified in this section consists of furnishing and applying a single or double application of bituminous surface treatment on a prepared sub-grade or road base, compacted to the lines, grades, and thickness established by the City and in substantial conformance with the limits established by the owner.

Description: Chip Seal is a pavement surface treatment option that combines a layer of liquid asphalt emulsion or polymer modified liquid asphalt emulsion placed on a prepared base with a layer of aggregate spread and compacted while the asphalt is still liquid.

Materials

Aggregates: Crushed granite conforming to FDOT specifications section 901, table 1 for #89, #78 or #67 gradation for coarse aggregates except as modified herein. The aggregate shall be washed granite obtained from a source approved by the owner. Sampling and testing of aggregate shall be the responsibility of the contractor. Copies of test results from the aggregate supplier shall be furnished to the owner prior to the start of the surface treatment.

<table>
<thead>
<tr>
<th>Test on Aggregate</th>
<th>AASHTO</th>
<th>ASTM</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat and Elongated Particles in Cover Coat Aggregate</td>
<td>D-4791</td>
<td>3:1 -&lt;12%</td>
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<tr>
<td>Fractured Face</td>
<td>T-395</td>
<td>D-5824</td>
<td>100%</td>
</tr>
<tr>
<td>Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine</td>
<td>T-96</td>
<td>C-131</td>
<td>26% Max</td>
</tr>
</tbody>
</table>

Liquid bituminous material for surface treatment: CRS-2H or CRS-2P liquid bituminous material conforming to FDOT specification section 916 except as modified herein. The CRS-2P bituminous material shall be polymer modified prior to emulsification. The contractor shall certify the liquid bituminous material meets the FDOT specification.

The material shall contain carefully controlled amounts of selected diluents to promote workability and minimize stripping. Additives that enhance pavement performance are subject to approval by the City. The contractor shall certify the liquid bituminous material meets the specification. Further, the emulsion supplier shall receive quarterly certificates of analysis from both the polymer and rejuvenating agent manufacturer. The COAs will be provided to the City upon request.
<table>
<thead>
<tr>
<th>Material Designation</th>
<th>CRS-2P</th>
<th>AASHTO Test</th>
<th>Min</th>
<th>Max</th>
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<tbody>
<tr>
<td>Viscosity, Saybolt-122 °F (60 °C), s</td>
<td>T59</td>
<td>400</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>Storage Stability Test, 24 h, %</td>
<td>T59</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sieve test, %</td>
<td>T59</td>
<td>0.4</td>
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<td>Demulsiability, %</td>
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<td>% residue by volume of emulsion</td>
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<tr>
<td>% oil distillate by volume of emulsion</td>
<td>T69</td>
<td>0.5</td>
<td>0.5</td>
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</tbody>
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<tr>
<td>Storage Stability Test, 24 h, %</td>
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<td>1</td>
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<tr>
<td>Demulsiability, %</td>
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<td>% residue by volume of emulsion</td>
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<tr>
<td>% oil distillate by volume of emulsion</td>
<td>T69</td>
<td>0.5</td>
<td>0.5</td>
<td></td>
</tr>
</tbody>
</table>

| Tests on Residue from Distillation: | | |
|------------------------------------| | |
| Penetration, 77 °F, 100 g, 6 sec. | T49 | 400 | 425 |
| Elastic Recovery, % | T303 | 50 | 50 |
| Ductility, 77 °F, 5 cm/min, cm | T51 | 125 | 125 |
| Polymer Solids Content | T302 | 2.5 | 2.5 |
| Solubility in trichloroethylene | T44 | 97.6 | 97.6 |

Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it meets the requirements of this specification. COA shall include, at a minimum, required emulsion properties and percentage of polymer solids in the emulsion.

Material Samples: The City will require the Contractor to sample and test each load of emulsion prior to delivery. The Contractor will also provide a sample of the emulsion, on site, prior to commencing work. The City will require the Contractor to provide sample containers and a local Independent testing laboratory for the analyzing of emulsion. The Contractor will be responsible for the cost of the testing. The City reserves the right to test any shipment of emulsion that is believed to be substandard. All samples shall be shipped and stored in clean air tight sealed wide-mouth jars or bottles made of plastic. Where these tests identify material outside specification requirements, the City shall require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the City. Further, the City may require the material placed containing the emulsified asphalt outside of specification requirements to be removed and replaced at the sole expense of the contractor or left in place at no pay.

Equipment

Distributor: The liquid bituminous material shall be applied with a truck-mounted, pressure distributor that has been calibrated within the previous twelve (12) months, for transverse and longitudinal application rate. The distributor shall be equipped, maintained and operated so that the bituminous material can be applied at controlled temperatures and rates from .035 to 1.5 gallons per square yard. The distributor shall be capable of applying bituminous material of variable widths up to sixteen (16) feet. The distributor shall uniformly apply the bituminous material to the specified rate with a maximum allowed variation of 0.015 gallons per square yard. Distributor equipment shall include tachometer, accurate volume measuring device, a calibrated tank and a thermometer for measuring the temperature.
of the tank's contents. Distributors shall be equipped with a heating device, asphalt pump and full-circulating spray bars adjustable laterally and vertically. Distributors and transport trailers shall be equipped with a sampling valve. Distributor trucks shall be of the pressure type with insulated tanks. The use of gravity distributors will not be permitted. The valves shall be operated by levers so that one or all valves may be quickly opened or closed in one operation. The valves which control the flow from nozzles shall act positively to provide a uniform unbroken spread of bituminous material on the surface. The distributor shall be equipped with devices and charts to provide for accurate and rapid determination and control of the amount of bituminous material being applied and with a tachometer of the auxiliary wheel type registering speed in feet per minute, and trip and total distance in feet.

Aggregate Spreaders: The aggregate spreader shall be a self-propelled unit capable of uniformly spreading the aggregate at the required rate on a minimum width of six (6') inches wider than the width of the lane to be treated. The spreader shall be calibrated within the previous twelve (12) months for transverse and longitudinal application. The spreader shall be equipped with a computer-controlled aggregate/chip spreader in order to ensure the appropriate aggregate coverage at varying speeds, unless approved otherwise by Engineer.

Pneumatic Tire Rollers: The contractor shall use eight (8) to twelve (12) ton self-propelled pneumatic tire rollers with oscillating wheels and low-pressure, smooth tires. Maintain the inflation of the tires such that in no two tires the air pressure varies more than 5 psi. The rollers will be equipped with an operating water system and coco pads. A sufficient number of rollers and a sufficient number of passes shall be used to ensure cover aggregate is properly rolled.

Self-Propelled Rotary Power Broom: The self-propelled rotary broom shall be designed, equipped, maintained and operated so the pavement surface can be swept clean. The broom shall have an adjustment to control the downward pressure.

Additional equipment: Additional equipment will be needed to complete the operations required by this technical provision. All equipment necessary for the successful completion of projects governed by this technical provision shall be included in the unit costs associated herein. Availability of quality assurance devices (such as a 15' straight edge) shall be the responsibility of the Contractor.

Construction

Layout: The Contractor will be responsible for the string lining and lay out of the roadway prior to paving.

Weather and Seasonal limitations: The surface treatment shall not be applied to a wet surface or when rain is occurring, or the threat of rain is present immediately before placement. The surfacetreatment shall not be applied when the temperature is less than 50 degrees Fahrenheit in the shade. When applying emulsions, the temperature of the surface shall be a minimum of 55°F, and no more than 140°F.

Preparation of Surface: The chip seal material shall be placed on a firm unyielding prepared roadway. The Contractor shall be responsible for clearing back shoulders and removing overburden or any other vegetation or debris to ensure that the road is free of organic and deleterious material. The contractor shall be responsible for removal of all thermoplastic striping or signage on the surface of the roadway, and all Reflective Pavement Markers prior to beginning operation. Prior to the scrub seal operation, all drain inlet covers, monument covers, and all other utility covers shall be protected from the operation by applying a sheet of plastic over the exposed facilities, or other methods approved by the City. All traces of plastic, residual emulsion and aggregate shall be removed from covered objects after the application of the scrub seal and/or prior to final inspection of the project. The contractor will be responsible for blowing or sweeping the road immediately ahead of the chip seal operation to make sure the road is free of loose aggregate and other debris.
Application of bituminous material: Liquid bituminous material shall be applied by means of a pressure-type distributor in a uniform, continuous spread over the section to be treated. The distributor shall be moving forward at the proper speed when the liquid is discharged onto the pavement to provide an even and consistent application at the rate prescribed. If any areas are deficient the operation shall be stopped and corrected immediately. The liquid shall not be applied more than two hundred (200') feet in advance of the aggregate spreader when the ambient air temperature is above 75 degrees or one hundred (100') feet if the air temperature is below 75 degrees.

- Single Chip Seal: Application of the liquid bituminous material shall be applied at a rate of .20 - .50 gallons per square yard depending on the composition of the existing road-bed, surface texture and the size of the aggregate in use.
- Double Chip Seal: Application of the liquid bituminous material shall be applied at a rate of .50 - .95 gallons per square yard depending on the composition of the existing road-bed, surface texture and the size of the aggregate in use. The first application of a double chip shall contain 40% of the emulsion of the total seal, while the second application contains 60% of the emulsion.

Application of cover aggregate: Immediately following the spray-application of the liquid-bituminous material, cover aggregate shall be spread over the liquid material at a rate of 18 - 30 lbs.-square yard depending upon the type of road-base and/or the size of the existing aggregate that is being resurfaced.

During the first day of production and at least once a week thereafter, the application rate of the aggregate shall be verified by the contractor and witnessed by the city to assure that the appropriate application rate of the aggregate is applied. The rate can be verified by placing a tarp of at least 1.0 yd2 area on the roadway surface. After allowing the aggregate spreader to pass over the tarp, the aggregate on the tarp should be collected and weighed to determine the weight of aggregate. The measured weight should then be compared to the target weight.

Upon determining the target weight, it should be compared to the actual measured weight. If the difference in the target weight and the actual measured weight is over 1.5 pounds, the aggregate distributor should be adjusted such that the spread rate is within the above tolerance. The above procedure shall be repeated until the spread rate is within the allowable tolerance.

If at any point during production, excessive aggregate is noted, the aggregate application rate should be verified, and the spread rate adjusted. The intent is to minimize the amount of excess aggregate. Excess aggregate removed from the roadway surface after brooming shall be removed from the jobsite and should not be reused in the aggregate operation.

Rolling: Immediately following the first application of the cover material, roll the entire surface with a pneumatic roller, followed immediately with the steel drum roller. Cover the entire surface one time with the steel drum roller. Then, roll the cover material again with the pneumatic roller. Continue rolling as long as necessary to ensure thorough keying of the cover aggregate into the liquid bituminous material. Eliminate the steel drum when rolling the second application of cover aggregate. Apply the second application of liquid and cover material the same day as the first application, as far as it is practicable and consistent with the setting of the liquid bituminous material.

Sweeping: After rolling of the first application of cover aggregate, lightly broom the loose aggregate in a manner not to dislodge the aggregate embedded in the liquid. Sweep loose material from road bed. Following second application again broom loose aggregate from the road bed prior to the application of the fog seal. If temperatures exceed 85 degrees, it may be necessary to wait 24 hours before sweeping the first application of chip seal.
Fog Seal: Upon direction from the engineer, fog seal is to be applied as a separate pay item. When surface treatment has set, a fog seal is to be applied at a rate of 1 to 15 gallons per square yard to the entire surface treatment. The liquid for fog seal shall be a cationic mixing type emulsion diluted forty (40%) percent with water. Fog seal shall then be lightly sanded at a rate of plus or minus two (2) pounds per square yard by means of a mechanical spreader.

General Performance: Provide completed pavement which performs to the satisfaction of the engineer without bleeding, rutting, shoving, raveling, stripping, or showing other types of pavement distress or unsatisfactory performance.

Contractor's Quality Control Plan: Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the City with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:
- Source materials used on the project.
- Sampling and testing methods used to determine compliance with material specifications.
- Equipment to be used on the project.
- Calibration method used to determine compliance with this specification.
- Pavement cleaning and preparation procedure.
- Plan for protecting chip seal from damage by traffic.
- Procedure for monitoring initial acceptance requirements.
- An action plan demonstrating adjustment of the operation for adverse environmental conditions or out of specification materials or procedures.

Traffic Control: The Contractor shall furnish all necessary traffic control, barricades, signs, and flagmen, to ensure the safety of the travelling public and all working personnel. Traffic shall not travel on fresh mix until all placement operations are completed. The Contractor shall submit an M.O.T. plan indication all facets of traffic control for the project area. The M.O.T. plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. M.O.T. and associated devices shall be checked daily and periodically throughout the project for compliance. Where adjustments or corrections are needed, prompt revisions shall be made.

Notes:

Contractor shall use a string line or other approved method to insure straightness of all paving operations, any deficiencies must be removed by saw cutting the edge of pavement in a straight line; all longitudinal joints shall be at the center of the road. Difficulties and problems shall be reported to the Owner in a timely manner to avoid serious impacts to the project.

The Contractor shall construct a two (2) foot apron at all driveways.

Documentation: Complete a daily report that includes the following information:
- Job number
- Route/Street Name(s)
- Owner's On-Site Representative Name
- Date
- Air temperature—Min/Max (during application)
- Unit weight of emulsified asphalt (pounds per gallon)
- Beginning and ending application locations
- Length and width in feet
- Total area (square yards)
- Aggregate weight
- Gallons of emulsified asphalt
- Application rate (pounds/gallons per square yard)
- Contractor’s authorized signature
- QC aggregate properties (if required)
- Asphalt emulsified asphalt bill of lading(s)

**Method of Measurement:**

If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for Chip Seal, and not specifically listed in another item in the Bid Form, shall be included in this item. Should the contractor be directed to place Fog Seal as a secondary application to Chip Seal, it shall be measured separately as listed in the Technical Provision for Fog Seal.

**Basis of Payment:**

The quantities to be paid for under this Technical Provision shall be included in the Square Yards price for Chip Seal (Single application), Chip Seal (Double application) or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Chip Seal, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications, except that at the direction of the City, Fog Seal shall be applied and paid separately as listed in the Technical Provision for Fog Seal.

**TECHNICAL PROVISION TP-316a**

**Asphaltic Surface Treatment (Rejuvenating Scrub Seal)**

The work specified in this section consists of furnishing and applying a single or double application of bituminous surface treatment on a prepared sub-grade, road base or roadway, compacted to the lines, grades, and thickness established by the City and in substantial conformance with the limits established by the owner.

Description: Scrub Seal is a chip seal that utilizes an emulsion drag-broom, used to rehabilitate roads with extensive cracking without having to apply crack seal prior to chip sealing. This process utilizes a cationic polymer modified asphalt rejuvenating emulsion.

**Materials:**

**Liquid bituminous material for surface treatment:** For scrub seal applications, and the first lift of double applications, a liquid bituminous material conforming to the requirements in the scrub table shall be utilized. If project requirements dictate a second lift on top of the scrub seal application, CRS-2P conforming to the requirements of the CRS-2P table below shall be utilized. The contractor shall certify the liquid bituminous material meets the specification. Further, the emulsion supplier shall receive quarterly certificates of analysis from both the polymer and rejuvenating agent manufacturers. The COAs will be provided to the City upon request.
<table>
<thead>
<tr>
<th>Material Designation</th>
<th>CR-2R</th>
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<tbody>
<tr>
<td>Test on Emulsion:</td>
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<tr>
<td>Viscosity, Saybolt, 122.5°F (60°C), sfe</td>
<td>T59</td>
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<tr>
<td>Storage Stability Test, 24 h, %</td>
<td>T59</td>
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<tr>
<td>Sieve test, %</td>
<td>T59</td>
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<td>Demulsibility, %</td>
<td>T59</td>
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<tr>
<td>% residue by volume of emulsion</td>
<td>T59</td>
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<tr>
<td>% oil distillate by volume of emulsion</td>
<td>T69</td>
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<tr>
<td>Tests on Residue from Distillation:</td>
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<td>Penetration, 77°F, 100 g, 6-sec.</td>
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<tr>
<td>Elastic Recovery, %</td>
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<td>Distillate @ 50°F, 5 cm/min, cm</td>
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<td>Polymer Solids Content, %</td>
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<td>Solubility in Trichloroethylene</td>
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<tr>
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</tr>
<tr>
<td>Viscosity, Saybolt Fural, 77°F (25°C), SFS</td>
<td>T50</td>
</tr>
<tr>
<td>Storage Stability Test, 24 h, %</td>
<td>T50</td>
</tr>
<tr>
<td>Oil Distillate, %</td>
<td>T50</td>
</tr>
<tr>
<td>Sieve Test, %</td>
<td>T50</td>
</tr>
<tr>
<td>Residue by Distillation. @ 360°F, %</td>
<td>T50</td>
</tr>
<tr>
<td>Residue Properties from Distillation:</td>
<td>T50</td>
</tr>
<tr>
<td>Penetration, 40°C (39.2°F), 200 g, 60 sec</td>
<td>T49</td>
</tr>
<tr>
<td>Residue Properties from Low Temp Evaporation:</td>
<td>PP73-14, Procedure B</td>
</tr>
<tr>
<td>MSCR @ 65°C, Jw @ 3.2kPa</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Polymer Properties</th>
<th>ASTM D471-Mod.(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swelling in rejuvenating agent, % max weight increase: 48 hours</td>
<td>40%</td>
</tr>
<tr>
<td>Tensile Strength, PSI</td>
<td>ASTM D412A-Mod.(2)</td>
</tr>
<tr>
<td>Glass Transition Temperature (Tg) – Midpoint by DSC (°C)</td>
<td>800</td>
</tr>
<tr>
<td>Latex Density @ 23°C, (g/cm²)</td>
<td>ASTM D6937-Mod.(2)</td>
</tr>
<tr>
<td>Latex pH</td>
<td>ASTM E70-Mod.(2)</td>
</tr>
<tr>
<td>Rejuvenating Agent Properties</td>
<td></td>
</tr>
<tr>
<td>Flash Point, COC, ℉</td>
<td>T48</td>
</tr>
<tr>
<td>Viscosity, 140 ℉, CST</td>
<td>T201</td>
</tr>
<tr>
<td>Saturate, % by weight</td>
<td>ASTM D2007</td>
</tr>
<tr>
<td>Asphaltenes</td>
<td>ASTM D2007</td>
</tr>
<tr>
<td>Test on Residue from RTFO</td>
<td></td>
</tr>
<tr>
<td>Weight change, %w</td>
<td>ASTM D2872</td>
</tr>
<tr>
<td>Viscosity Ratio (RTFO/Orig.)</td>
<td>ASTM D2170</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Modifications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Exception to AASHTO T59: Bring the temperature on the lower thermometer slowly to 350°F plus or minus 10°F. Maintain this temperature for 20 minutes. Complete the total distillation in 60 plus or minus 5 minutes.</td>
</tr>
<tr>
<td>a. Using a syringe, place 0.8 gm of latex into an 18 mm diameter DSR mold.</td>
</tr>
<tr>
<td>b. Allow the sample to dry at ambient lab conditions (air conditioned) on the bench.</td>
</tr>
</tbody>
</table>
for 72 hours. Sample should be easily removable from the mold.

c. Take the "button" out of the mold and place the sample into a forced-air oven at 40°C (104°F) for 48 hours (on release paper);

   If at the end of the ambient dry, the sample sticks to the mold, place it into the oven and check it after 1-2 hours.

d. After 48 hours cool and weigh the sample to the nearest 0.0001 gram and record the weight.

e. Put ½ inch of Rejuvenating Agent into a 3 oz penetration tin.

f. Place the "button" on the Rejuvenating Agent, and add another ¼ inch of Rejuvenating Agent, so that the "button" is covered.

g. Put the cap on the penetration tin and place it into the 40°C oven for 48 hours.

h. Remove the "button" from the Rejuvenating Agent, let surface of the "button" to remove excess Rejuvenating Agent, cool the "button" to room temperature and weigh it.

i. Calculate weight gain of the "button"; express as %.

3. ASTM D412A Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension:

   Modifications

   a. To prepare the polymer film, dilute the waterborne polymer to 40% Total Solids Content and pour 57 g into a Teflon or silicone release mold of dimensions 7 ⅛ × 7 ⅛ X ⅛.

   b. Allow to dry at 23°C (73°F) and 50% RH (controlled conditions) for 7—10 days, total time, during which time the film should be flipped around once, preferably after 3 or 4 days. The film should be transparent in the end.

   c. To drive out any residual water, place the film in an oven at 50°C for 30 min. Dried film thickness should be 25 mil ± 5 mils. Discard films <20 mil.

   d. Cut out dumbbell-shaped test specimens of dimension 75 mm total length, 25 mm mid-section (L) and 4 mm width of mid-section.

   e. Grip in Instron machine with gap size 1 inch, use 8 inch/min cross-head speed.

4. ASTM D7426 Standard Test Method for Assignment of the DSC Procedure for Determining T_g of a Polymer or an Elastomeric Compound—Modifications

   a. Use between 3—30 mg dry polymer. Instrument used is TA Q2000 Differential Scanning Calorimeter (DSC). Heating rate is 20°C/min.


   a. Replace "Emulsified Asphalt" with "Latex" in text of test method. The testing temperature used should be 25 ± 3°C. The calculation in Section 7 should be as follows:

   i. Calculation:

   \[ D = \frac{(W_f - W_e)}{W_f} \times 0.1 \]

   \[ S.G. = D / 8.337 \]

   Where: \( W_f \) = Weight of filled cup (g) \( W_e \) = Weight of empty cup (g)
ASTM E70 Standard Test Method for pH of Aqueous Solutions with the Glass Electrode: Modifications

A pH meter with automatic temperature measurement should be used in the evaluation with a calomel cell assembly or combination electrode. Calibration should be made using the procedure with the pH meter, according to ASTM method, prior to testing the pH of the latex. In Section 9, the procedure for measuring pH of the latex should be as follows:

i. Place the electrode and probe into the dispersion that is to be measured and swirl the sample cup or beaker gently. (You may also use the probe in a stirring motion.)

ii. Wait for the reading to stabilize (usually less than a minute) and read/record this value. Note the temperature if not utilizing an ATC probe.

iii. Take the electrode and ATC probes from the sample and rinse thoroughly with de-ionized water. Pat dry and place back into appropriate solution recommended by electrode manufacturer for storage.

End of Test Modifications:

Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it meets the requirements of this specification. COA shall include, at a minimum, required emulsion properties and percentage of polymer solids in the emulsion.

Material Samples: The City will require the Contractor to sample and test each load of emulsion prior to delivery. The Contractor will also provide a sample of the emulsion on site, prior to commencing work. The City will require the Contractor to provide sample containers and a local Independent testing laboratory for the analyzing of emulsion. The Contractor will be responsible for the cost of the testing. The City reserves the right to test any shipment of emulsion that is believed to be substandard. All samples shall be shipped and stored in clean air tight sealed wide mouth jars or bottles made of plastic. If requested by the City, samples of rejuvenator and polymer shall also be provided in sample containers for testing by the City. Cost of polymer and rejuvenator testing shall be borne by the City. Where these tests identify material outside specification requirements, the City shall require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product shall remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the City. Further, the City may require the material placed containing the emulsified asphalt outside of specification requirements to be removed and replaced at the sole expense of the contractor or left in place at no pay.

Aggregates: Crushed granite conforming to FDOT specifications section 901, table 1 for #89, #78 or #7 gradation for coarse aggregates except as modified herein. The aggregate shall be washed granite obtained from a source approved by the City. Sampling and testing of aggregate shall be the responsibility of the contractor. Copies of test results from the aggregate supplier shall be furnished to the City prior to the start of the surface treatment.
<table>
<thead>
<tr>
<th>Test on Aggregate</th>
<th>AASHTO</th>
<th>ASTM</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat and Elongated Particles in Cover Coat Aggregate</td>
<td></td>
<td>D-4794</td>
<td>Ratio - 3:1 &lt;42%</td>
</tr>
<tr>
<td>Fractured Face</td>
<td>T-336</td>
<td>D-5821</td>
<td>100%</td>
</tr>
<tr>
<td>Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine</td>
<td>T-96</td>
<td>C-131</td>
<td>25%-Max</td>
</tr>
</tbody>
</table>

**Equipments**

**Distributor**: The liquid bituminous material shall be applied with a truck-mounted, pressure distributor that has been calibrated within the previous twelve (12) months, for transverse and longitudinal application. The distributor shall be equipped, maintained and operated so that the bituminous material can be applied at controlled temperatures and rates from 0.035 to 1.5 gallons per square yard. The distributor shall be capable of applying bituminous material of variable widths up to sixteen (16) feet. The distributor shall uniformly apply the bituminous material to the specified rate with a maximum allowed variation of 0.015 gallons per square yard. Distributor equipment shall include tachometer, accurate volume-measuring device, a calibrated tank and a thermometer for measuring the temperature of the tank’s contents. Distributors shall be equipped with a heating device, asphalt pump and full-circulating spray bars adjustable laterally and vertically. Distributors and transport trailers shall be equipped with a sampling valve. Distributor trucks shall be of the pressure type with insulated tanks. The use of gravity distributors will not be permitted. The valves shall be operated by levers so that one or all valves may be quickly opened or closed in one operation. The valves which control the flow from nozzles shall act positively to provide a uniform unbroken spread of bituminous material on the surface. The distributor shall be equipped with devices and charts to provide for accurate and rapid determination and control of the amount of bituminous material being applied and with a bitometer of the auxiliary-wheel type registering speed in feet per minute, and trip and total distance in feet.

**Aggregate Spreader**: The aggregate spreader shall be a self-propelled unit capable of uniformly spreading the aggregate at the required rate on a minimum width of six (6") inches wider than the width of the lane to be treated. The spreader shall be calibrated within the previous twelve (12) months for transverse and longitudinal application. The spreader shall be equipped with a computer-controlled aggregate/chip spreader in order to ensure the appropriate aggregate coverage at varying speeds, unless approved otherwise by Engineer.

**Scrub Broom**: A scrub broom as described herein and depicted in the attached diagram shall be used to scrub the emulsion after application. The scrub broom frame shall be constructed of metal. The scrub broom shall be attached to and pulled by the distributor truck. The scrub broom must be equipped with a means of raising and lowering the scrub broom at desired points. It shall be towable in the elevated position to the next area of construction. The weight of the broom assembly shall be such that it does not squeegee the emulsion off the roadway surface.

The main body of the scrub broom shall have a frame size as shown in the diagram at the end of this technical provision. The nearest and furthest members, paralleling the back of the distributor truck, and diagonal members shall be equipped with street brooms. The leading member and the trailing member shall have broom heads angled at 10 to 15 degrees off the centerline of the supporting member as shown in the scrub broom schematic at the end of this technical provision. The diagonal members shall have broom heads attached in line with the centerline of the supporting member. Each individual street...
broom attached to the scrub-broom assembly shall be 3.5 inches wide x 6.5 inches high x 16 inches long and have stiff nylon bristles. Bristle height is to be maintained at a minimum of five inches (5""). The scrub broom shall be equipped with hinged wing assemblies attached to the main body not to exceed 4.5 feet per side, with diagonals and equipped with street brooms and shall maintain the scrubbing process evenly as contours and cross-sections change across the existing road surface.

Pneumatic Tire Rollers: The contractor shall use eight (8) to twelve (12) ton self-propelled pneumatic tire rollers with oscillating wheels and low pressure, smooth tires. Maintain the inflation of the tires such that in no two tires the air pressure varies more than 5 psi. The rollers will be equipped with an operating water system and scrubbing pads. A sufficient number of rollers and a sufficient number of passes shall be used to ensure cover aggregate is properly rolled.

Self-Propelled Rotary Power Broom: The self-propelled rotary broom shall be designed, equipped, maintained, and operated so the pavement surface can be swept clean. The broom shall have an adjustment to control the downward pressure.

Additional Equipment: Additional equipment will be needed to complete the operations required by this technical provision. All equipment necessary for the successful completion of projects governed by this technical provision shall be included in the unit costs associated herein. Availability of quality assurance devices (such as a 15'-straight edge) shall be the responsibility of the Contractor.

Construction:

Layout: The Contractor will be responsible for the string lining and lay out of the roadway prior to paving.

Weather and Seasonal Limitations: The surface treatment shall not be applied to a wet surface or when rain is occurring, or the threat of rain is present immediately before placement. The surface treatment shall not be applied when the ambient temperature or pavement temperature is less than 60°F.

Preparation of Surface: The chip seal material shall be placed on a firm unyielding prepared roadway. The Contractor shall be responsible for clipping back shoulders and removing overburden or any other vegetation or debris to ensure that the road is free of organic and deleterious material. Cracks in the existing roadway shall be cleaned and blown free of loose or deleterious materials prior to paving. The contractor shall be responsible for removal of all thermoplastic striping or signage on the surface of the roadway, and all Reflective Pavement Markers prior to beginning operation. Prior to the scrub seal operation, all drain inlet covers, monument covers, and all other utility covers shall be protected from the Contractor's scrub seal operations by applying a sheet of plastic over the exposed facilities, or other methods approved by the Engineer. All traces of plastic, residual emulsion, and aggregate shall be removed from covered objects after the application of the scrub seal and/or prior to final inspection of the project. The contractor will be responsible for blowing or sweeping the road immediately ahead of the chip seal operation to make sure the road is free of loose aggregate and other debris.

Application of bituminous material: Liquid bituminous material shall be applied at a rate as directed by the city by means of a pressure-type distributor in a uniform, continuous spread over the section to be treated. The distributor shall be moving forward at the proper speed when the liquid is discharged onto the pavement to provide an even and consistent application at the rate prescribed. If any areas are deficient the operation shall be stopped and corrected immediately. The liquid shall not be applied more than one hundred (100') feet in advance of the aggregate.

- Single Chip Seal: Application of the liquid bituminous material shall be applied at a rate of .20 - .50 gallons per square yard depending on the composition of the existing road bed, surface texture and the size of the aggregate in use.
--- Double Chip Seal: Application of the liquid bituminous material shall be applied at a rate of .50-.95 gallons per square yard depending on the composition of the existing road bed, surface texture and the size of the aggregate in use. The first application of a double chip shall contain 40% of the emulsion of the total seal, while the second application contains 60% of the emulsion.

The temperature of the asphalt emulsion when applied shall be between 140°F and 180°F. For smaller areas, the emulsion may be applied with a wand. On Single Chip Seals, and the first lift of Double Chip Seals, the emulsion shall be immediately broomed to fill cracks and voids. The emulsion scrub-broom shall be as described herein.

On Single Chip Seals, and the first lift of Double Chip Seals, the application of the asphalt emulsion for scrub-seal and scrub-broom operation shall cease an appropriate distance from the end of the application as determined by the contractor. The remaining asphalt emulsion for scrub-seal shall be dragged out by the scrub-broom, and the remaining emulsified material required to complete the pass shall be applied only by the distributor truck, at the specified rate.

Application of cover aggregate: Immediately following the spray application of the liquid-bibuminous material, cover aggregate shall be spread over the liquid material at a rate of 16-30 lbs. per square yard as directed by the city depending upon the type of road base and/or the size of the existing aggregate that is being resurfaced.

During the first day of production and at least once a week thereafter, the application rate of the aggregate shall be verified by the contractor and witnessed by the city to assure that the appropriate application rate of the aggregate is applied. The rate can be verified by placing a tarp of at least 1.0-yd² area on the roadway surface. After allowing the aggregate spreader to pass over the tarp, the aggregate on the tarp should be collected and weighed to determine the weight of aggregate. The measured weight should then be compared to the target weight.

If the difference in the target weight and the actual measured weight is over 1.5 pounds, the aggregate distributor should be adjusted such that the spread rate is within the above tolerance. The above procedure shall be repeated until the spread rate is within the allowable tolerance.

If at any point during production, excessive aggregate is noted, the aggregate application rate should be verified, and the spread rate adjusted. The intent is to minimize the amount of excess aggregate. Excess aggregate removed from the roadway surface after brooming shall be removed from the jobsite and should not be reused in the aggregate operation.

Rolling: Immediately following the first application of the cover material, roll the entire surface with a pneumatic roller followed immediately with the steel drum roller. Cover the entire surface one time with the steel drum roller. Then, roll the cover material again with the pneumatic roller. Continue rolling as long as necessary to ensure thorough keying of the cover aggregate into the liquid bituminous material. Eliminate the steel drum when rolling the second application of cover aggregate. Apply the second application of liquid and cover material the same day as the first application, as far as it is practicable and consistent with the setting of the liquid bituminous material. The City may waive the requirement for a steel drum roller given proper seating of aggregate with the pneumatic roller.

Sweeping: After rolling of the first application of cover aggregate, lightly broom the loose aggregate in a manner not to dislodge the aggregate embedded in the liquid. Sweep loose material from road bed. Following second application again broom loose aggregate from the road bed prior to the application of the fog seal. If temperatures exceed 85 degrees, it may be necessary to wait 24 hours before sweeping the first application of chip seal.
Fog Seal: Upon direction from the engineer, fog seal is to be applied as a separate pay-item. When surface treatment has set, a fog seal is to be applied at a rate of 1 to 1.5 gallons per square yard to the entire surface treatment. The liquid for fog seal shall be a cationic type emulsion diluted forty (40%) percent with water. Fog seal shall then be lightly sanded at a rate of plus or minus two (2) pounds per square yard by means of a mechanical spreader.

General Performance: Provide completed pavement which performs to the satisfaction of the engineer without bleeding, rutting, shoving, raveling, stripping, or showing other types of pavement distress or unsatisfactory performance.

Contractor's Quality Control Plan: Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the City with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:

- Source materials used on the project.
- Sampling and testing methods used to determine compliance with material specifications.
- Equipment to be used on the project.
- Calibration method used to determine compliance with this specification.
- Pavement cleaning and preparation procedure.
- Plan for protecting chip seal from damage by traffic.
- Procedure for monitoring initial acceptance requirements.
- An action plan demonstrating adjustment of the operation for adverse environmental conditions or out-of-specification materials or procedures.

Traffic Control: The Contractor shall furnish all necessary traffic control, barricades, signs, and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh mix until all placement operations are completed. The Contractor shall submit a MOT plan indication all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with TP-102. MOT and associated devices shall be checked daily end periodically throughout the project for compliance. Where adjustments or corrections are needed, prompt revisions shall be made.

Notes:

Contractor shall use a string line or other approved method to insure straightness of all paving operations. Any deficiencies must be removed by saw-cutting the edge of pavement in a straight line; all longitudinal joints shall be in the center of the road. Difficulties and problems shall be reported to the owner in a timely manner so as to avoid serious impacts to the project.

The Contractor shall construct a two (2) foot apron at all driveways.

Documentation: Complete a daily report that includes the following information:

- Job number
- Route/Street-Name(s)
- Owner's On-Site Representative Name
- Date
- Air temperature—Min/Max (during application)
- Unit weight of emulsified asphalt (pounds per gallon)
- Beginning and ending application locations
- Length and width in feet
- Total area (square yards)
Method of Measurement:

If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for Rejuvenating Scrub Seal, and not specifically listed in another item in the Bid Form, shall be included in this item. Should the contractor be directed to place Fog Seal as a secondary application to Chip Seal, it shall be measured separately as listed in the Technical Provision for Fog Seal.

Basis of Payment:

The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for Rejuvenating Scrub Seal (Single application), Rejuvenating Scrub Seal (Double application) or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Rejuvenating Scrub Seal, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications, except that at the direction of the City, Fog Seal shall be applied and paid separately as listed in the Technical Provision for Fog Seal.
TECHNICAL PROVISION

TP-317

Micro Surfacing

The work specified in this section consists of placement of a polymer-modified Micro Surfacing on a prepared existing paved road, placed within the lines, grades, and thickness established by the City.

Description: Micro Surfacing is a polymer-modified cold-mix paving system consisting of a mixture of dense-graded aggregate, polymer-modified asphalt emulsion, water, additives and mineral fillers placed in a slurry state to extend the service life of both urban and rural roads within the City.

Materials:

Emulsified Asphalt: Quick-set cationic type CSS or CQS emulsion with natural or synthetic polymer-modifiers conforming to the requirements specified in AASHTO M208 or ASTM D2397 for CQS-Ih or CQS-Ih.

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity, Saybolt Furol @ 25°C, Sec.</td>
<td>AASHTO T69</td>
<td>20.0</td>
<td>400.0</td>
</tr>
<tr>
<td>Particle Charge</td>
<td></td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Sieve Test</td>
<td>AASHTO T69</td>
<td></td>
<td>0.1</td>
</tr>
<tr>
<td>Softening Point</td>
<td>AASHTO T63</td>
<td>135°F (57°C)</td>
<td>95°C</td>
</tr>
<tr>
<td>Kinematic Viscosity @ 276°F (136°C)</td>
<td>AASHTO T204</td>
<td>500 cSt/sec</td>
<td></td>
</tr>
<tr>
<td>Distillation;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil distillate, by volume, %</td>
<td>AASHTO T50</td>
<td></td>
<td>0.5</td>
</tr>
<tr>
<td>Residue from Distillation, %</td>
<td>AASHTO T59</td>
<td>62.0</td>
<td></td>
</tr>
<tr>
<td>Penetration, 25°C, 100g, 5 sec.</td>
<td>AASHTO T149</td>
<td>40.0</td>
<td>60.0</td>
</tr>
<tr>
<td>Ductility, 77°F, 50 mm/sec.</td>
<td>AASHTO T64</td>
<td>70.0</td>
<td></td>
</tr>
</tbody>
</table>

It shall pass all applicable storage and settlement tests. The cement mixing test shall be waived for this emulsion. The polymer material shall be milled or blended into the asphalt or emulsifier solution prior to the emulsification process.

The five-day (5) settlement test may be waived, provided job-stored emulsion is used within thirty-six (36) hours from the time of the shipment, or the stored material has had additional emulsion blended into it prior to use.

Three percent (3%) polymer solids, based on asphalt weight, pre-blended prior to emulsification is considered minimum.

Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it is the same as that used in the mix design. COA shall include, at a minimum, required emulsion properties and percentage of polymer solids in the emulsion.

For the first load of emulsified asphalt produced for the project, the supplier shall submit a sample to the City for testing before use. At any time during application, the City may sample and test all subsequent loads of emulsified asphalt delivered to the project to verify and determine compliance with
specification requirements. Where these tests identify material outside specification requirements, the City shall require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the City. Further, the City may require the material placed containing the emulsified asphalt outside of specification requirements to be removed and replaced at the sole expense of the contractor or left in place at no pay.

Aggregator: Use an aggregate consisting of 100% crushed granite. To assure the material is totally crushed, one-hundred percent (100%) of the parent aggregate will be larger than the largest stone in the gradation to be used.

In addition to the requirements of FDOT Standard Specification Sections 901 and 902, when aggregate is tested according to the following test, it should meet these minimum requirements:

<table>
<thead>
<tr>
<th>AASHTO Test No.</th>
<th>ASTM Test No.</th>
<th>Quality</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASHTO-T176</td>
<td>ASTM-D2419</td>
<td>Sand Equivalent</td>
<td>65 Min</td>
</tr>
<tr>
<td>AASHTO-T104</td>
<td>ASTM-C88</td>
<td>Soundness</td>
<td>15% Max w/Na&lt;sub&gt;2&lt;/sub&gt;SO&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25% Max w/MgSO&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
<tr>
<td>AASHTO-T86</td>
<td>ASTM-C131</td>
<td>Abrasion-Resistance</td>
<td>30% Max</td>
</tr>
</tbody>
</table>

The abrasion test is to be run on the parent aggregate. The aggregate should meet state-approved polishing values. Proven performance may justify the use of aggregates that may not pass all of the above tests, subject to approval by the City.

When tested in accordance with AASHTO T27 (ASTM C136) and AASHTO T11 (ASTM C117), the target (mix-design) aggregate gradation (including the mineral filler) shall be within one of the following bands:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Type II Percent Passing</th>
<th>Type III Percent Passing</th>
<th>Stockpile Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4 (9.5-mm)</td>
<td>400</td>
<td>400</td>
<td>±5%</td>
</tr>
<tr>
<td>#4 (4.75-mm)</td>
<td>90—100</td>
<td>70—90</td>
<td>±5%</td>
</tr>
<tr>
<td>#8 (2.36-mm)</td>
<td>65—90</td>
<td>45—70</td>
<td>±5%</td>
</tr>
<tr>
<td>#16 (1.18-mm)</td>
<td>46—70</td>
<td>28—50</td>
<td>±5%</td>
</tr>
<tr>
<td>#30 (600-um)</td>
<td>30—50</td>
<td>10—34</td>
<td>±5%</td>
</tr>
<tr>
<td>#60 (300-um)</td>
<td>18—30</td>
<td>12—25</td>
<td>±4%</td>
</tr>
<tr>
<td>#100 (150-um)</td>
<td>10—24</td>
<td>7—18</td>
<td>±3%</td>
</tr>
<tr>
<td>#200 (75-um)</td>
<td>5—15</td>
<td>5—15</td>
<td>±2%</td>
</tr>
</tbody>
</table>

The job mix (target) gradation shall be within the gradation band for the desired type. After the target gradation has been submitted (this should be the gradation that the mix-design is based on), then the percent passing each sieve shall not vary by more than the stockpile tolerance shown in the above table for each individual sieve, and still remain within the gradation band. It is recommended that the percent passing shall not go from the high end to the low end of the range for any two consecutive screens.

The aggregate will be accepted at the job location stockpile or when loading into the support units for delivery to the lay-down machine. The stockpile shall be accepted based on five gradation tests according to AASHTO T2 (ASTM D75). If the average of the five tests is within the gradation

ITB 19-35 CITYWIDE PAVING PROGRAM  Page 55 of 140
tolerances; then the materials will be accepted. If the tests show the material to be out, the contractor will be given the choice to either remove the material or blend other aggregate with the stockpiled material to bring it into specification. Materials used in blending must meet the quality tests before blending and must be blended in a manner to produce a consistent gradation. If blending is used, it will require that a new mix-design be performed. The contractor shall supply copies of the aggregate tickets to the customer within 24 hours of delivery to the job site.

Screening shall be required at the stockpile prior to delivery to the paving machine if there are any problems created by having oversize material in the mix.

MineralFiller: (if required) shall be any recognized brand of non-air entrained Portland cement or hydrated lime that is free from lumps. It may be accepted upon visual inspection. The type and amount of mineral filler needed shall be determined by a laboratory mix-design and will be considered as part of the aggregate gradation. An increase or decrease may be permitted when the Micro Surfacing is being placed if it is found to be necessary for better consistency or set times, upon approval by the City and the original mix-design engineer.

Water: Potable and free of harmful or deleterious materials.

Additives: Additives may be added to the emulsion mix or any of the component materials to provide the control of the quick-traffic properties. They must be included as part of the mix-design and be compatible with the other components of the mix.

Mix Design: The Contractor shall submit to the City for approval a complete mix-design prepared and certified by a laboratory which has experience in designing Micro Surfacing and signed and sealed by a professional engineer. After the mix-design has been approved, no substitution will be permitted unless approved by the City. Compatibility of the aggregate, polymer modified emulsion, mineral filler, and other additives shall be verified by the mix-design. The mix-design shall be made with the same aggregate gradation that the contractor will provide on the project. Required tests and values are as follows:

<table>
<thead>
<tr>
<th>ISSA-Test No.</th>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISSA-TB-113</td>
<td>Mix-Time @ 77°F (25°C)</td>
<td>Controllable to 120-Seconds Min</td>
</tr>
<tr>
<td>ISSA-TB-199</td>
<td>Wet-Cohesion @ 30-Minutes Minimum (Set)</td>
<td>12 Kg-cm-Min</td>
</tr>
<tr>
<td></td>
<td>@ 60 Minutes Minimum (Traffic)</td>
<td>20 Kg-cm-Min or Near-Spin</td>
</tr>
<tr>
<td>ISSA-TB-100</td>
<td>Exceed Asphalt by LWT Sand Adhesion</td>
<td>50 g/ft² Max (538 g/m² Max)</td>
</tr>
<tr>
<td>ISSA-TB-114</td>
<td>Wet-Stripping</td>
<td>Pass (90% Min)</td>
</tr>
<tr>
<td>ISSA-TB-147</td>
<td>Lateral-Displacement Specific Gravity-1000 Cycles of 125-lbs. (56.7 Kg)</td>
<td>5% Max</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2-10% Max</td>
</tr>
<tr>
<td>ISSA-TB-100</td>
<td>Wet-Track Abrasion Loss-One-hour Soak</td>
<td>50 g/ft² (538 g/m²) Max</td>
</tr>
<tr>
<td></td>
<td>Six-day Soak</td>
<td>75 g/ft² (807 g/m²) Max</td>
</tr>
</tbody>
</table>

The Wet Track Abrasion test is performed under laboratory conditions as a component of the mix design process. The purpose of this test is to determine the minimum asphalt content of a micro surface system. The Wet Track Abrasion Test is not recommended as a field quality control or acceptance test.
The mixing test is used to predict how long the material can be mixed in the machines before it begins to break. It is more for information to be used by the contractor than for quality of the end product.

The mixing test and set-time test should be checked at the highest temperatures expected during construction.

The mix design should report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effect). The report must clearly show the proportions of aggregate, mineral filler (minimum and maximum), water (minimum and maximum), additive usage, and polymer-modified asphalt emulsion based on the dry weight of the aggregate.

All the component materials used in the mix design shall be representative of the materials proposed by the contractor to be used on the project. The percentages of each individual material required and allowable tolerance for each shall be shown in the laboratory report.

<table>
<thead>
<tr>
<th>Component Materials</th>
<th>Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual Asphalt</td>
<td>7% to 10.5% by dry weight of aggregate</td>
</tr>
<tr>
<td>Mineral Filler</td>
<td>0.5 to 3% by dry weight of aggregate</td>
</tr>
<tr>
<td>Polymer-Based Modifier</td>
<td>Min 3% solids-based on bitumen weight content</td>
</tr>
<tr>
<td>Additives</td>
<td>As needed</td>
</tr>
<tr>
<td>Water</td>
<td>As required to produce proper mix consistency</td>
</tr>
</tbody>
</table>

After the mix design has been approved, no substitutions to the mix design will be permitted, unless approved by the City. The City will consider inadequate field performance of a mix as sufficient evidence that the properties of the mix related to the mix design have changed. The project will be stopped until it is demonstrated that those properties, or issues, have been sufficiently addressed. The City may require the material represented by the inadequate field performance to be removed and replaced at the sole expense of the contractor or left in place at no pay.

The materials (aggregates, emulsion, mineral filler, and additives) must be from the same source, grade, and type used to develop the approved mix design. Any substitutions or alternate supplies must be preapproved by the City. Changes in the aggregate source or emulsion supplier requires a new mix design. Blending, co-mingling and otherwise combining materials from two or more sources, grades, or types not noted in the approved mix design is strictly prohibited. Aggregate stockpiles and emulsion material should be located at or near the job site in sufficient quantity for the job or designated parts of the job.

**Equipment**

**Mixing Equipment:** The machine shall be specifically designed and manufactured to lay Micro Surfacing. The material shall be mixed by an automatic-sequenced, self-propelled Micro Surfacing mixing machine, which shall be able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral filler, control setting additive, and water to a revolving multi-blade, double-shafted mixer and to discharge the mixed product on a continuous flow basis.

The machine shall have sufficient storage capacity for aggregate, emulsified asphalt, mineral filler, control additive and water to maintain an adequate supply to the proportioning controls.

If continuous mix paving machines are required for the project, the machine shall be equipped to allow the operator to have full control from the rear of the machine, of the forward and reverse speeds during
applications of the Micro Surfacing material and be equipped with opposite side driver stations to assist
in alignment. The self-loading device, opposite side driver stations, and forward and reverse speed
controls shall be original equipment manufacturer design.

Proportioning Devices: Individual volume or weight controls for proportioning each material to be
added to the mix (i.e. aggregate, mineral filler, emulsified asphalt, additive, and water) shall be provided
and properly marked. These proportioning devices are used in material calibration and determining the
material output at any time.

Spreading Device: The mixture shall be agitated and spread uniformly in the surfacing box by means
of twin-shafted paddles or spiral augers fixed in the spreader box. A front seal shall be provided to insure
no loss of the mixture at the road contact point. The rear seal shall act as a final strike-off and shall be
adjustable. The spreader box and rear strike-off shall be so designed and operated that a uniform
consistency is achieved to produce a free-flow of material to the rear strike-off. The spreader box shall
have suitable means provided to side shift the box to compensate for variations in the pavement
geometry.

Secondary Strike-off: A secondary strike-off shall be provided to improve surface texture. The
secondary strike-off shall have the same adjustments as the spreader box. No burlap drags will be
permitted on the final applications.

Rut-Filling Box: When required, before the final surface course is placed, preliminary Micro Surfacing
material may be required to fill ruts, utility cuts, depressions in the existing surface, etc. Ruts of one-
half (1/2) inch or greater in depth shall be filled independently with a rut-filling spreader box, either five-
foot (5) or six foot (6) width. For irregular or shallow rutting of less than one-half (1/2) inch depth, a full-
width scratch coat pass may be used as directed by the City. Ruts that are in excess of one and one-half
(1 1/2) inches in depth may require multiple placements with the rut-filling spreader box to restore the
cross-section. All rut-filling level-up material should cure under traffic for at least a twenty-four (24)
hour period before additional material is placed on top of the level-up.

Auxiliary Equipment: Suitable surface preparation equipment, traffic control equipment, handtools,
and any other support and safety equipment shall be provided by the contractor as necessary, or as the
City requires, to perform the work.

General: Each mixing unit to be used in the performance of the work shall be calibrated in the presence
of the City prior to construction. Previous calibration documentation covering the exact materials to be
used may be acceptable, provided that no more than sixty (60) days have lapsed. The documentation
shall include an individual calibration of each material at various settings, which can be related to the
machine metering devices. No machine will be allowed to work on the project until the calibration has
been completed and/or accepted.

All equipment, tools, and machines used in the performance of this work shall be maintained in
satisfactory working condition at all times to ensure a high-quality product. Availability of quality
assurance devices (such as a 15' straight edge) shall be the responsibility of the Contractor.

Construction:

Weather Limitations: Micro Surfacing shall not be applied if either the pavement or air temperature is
below 50°F and falling but may be applied when both pavement and air temperatures are above 45°F
and rising. No Micro Surfacing shall be applied when there is the possibility that the finished product
will freeze within 24 hours. The mixture shall not be applied when weather conditions prolong opening
to traffic beyond a reasonable time or as directed by the City.
Surface Preparation: Immediately prior to applying the Micro Surfacing, the surface shall be cleared of all loose material, silt spots, vegetation, and other objectionable material. Any standard cleaning method will be acceptable. If water is used, cracks shall be allowed to dry thoroughly before applying Micro Surfacing. Manholes, valve boxes, drop inlets and other service entrances shall be protected from the Micro Surfacing by a suitable method. The City shall approve the surface preparation prior to surfacing. No dry aggregate shall be spilled from the lay-down machine or existing on the road, will be permitted. Remove any thermoplastic traffic striping or reflective pavement markers in the areas to be Micro Surfaced.

Task Coat: The City may require placement of a task coat prior to paving. If required, the task coat shall consist of one part emulsified asphalt to three parts water and shall be applied with a standard distributor. The emulsified asphalt should be CQS or CSS grade, or the slurry seal emulsion. The distributor shall be capable of applying the dilution evenly at a rate of 0.05 to 0.15 gal/yd². The task coat shall be allowed to cure sufficiently before the application of Micro Surfacing. If a task coat is required, it shall be billed as a separate pay item.

Cracks: Unless otherwise instructed by the City, treat cracks wider than 0.25” in the pavement surface with an approved crack sealer prior to application of the Micro Surfacing.

Application: A 500-ft minimum test strip shall be placed in conditions similar to those expected to be encountered during the project unless specifically waived by the City. The test strip shall demonstrate that the equipment used, crew selected and materials to be incorporated into the product are performing as required to meet specifications.

The surface shall be pre-wetted ahead of the spreader box. The rate of application of the spray shall be adjusted during the day to suit temperatures, surface texture, humidity, and dryness of the pavement.

The Micro Surfacing shall be of the desired consistency upon leaving the mixer. A sufficient amount of material shall be carried in all parts of the spreader at all times so that a complete coverage is obtained. Overloading of the spreader shall be avoided. No lumping, balling, or unmixed aggregate shall be permitted.

No streaks, such as those caused by oversized aggregate, shall be left in the finished surface. If excess streaking develops, the job will be stopped until the contractor proves to the Project Manager or his/her designee that the situation has been corrected. Excessive streaking is defined as more than four drag marks greater than one-half (1/2) inch wide and four inches (4) long, or one inch (1) wide and three (3) inches long, in any 30 yd² area. No transverse ripples or longitudinal streaks of one-fourth (1/4) inch in depth will be permitted, when measured by placing a ten (10) foot straight edge over the surface.

The Micro Surfacing mixture shall be of the proper consistency at all times, so as to provide the application rate required by the surface condition. The average application rate, as measured by the Project Manager, shall be in accordance with the following table:

<table>
<thead>
<tr>
<th>Aggregate Type</th>
<th>Location</th>
<th>Suggested Application Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single application</td>
<td>Urban and Residential Streets</td>
<td>Type II 18-22 lb/ya², Type III 22-28 lb/ya²</td>
</tr>
<tr>
<td>Double application</td>
<td>Urban, Residential, and Primary Routes</td>
<td>Type II 32-40 lb/ya², Type III 42-50 lb/ya²</td>
</tr>
<tr>
<td>Rut-Fill</td>
<td>Wheel Ruts</td>
<td>Tonnage As Required and Approved by City</td>
</tr>
</tbody>
</table>
Application rates are based upon the weight of dry aggregate in the mixture. Application rates are affected by the unit weight of the aggregate. The contractor shall calculate the yield of the course placed at least three times per day. The City shall randomly determine the timing for the readings used to calculate application rate.

Single applications shall be applied in single passes, and double applications in two, full width passes. When two passes are used, the first pass (scratch course) is made using a metal or stiff rubber strike-off and applying only what the surface demands for leveling. The second course is applied at 15–30 lb/yd².

Opening to Traffic: Micro-Surfacing shall be capable of producing an emulsified asphalt pavement mixture that will cure at a rate which will permit straight rolling traffic on the pavement within one hour after application without damaging the pavement surface. Any damage done by traffic to the Micro-Surfacing shall be repaired by the contractor at his expense.

Joints: No excess buildup, uncovered areas, or unsightly appearance shall be permitted on longitudinal or transverse joints. The contractor shall provide suitable width spreading equipment to produce a minimum number of longitudinal joints throughout the project. When possible, longitudinal joints shall be placed on lane lines. Half passes and odd width passes will be used only in minimum amounts. If half passes are used, they shall not be the last pass of any paved area. A maximum of three (3) inches shall be allowed for overlap of longitudinal lane line joints. Also, the joint shall have no more than a one-fourth (¼) inch difference in elevation when measured by placing a ten (10) foot straight edge over the joint and measuring the elevation drop-off.

Mix Stability: The Micro-Surfacing shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and spreading. It shall be free of excess water or emulsion and free of segregation of the emulsion and aggregate fines from the coarser aggregate. Under no circumstances shall water be sprayed directly into the lay-down box while laying Micro-Surfacing material.

Handwork: Areas which cannot be reached with the machine shall be surfaced using hand squeegees to provide uniform coverage. If necessary, the area to be hand-worked shall be lightly dampened prior to mix placement. Care shall be exercised to leave no unsightly appearance from hand work. The same type of finish as applied by the spreader box shall be required.

Edge Lines: Care shall be taken to ensure straight lines along curbs and shoulders. No runoff on these areas will be permitted. Lines at intersections will be kept straight to provide a good appearance. If necessary, a suitable material will be used to mask off the end of streets to provide straight lines. Edge lines shall not vary by more than ± 2 inches horizontal variance in any 96 feet of length.

Clean-up: All areas, such as man-ways, gutters, and intersections, shall have the Micro-Surfacing mix removed as specified by the City. The contractor shall, on a daily basis, remove any debris associated with the performance of the work, completely and thoroughly to the satisfaction of the City. In addition, the contractor shall, at the request of the City, pressure wash any area such as, curb and gutter, private driveways, etc., removing any and all stains associated with the placement of the Micro-Surfacing.

General Performance:
Provide completed pavement which performs to the satisfaction of the City without bleeding, rutting, sheving, raveling, stripping, or showing other types of pavement distress or unsatisfactory performance.
Contractor's Quality Control Plan: Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the City with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:

- Source materials used on the project;
- Sampling and testing methods used to determine compliance with material specifications;
- Equipment to be used on the project;
- Calibration method used to determine compliance with the mix design;
- Pavement cleanup and preparation procedure;
- Plan for protecting slurry seal mixture from damage by traffic;
- Procedure for monitoring initial acceptance requirements;
- An action plan demonstrating adjustment of the slurry seal operation for adverse environmental conditions.

Testing: The City may obtain one or more samples of Micro-Surfacing mixture for each day of production. Tests samples shall be collected and performed in accordance with AASHTO T308 and AASHTO T30 to determine the residual asphalt content and the gradation of the sample. Evaporate all water from the sample prior to testing. Determine the deviation of the test results for each sample from the mix design target values. Compare the deviation from the mix design to the mixture control tolerances shown here:

<table>
<thead>
<tr>
<th>Aggregate and Emulsified Asphalt - Acceptance Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate</td>
</tr>
<tr>
<td>Percent Passing No. 4 Sieve</td>
</tr>
<tr>
<td>Percent Passing No. 8 Sieve</td>
</tr>
<tr>
<td>Percent Passing No. 50 Sieve</td>
</tr>
<tr>
<td>Percent Passing No. 200 Sieve</td>
</tr>
<tr>
<td>Emulsified Asphalt</td>
</tr>
<tr>
<td>Residual Asphalt Content of Mixture</td>
</tr>
<tr>
<td>Residual Asphalt Content of (daily-average)</td>
</tr>
<tr>
<td>Application Rate (1,000 ft yield shocks)</td>
</tr>
<tr>
<td>Sand Equivalent Test (ASTM D2419)</td>
</tr>
</tbody>
</table>

Documentation: Complete a daily report that includes the following information:

- Job number
- Route/Street Name(s)
- Owner's On-Site Representative Name
- Date
- Air temperature Min/Max (during application)
- Unit weight of emulsified asphalt (pounds per gallon)
- Beginning and ending application locations
- Counter readings (beginning, ending, and total difference)
- Total area (square yards)
- Aggregate weight
- Gallons of emulsified asphalt
- Application rate (pounds per square yard)
- Contractor's authorized signature
- QC aggregate properties (if required)
- Asphalt emulsified asphalt bill of lading(s)
Traffic Control:

The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh mix until all operations have been completed and the micro surfacing is sufficiently dry to keep vehicular traffic from marking the mat. The Contractor shall submit an MOT plan indicating all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. MOT and associated devices shall be checked daily and periodically throughout the project for compliance, and where adjustments or corrections are needed, prompt revisions shall be made. The Contractor shall construct a two (2)-foot apron at all driveways.

Method of Measurements:

If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for Micro Surfacing, and not specifically listed in another item in the Bid Form, shall be included in this item.

Basis of Payment:

The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for Micro Surfacing (Single application), Micro Surfacing (Double application), the per Ton price for Micro Surfacing (Rut filling) and the Square Yard price for Task Coat or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions, and Technical Specifications pertaining to Micro Surfacing, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.

TECHNICAL PROVISION
TP-317a
High Polymer Micro Surfacing

The work specified in this section consists of placement of a highly polymer modified Micro Surfacing on a prepared existing paved road, placed within the lines, grades, and thickness established by the City.

Description: High Polymer Micro Surfacing is a polymer modified cold mix paving system that begins as a mixture of dense graded aggregate, polymer modified asphalt emulsion, water, and mineral fillers placed in a slurry state at ambient air temperature to extend the service life of both urban and rural roads within the City. Standard Micro Surfacing contains modified asphalt emulsion at a rate of 3% solids while highly modified systems contain a minimum of 6%.

Materials:

Emulsified Asphalt: Quick set cationic type CSS or CQS emulsion with natural or synthetic polymer modifiers conforming to the requirements specified below.
<table>
<thead>
<tr>
<th>Property</th>
<th>AASHTO-Test Method</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>asphalt base properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>original DSR, kPa (G/str 5.1C rad/see) @ 76°C</td>
<td>T135</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Emulsion Properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>viscosity, Saybolt Furol @ 122°F, SFS</td>
<td>T99</td>
<td>45.0</td>
<td>480.0</td>
</tr>
<tr>
<td>particle charge</td>
<td></td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>sieve test</td>
<td>T99</td>
<td>—</td>
<td>0.1</td>
</tr>
<tr>
<td>residue by evaporation</td>
<td>T99</td>
<td>62.0</td>
<td>—</td>
</tr>
<tr>
<td>residue properties from low-temperature evaporation</td>
<td>PP72-11, Procedure B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSCR @ 64°C, Recovery @ 3.2 kPa, %</td>
<td>M332</td>
<td>80.0</td>
<td>—</td>
</tr>
<tr>
<td>Jw @ 3.2 kPa</td>
<td>M332</td>
<td>—</td>
<td>0.5</td>
</tr>
</tbody>
</table>

It shall pass all applicable storage and settlement tests. The cement mixing test shall be waived for this emulsion. The polymer material shall be milled or blended into the asphalt or emulsifier solution prior to the emulsification process.

The five-day (5) settlement test may be waived, provided job stored emulsion is used within thirty-six (36) hours from the time of the shipment, or the stored material has had additional emulsion blended into it prior to use.

Six percent (6%) polymer solids, based on asphalt weight, preblended prior to emulsification is considered minimum.

Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it is the same as that used in the mix design. COA shall include, at a minimum, required emulsion properties and percentage of polymer solids in the emulsion.

For the first load of emulsified asphalt produced for the project, the supplier shall submit a sample to the City for testing before use. At any time during application, the City may sample and test all subsequent loads of emulsified asphalt delivered to the project to verify and determine compliance with specification requirements. The cost of testing will be paid by the contractor. Where these tests identify material outside specification requirements, the City shall require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the City. Further, the City may require the material placed containing the emulsified asphalt outside of specification requirements to be removed and replaced at the sole expense of the contractor or left in-place at no-pay.

Aggregate: Use an aggregate consisting of 100% crushed granite. To assure the material is totally crushed, one-hundred percent (100%) of the parent aggregate will be larger than the largest stone in the gradation to-be-used.

In addition to the requirements of FDOT Standard Specification Sections 901 and 902, when aggregate is tested according to the following test, it should meet these minimum requirements:

<table>
<thead>
<tr>
<th>AASHTO Test No.</th>
<th>ASTM Test No.</th>
<th>Quality</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASHTO-T176</td>
<td>ASTM-D2419</td>
<td>Sand Equivalent</td>
<td>65-Min</td>
</tr>
<tr>
<td>AASHTO-T104</td>
<td>ASTM-C88</td>
<td>Soundness</td>
<td>15% Max w/Na₂SO₄, 25% Max w/MgSO₄</td>
</tr>
<tr>
<td>AASHTO-T96</td>
<td>ASTM-C134</td>
<td>Abrasion Resistance</td>
<td>30% Max</td>
</tr>
<tr>
<td>AASHTO-T278/279</td>
<td></td>
<td>Polish Value</td>
<td>24-Min</td>
</tr>
</tbody>
</table>
The abrasion test is to be run on the parent aggregate. The aggregate shall meet state-approved polishing values. Proven performance may justify the use of aggregates that may not pass all of the above tests, subject to approval by the City.

When tested in accordance with AASHTO T27 (ASTM C136) and AASHTO T11 (ASTM C117), the target (mix design) aggregate gradation (including the mineral filler) shall be within one of the following bands:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Type II Percent Passing</th>
<th>Type II Percent Passing</th>
<th>Stockpile Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 (9.5 mm)</td>
<td>100</td>
<td>400</td>
<td>±6%</td>
</tr>
<tr>
<td>#4 (4.75 mm)</td>
<td>70–100</td>
<td>70–90</td>
<td>±5%</td>
</tr>
<tr>
<td>#8 (2.36 mm)</td>
<td>45–70</td>
<td>45–70</td>
<td>±5%</td>
</tr>
<tr>
<td>#16 (1.18 mm)</td>
<td>30–50</td>
<td>30–50</td>
<td>±4%</td>
</tr>
<tr>
<td>#30 (600 um)</td>
<td>20–35</td>
<td>20–35</td>
<td>±4%</td>
</tr>
<tr>
<td>#50 (330 um)</td>
<td>10–20</td>
<td>10–20</td>
<td>±3%</td>
</tr>
<tr>
<td>#100 (150 um)</td>
<td>7–18</td>
<td>7–18</td>
<td>±3%</td>
</tr>
<tr>
<td>#200 (75 um)</td>
<td>5–15</td>
<td>5–15</td>
<td>±3%</td>
</tr>
</tbody>
</table>

The job mix (target) gradation shall be within the gradation band for the desired type. After the target gradation has been submitted (this should be the gradation that the mix design is based on), then the percent passing each sieve shall not vary by more than the stockpile tolerance shown in the above table for each individual sieve, and still remain within the gradation band. It is recommended that the percent passing shall not go from the high end to the low end of the range for any two consecutive screens.

The aggregate will be accepted at the job location stockpile or when loading into the support units for delivery to the lay-down machine. The stockpile shall be accepted based on five gradation tests according to AASHTO T2 (ASTM D75). If the average of the five tests is within the gradation tolerances and one sand equivalent test meets the requirements, the materials will be accepted. If the tests show the material to be out, the contractor will be given the choice to either remove the material or blend other aggregate with the stockpiled material to bring it into specification. Materials used in blending must meet the quality tests before blending and must be blended in a manner to produce a consistent gradation. If blending is used, it will require that a new mix design be performed. The contractor shall supply copies of the aggregate tickets to the customer within 24 hours of delivery to the job site. The cost of testing will be paid by the contractor.

Screening shall be required at the stockpile prior to delivery to the paving machine if there are any problems created by having oversize material in the mix.

Mineral filler: (if required) shall be any recognized brand of non-air entrained Portland cement or hydrated lime that is free from lumps. It may be accepted upon visual inspection. The type and amount of mineral filler needed shall be determined by a laboratory mix design and will be considered as part of the aggregate gradation. An increase or decrease may be permitted when the Micro Surfacing is being placed if it is found to be necessary for better consistency or set times, upon approval by the City and the original mix design engineer.

Water: Potable and free of harmful or deleterious materials.

Additives: Additives may be added to the emulsion mix or any of the component materials to provide the control of the quick-traffic properties. They must be included as part of the mix design and be compatible with the other components of the mix.
**Mix Design:** The Contractor shall submit to the City for approval a complete mix design prepared and certified by a laboratory which has experience in designing Micro Surfacing and signed and sealed by a professional engineer. After the mix design has been approved, no substitution will be permitted, unless approved by the City. Compatibility of the aggregate, polymer-modified emulsion, mineral filler, and other additives shall be verified by the mix design. The mix design shall be made with the same aggregate gradation that the contractor will provide on the project. Required tests and values are as follows:

<table>
<thead>
<tr>
<th>ISSA Test No.</th>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISSA-TB-100</td>
<td>Wet Track Abrasion Loss</td>
<td>60 g/l² (538 g/m²) Max</td>
</tr>
<tr>
<td></td>
<td>One-hour Soak</td>
<td>75 g/l² (807 g/m²) Max</td>
</tr>
<tr>
<td></td>
<td>Six-day Soak</td>
<td></td>
</tr>
<tr>
<td>ISSA-TB-102</td>
<td>Water Resistance, 30 Min</td>
<td>No Discoloration</td>
</tr>
<tr>
<td>ISSA-TB-106</td>
<td>Excose- Asphalt by LWF Sand Adhesion</td>
<td>60 g/l² Max (538 g/m² Max)</td>
</tr>
<tr>
<td>ISSA-TB-113</td>
<td>Mix Time @ 77°F (26°C)</td>
<td>Controllable to 120 Seconds Min</td>
</tr>
<tr>
<td>ISSA-TB-114</td>
<td>Wet Stripping</td>
<td>Pass (90% Min)</td>
</tr>
<tr>
<td>ISSA-TB-115</td>
<td>System Compatibility</td>
<td>Pass</td>
</tr>
<tr>
<td>ISSA-TB-139</td>
<td>Wet Cohesion@ 30-Minutes Min (Set)</td>
<td>12 Kg-cm Min</td>
</tr>
<tr>
<td></td>
<td>@ 60 Minutes Min (Traffic)</td>
<td>20 Kg-cm Min or Near Spin</td>
</tr>
<tr>
<td>ISSA-TB-144</td>
<td>System Compatibility, Min Grade</td>
<td>11 points</td>
</tr>
<tr>
<td>ISSA-TB-147A</td>
<td>Vertical Displacement</td>
<td>10% Max</td>
</tr>
</tbody>
</table>

The Wet Track Abrasion test is performed under laboratory conditions as a component of the mix design process. The purpose of this test is to determine the minimum asphalt content of a micro-surface system. The Wet Track Abrasion Test is not recommended as a field quality control or acceptance test.

The mixing test is used to predict how long the material can be mixed in the machines before it begins to break. It is more for information to be used by the contractor than for quality of the end product.

The mixing test and set-time test should be checked at the highest temperatures expected during construction.

The mix design should report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effect). The report must clearly show the proportions of aggregate, mineral filler (minimum and maximum), water (minimum and maximum), additive usage, and polymer-modified asphalt emulsion based on the dry weight of the aggregate.

All the component materials used in the mix design shall be representative of the materials proposed by the contractor to be used on the project. The percentages of each individual material required shall be shown in the laboratory report.

<table>
<thead>
<tr>
<th>Component Materials</th>
<th>Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual Asphalt</td>
<td>6% to 9% by dry weight of aggregate</td>
</tr>
<tr>
<td>Mineral Filler</td>
<td>0.5 to 3% by dry weight of aggregate</td>
</tr>
<tr>
<td>Polymer-Based Modifier</td>
<td>Min 6% solids based on bitumen weight content</td>
</tr>
<tr>
<td>Additives</td>
<td>As needed</td>
</tr>
<tr>
<td>Water</td>
<td>As required to produce proper mix consistency</td>
</tr>
</tbody>
</table>
After the mix design has been approved, no substitutions to the mix design will be permitted, unless approved by the City. The City will consider inadequate field performance of a mix as sufficient evidence that the properties of the mix related to the mix design have changed. The project will be stopped until it is demonstrated that those properties, or issues, have been sufficiently addressed. The City may require the material represented by the inadequate field performance to be removed and replaced at the sole expense of the contractor or left in place at no pay.

The materials (aggregates, emulsion, mineral filler, and additives) must be from the same source, grade, and type used to develop the approved mix design. Any substitutions or alternate supplies must be preapproved by the City. Changes in the aggregate source or emulsion source requires a new mix design. Blending, co-mingling, and otherwise combining materials from two or more sources, grades, or types not noted in the approved mix design is strictly prohibited. Aggregate stockpiles and emulsion material should be located at or near the job site in sufficient quantity for the job or designated parts of the job.

Equipment:

Mixing Equipment: The machine shall be specifically designed and manufactured to lay Micro-Surfacing. The material shall be mixed by an automatic sequenced, self-propelled Micro-Surfacing mixing machine, which shall be able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral filler, control setting additive, and water to a revolving multi-blade, double-shafted mixer and to discharge the mixed product on a continuous flow basis.

The machine shall have sufficient storage capacity for aggregate, emulsified asphalt, mineral filler, control additive and water to maintain an adequate supply to the proportioning controls.

If continuous mix paving machines are required for the project, the machine shall be equipped to allow the operator to have full control, from the rear of the machine, of the forward and reverse speeds during applications of the Micro-Surfacing material and be equipped with opposite-side-driver-stations to assist in alignment. The self-loading device, opposite-side-driver-stations, and forward and reverse speed controls shall be original equipment manufacturer design.

Proportioning Devices: Individual volume or weight controls for proportioning each material to be added to the mix (i.e., aggregate, mineral filler, emulsified asphalt, additive, and water) shall be provided and properly marked. These proportioning devices are used in material calibration and determining the material output at any time.

Spreading Device: The mixture shall be agitated and spread uniformly in the surfacing box by means of twin shafted paddles or spiral augers fixed in the spreader box. A front seal shall be provided to insure no loss of the mixture at the road contact point. The rear seal shall act as a final strike-off and shall be adjustable. The spreader box and rear strike-off shall be so designed and operated that a uniform consistency is achieved to produce a free flow of material to the rear strike-off. The spreader box shall have suitable means provided to side shift the box to compensate for variations in the pavement geometry.

Secondary Strike-off: A secondary strike-off shall be provided to improve surface texture. The secondary strike-off shall have the same adjustments as the spreader box. No burlap drags will be permitted on the final applications.
Rut-Filling Box: When required, before the final surface course is placed, preliminary Micro Surfacing material may be required to fill ruts, utility cuts, depressions in the existing surface, etc. Ruts of one-half (1/2) inch or greater in depth shall be filled independently with a rut-filling spreader box, either five-foot (5) or six-foot (6) width. For irregular or shallow rutting of less than one-half (1/2) inch depth, a full-width scratch-coat pass may be used as directed by the City. Ruts that are in excess of one and one-half (1 1/2) inches in depth may require multiple placements with the rut-filling spreader box to restore the cross-section. All rut-filling level-up material should cure under traffic for at least a twenty-four (24) hour-period before additional material is placed on top of the level-up.

Auxiliary Equipment: Suitable surface preparation equipment, traffic control equipment, hand tools, and any other support and safety equipment shall be provided by the contractor as necessary, (or as the City requires) to perform the work.

General: Each mixing unit to be used in the performance of the work shall be calibrated in the presence of the City prior to construction. Previous calibration documentation covering the exact materials to be used may be acceptable, provided that no more than sixty (60) days have lapsed. The documentation shall include an individual calibration of each material at various settings, which can be related to the machine metering devices. No machine will be allowed to work on the project until the calibration has been completed and/or accepted.

All equipment, tools, and machines used in the performance of this work shall be maintained in a satisfactory working condition at all times to ensure a high-quality product. Availability of quality assurance devices (such as a 15'-straight edge) shall be the responsibility of the Contractor.

Construction:

Weather Limitations: Micro Surfacing shall not be applied if either the pavement or air temperature is below 50°F and falling but may be applied when both pavement and air temperatures are above 45°F and rising. No Micro Surfacing shall be applied when there is the possibility that the finished product will freeze within 24 hours. The mixture shall not be applied when weather conditions prolong opening-to-traffic beyond a reasonable time or as directed by the City.

Surface Preparation: Immediately prior to applying the Micro Surfacing, the surface shall be cleared of all loose material, silt spots, vegetation, and other objectionable material. Any standard cleaning method will be acceptable. If water is used, cracks shall be allowed to dry thoroughly before applying Micro Surfacing.

Manholes, valve boxes, drop inlets and other service entrances shall be protected from the Micro Surfacing by a suitable method. The City shall approve the surface preparation prior to surfacing. No dry aggregate either spilled from the lay-down machine or existing on the road, will be permitted. Remove any thermoplastic traffic striping or reflective pavement markers in the areas to be Micro Surfaced.

Tack Coats: The City may require placement of a tack coat prior to paving. If required, the tack coat shall consist of one-part emulsified asphalt to three parts water and shall be applied with a standard distributor. The emulsified asphalt should be QPS or CSS grade, or the Micro Surface emulsion. The distributor shall be capable of applying the dilution evenly at a rate of 0.05 to 0.15 gal/yd². The tack coat shall be allowed to cure sufficiently before the application of micro surfacing.

Crack Teep. Unless otherwise instructed by the City, treat cracks wider than 0.25" in the pavement surface with an approved crack sealer prior to application of the Micro Surface.
Application: A 500 ft minimum test strip shall be placed in conditions similar to those expected to be encountered during the project unless specifically waived by the City. The test strip shall demonstrate that the equipment used, crew selected, and materials to be incorporated into the product are performing as required to meet specifications.

The surface shall be pre-wetted ahead of the spreader box. The rate of application of the spray shall be adjusted during the day to suit temperatures, surface texture, humidity, and dryness of the pavement.

The Micro Surfacing shall be of the desired consistency upon leaving the mixer. A sufficient amount of material shall be carried in all parts of the spreader at all times so that a complete coverage is obtained. Overloading of the spreader shall be avoided. No lumping, balling, or unmixed aggregate shall be permitted.

No streaks, such as those caused by oversized aggregate, shall be left in the finished surface. If excess streaking develops, the job will be stopped until the contractor proves to the Project Manager that the situation has been corrected. Excessive streaking is defined as more than four drag marks greater than one half (1/2) inch wide and four inches (4) long, or one inch (1) wide and three (3) inches long, in any 29.9 yd² area. No transverse ripples or longitudinal streaks of one-fourth (1/4) inch in depth will be permitted, when measured by placing a ten (10) foot straight edge over the surface.

The Micro Surfacing mixture shall be of the proper consistency at all times, so as to provide the application rate required by the surface condition. The average application rate, as measured by the Project Manager, shall be in accordance with the following table:

<table>
<thead>
<tr>
<th>Aggregate Type</th>
<th>Location</th>
<th>Suggested Application Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single application</td>
<td>Urban and Residential Streets</td>
<td>Type II - 18 - 22 lb/yd²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type III - 22 - 26 lb/yd²</td>
</tr>
<tr>
<td>Double application</td>
<td>Urban, Residential, and Primary Routes</td>
<td>Type II - 32 - 40 lb/yd²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type III - 42 - 60 lb/yd²</td>
</tr>
<tr>
<td>Rut-Fill</td>
<td>Wheel Ruts</td>
<td>Tonnage As Required and Approved by City</td>
</tr>
</tbody>
</table>

Application rates are based upon the weight of dry aggregate in the mixture. Application rates are affected by the unit weight of the aggregate. The contractor shall calculate the yield of the course placed at least three times per day. The City shall randomly determine the timing for the readings used to calculate application rate.

Single applications shall be applied in single passes, and Double applications in two, full-width passes. When two passes are used, the first pass (scratch course) is made using a metal or stiff rubber strike-off and applying only what the surface demands for leveling. The second course is applied at 15 - 30 lb/yd².

Opening to Traffic: Micro Surfacing shall be capable of producing an emulsified asphalt paving mixture that will cure at a rate which will permit straight rolling traffic on the pavement within one hour after application without damaging the pavement surface. Any damage done by traffic to the Micro Surfacing shall be repaired by the contractor at his expense.

Joints: No excess buildup, uncovered areas, or unsightly appearance shall be permitted on longitudinal or transverse joints. The contractor shall provide suitable width spreading equipment to produce a minimum number of longitudinal joints throughout the project. When possible, longitudinal joints shall be placed on lane lines. Half passes and odd width passes will be used only in minimum amounts. If half passes are
used, they shall not be the last pass of any paved area. A maximum of three (3) inches shall be allowed for overlap of longitudinal lane line joints. Also, the joint shall have no more than a one-fourth (¼) inch difference in elevation when measured by placing a ten (10) foot straight edge over the joint and measuring the elevation drop-off.

Mix Stability: The Micro Surfacing shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and spreading. It shall be free of excess water or emulsion and free of segregation of the emulsion and aggregate fines from the coarser aggregate. Under no circumstances shall water be sprayed directly into the lay-down box while laying Micro Surfacing material.

Handwork: Areas which cannot be reached with the machine shall be surfaced using hand-squeegees to provide uniform coverage. If necessary, the area to be hand-worked shall be lightly dampened prior to mix placement. Care shall be exercised to leave no unsightly appearance from hand-work. The same type of finish as applied by the spreader box shall be required.

Edge lines: Care shall be taken to ensure straight lines along curbs and shoulders. No runoff on these areas will be permitted. Lines at intersections will be kept straight to provide a good appearance. If necessary, a suitable material will be used to mask off the end of streets to provide straight lines. Edge lines shall not vary by more than ± 2 inches horizontal variance in any 100 feet of length.

Clean-up: All areas, such as man-ways, gutters, and intersections, shall have the Micro Surfacing mix removed as specified by the City. The contractor shall, on a daily basis, remove any debris associated with the performance of the work, completely and thoroughly to the satisfaction of the City. In addition, the contractor shall, at the request of the City, pressure wash any area such as, curb and gutter, private driveways, etc., removing any and all stains associated with the placement of the Micro Surfacing.

General Performance: Provide completed pavement which performs to the satisfaction of the City without bleeding, rutting, shoving, raveling, stripping, or showing other types of pavement distress or unsatisfactory performance.

Contractor’s Quality Control Plan: Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the City with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:

- Source materials used on the project.
- Sampling and testing methods used to determine compliance with material specifications.
- Equipment to be used on the project.
- Calibration method used to determine compliance with the mix design.
- Pavement cleaning and preparation procedure.
- Plan for protecting Micro Surfacing mixture from damage by traffic.
- Procedure for monitoring initial acceptance requirements.
- An action plan demonstrating adjustment of the Micro Surfacing operation for adverse environmental conditions.

Testing: The City may obtain one or more samples of Micro Surfacing mixture for each day of production. Tests samples shall be collected and performed in accordance with AASHTO T308 and AASHTO T30 to determine the residual asphalt content and the gradation of the sample. Evaporate all water from the sample prior to testing. Determine the deviation of the test results for each sample from the mix design target values. Compare the deviation from the mix design to the mixture control tolerances shown here.
### Aggregate and Emulsified Asphalt - Acceptance Limits

<table>
<thead>
<tr>
<th>Aggregate</th>
<th>Tolerance from Mix Design Target Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Passing No. 4 Sieve</td>
<td>± 6%</td>
</tr>
<tr>
<td>Percent Passing No. 8 Sieve</td>
<td>± 7%</td>
</tr>
<tr>
<td>Percent Passing No. 50 Sieve</td>
<td>± 6%</td>
</tr>
<tr>
<td>Percent Passing No. 200 Sieve</td>
<td>± 3%</td>
</tr>
</tbody>
</table>

### Emulsified Asphalt

<table>
<thead>
<tr>
<th>Property</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual Asphalt Content of (single test)</td>
<td>± 0.5%</td>
</tr>
<tr>
<td>Residual Asphalt Content of (daily average)</td>
<td>± 0.2%</td>
</tr>
<tr>
<td>Application Rate (1,000 ft yield checks)</td>
<td>~2 lbs/yard²</td>
</tr>
<tr>
<td>Sand Equivalent Test (ASTM D2419)</td>
<td>7% from mix design (not less than 60)</td>
</tr>
</tbody>
</table>

**Documentation:** Complete a daily report that includes the following information:

- Job number
- Route/Street Name(s)
- Owner's On-Site Representative Name
- Date
- Air temperature - Min/Max (during application)
- Unit weight of emulsified asphalt (pounds per gallon)
- Beginning and ending application locations
- Counter readings (beginning, ending, and total difference)
- Length and width in feet
- Total area (square yards)
- Aggregate weight
- Gallons of emulsified asphalt
- Application rate (pounds per square yard)
- Contractor's authorized signature
- QC aggregate properties (if required)
- Emulsified asphalt bill of lading(s)

**Traffic Control:** The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh mix until all operations have been completed and the micro surfacing is sufficiently dry to keep vehicular traffic from marking the mat. The Contractor shall submit a MOT plan indicating all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. MOT and associated devices shall be checked daily and periodically throughout the project for compliance, and where adjustments or corrections are needed, prompt revisions shall be made. The Contractor shall construct a two (2) foot apron at all driveways.

**Acceptance:** Allow the City access to in-progress work for quality assurance review and testing. Upon completion of work, schedule an inspection with the City. The City will note deficiencies. Any deficiencies identified during this process will be addressed by the Contractor at no additional cost.

**Method of Measurement:** If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for High Polymer Micro Surfacing, and not specifically listed in another item in the Bid Form, shall be included in this item.
Basis of Payment: The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for High Polymer Micro Surfacing (Single application), High Polymer Micro Surfacing (Double application), Tack Coat, and the per Ton price for High Polymer Micro Surfacing (Rut filling) or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to High Polymer Micro Surfacing, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.

TECHNICAL PROVISION

TP-318a

Highly Modified Slurry Seal

The work specified in this section consists of placement of a highly polymer modified Slurry Seal on a prepared existing paved road, placed within the lines, grades, and thickness established by the City.

Description: Highly Modified Slurry Seal is a polymer modified cold mix paving system that begins as a mixture of dense graded aggregate, polymer modified asphalt emulsion, water, and mineral fillers placed in a slurry state to extend the service life of both urban and rural roads within the City. Highly Modified Slurry Seal as specified herein contains modified asphalt emulsion at a rate of 6% minimum.

Materials:

Emulsified Asphalt: Quick set cationic type CSS or CQS emulsion with natural or synthetic polymer modifiers conforming to the requirements specified below:

<table>
<thead>
<tr>
<th>Property</th>
<th>AASHTO Test Method</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Base Properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Original DSR, kPa (S'ain 3, 10 rad/sec) @ 76°C</td>
<td>T315</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Emulsion Properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity, Saybolt Furol @ 122°F, SFS</td>
<td>T58</td>
<td>45.0</td>
<td>150.0</td>
</tr>
<tr>
<td>Particle Charge</td>
<td>Positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sieve test</td>
<td>T58</td>
<td></td>
<td>0.4</td>
</tr>
<tr>
<td>Residue by Evaporation</td>
<td>T58</td>
<td>82.0</td>
<td></td>
</tr>
<tr>
<td>Residue Properties from Low Temperature Evaporation</td>
<td>PP72-11, Procedure B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Original DSR, kPa (G%ain 3, 10 rad/sec) @ 76°C</td>
<td>T315</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Original DSR, deg (phase angle 3, 10 rad/sec) @ 76°C</td>
<td>T315</td>
<td></td>
<td>60.0</td>
</tr>
</tbody>
</table>

It shall pass all applicable storage and settlement tests. The cement mixing test shall be waived for this emulsion. The polymer material shall be milled or blended into the asphalt or emulsifier solution prior to the emulsification process.

The minimum amount and type of polymer modifier shall be determined by the laboratory performing the mix design. The minimum amount required will be based on asphalt weight content and will be certified by the emulsion supplier. A six percent (6%) polymer solids, based on asphalt weight, pre-blended prior to emulsification is considered minimum.

The five-day (5) settlement test may be waived provided stored emulsion is used within thirty-six (36) hours from the time of the shipment, or the stored material has had additional emulsion blended into it prior to use.
Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it is the same as that used in the mix design.

For the first load of emulsified asphalt produced for the project, the supplier shall submit a sample to the City for testing before use. At any time during application, the City may sample and test all subsequent loads of emulsified asphalt delivered to the project to verify and determine compliance with specification requirements. The cost of testing shall be paid by the contractor. Where these tests identify material outside specification requirements, the City shall require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the City. Further, the material placed containing the emulsified asphalt outside of specification requirements shall be removed and replaced at the sole expense of the contractor or his supplier.

Aggregate: Use an aggregate consisting of 100% crushed granite. To assure the material is totally crushed, one hundred percent (100%) of the parent aggregate will be larger than the largest stone in the gradation to be used.

In addition to the requirements of FDOT Standard Specification Sections 901 and 902, when aggregate is tested according to the following test, it should meet these minimum requirements:

<table>
<thead>
<tr>
<th>AASHTO Test No.</th>
<th>ASTM Test No.</th>
<th>Quality</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASHTO-T176</td>
<td>ASTM-D2419</td>
<td>Sand Equivalent</td>
<td>55-Min</td>
</tr>
<tr>
<td>AASHTO-T104</td>
<td>ASTM-C88</td>
<td>Soundness</td>
<td>16% Max w/ Na2SO4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25% Max w/ MgSO4</td>
</tr>
<tr>
<td>AASHTO-T66</td>
<td>ASTM-C134</td>
<td>Abrasion-Resistance</td>
<td>30% Max</td>
</tr>
<tr>
<td>AASHTO-T276, T279</td>
<td></td>
<td>Polish-Value</td>
<td>34-Min</td>
</tr>
</tbody>
</table>

The abrasion test is to be run on the parent aggregate. The aggregate shall meet state-approved polishing values. Proven performance may justify the use of aggregates that may not pass all of the above tests, subject to approval by the City.

When tested in accordance with AASHTO T27 (ASTM C136) and AASHTO T11 (ASTM C117), the target (mix design) aggregate gradation (including the mineral filler) shall be within one of the following bands:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Type-I Percent Passing</th>
<th>Type-II Percent Passing</th>
<th>Type-III Percent Passing</th>
<th>Stockpile Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>%4 (0.5-mm)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>± 5%</td>
</tr>
<tr>
<td>%4 (2.75-mm)</td>
<td>100</td>
<td>90–100</td>
<td>70–90</td>
<td>± 5%</td>
</tr>
<tr>
<td>%6 (2.36-mm)</td>
<td>80–100</td>
<td>65–90</td>
<td>45–70</td>
<td>± 5%</td>
</tr>
<tr>
<td>%8 (1.18-mm)</td>
<td>65–90</td>
<td>45–70</td>
<td>28–60</td>
<td>± 6%</td>
</tr>
<tr>
<td>%16 (0.60-mm)</td>
<td>40–65</td>
<td>30–50</td>
<td>19–34</td>
<td>± 6%</td>
</tr>
<tr>
<td>%30 (0.30-mm)</td>
<td>25–42</td>
<td>18–30</td>
<td>12–25</td>
<td>± 4%</td>
</tr>
<tr>
<td>%60 (0.05-mm)</td>
<td>15–30</td>
<td>10–21</td>
<td>7–18</td>
<td>± 3%</td>
</tr>
<tr>
<td>%200 (0.075-mm)</td>
<td>10–20</td>
<td>5–15</td>
<td>5–15</td>
<td>± 2%</td>
</tr>
</tbody>
</table>
The job mix (target) gradation shall be within the gradation band for the desired type. After the target gradation has been submitted (this should be the gradation that the mix design is based on), then the percent passing each sieve shall not vary by more than the stockpile tolerance shown in the above table for each individual sieve, and still remain within the gradation band. It is recommended that the percent passing shall not go from the high end to the low end of the range for any two consecutive screens. The aggregate will be accepted at the job location stockpile or when loading into the support units for delivery to the laydown machine. The stockpile shall be accepted based on five gradation tests according to AASHTO T2 (ASTM D75). If the average of the five tests is within the gradation tolerances and one sand equivalent test meets the requirements the materials will be accepted. If the tests show the material to be out, the contractor will be given the choice to either remove the material or blend other aggregate with the stockpiled material to bring it into specification. Materials used in blending must meet the quality tests before blending and must be blended in a manner to produce a consistent gradation. If blending is used, it will require that a new mix design be performed. The contractor shall supply copies of the aggregate tickets to the customer within 24 hours of delivery to the job site. The cost of the testing shall be paid by the contractor. Screening shall be required at the stockpile prior to delivery to the paving machine if there are any problems created by having oversize material in the mix.

Mineral filler: (if required) shall be any recognized brand of non-air entrained Portland cement or hydrated lime that is free from lumps. It may be accepted upon visual inspection. The type and amount of mineral filler needed shall be determined by a laboratory mix design and will be considered as part of the aggregate gradation. An increase or decrease of less than one percent (1%) may be permitted when the Slurry is being placed if it is found to be necessary for better consistency or set times.

Waters: Potable and free of harmful or deleterious materials.

Additives: Additives may be added to the emulsion mix or any of the component materials to accelerate or retard the break of the Slurry Seal. They must be included as part of the mix design and be compatible with the other components of the mix.

Mix Design: The Contractor shall submit to the City for approval a complete mix design prepared and certified by a laboratory which has experience in designing Slurry Seal Systems and signed and sealed by a professional engineer. After the mix design has been approved, no substitution will be permitted, unless approved by the City. Compatibility of the aggregate, polymer-modified emulsion, mineral filler, and other additives shall be verified by the mix design. The mix design shall be made with the same aggregate gradation that the contractor will provide on the project. Required tests and values are as follows:

<table>
<thead>
<tr>
<th>ISSA Test No.</th>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISSA-TB-100</td>
<td>Wet-Track Abrasion Loss  One-hour Soak</td>
<td>38 g/ft² Max</td>
</tr>
<tr>
<td>ISSA-TB-102</td>
<td>Water Resistance, 30 Minutes</td>
<td>No Discoloration</td>
</tr>
<tr>
<td>ISSA-TB-109</td>
<td>Excess Asphalt by LWT Sand Adhesion</td>
<td>60 g/ft² Max</td>
</tr>
<tr>
<td>ISSA-TB-113</td>
<td>Mix Time @ 77°F (25°C)</td>
<td>Controllable to 180 Seconds Min</td>
</tr>
<tr>
<td>ISSA-TB-114</td>
<td>Wet Stripping</td>
<td>Pass (90% Min)</td>
</tr>
<tr>
<td>ISSA-TB-115</td>
<td>System Compatibility</td>
<td>Pass</td>
</tr>
<tr>
<td>ISSA-TB-130</td>
<td>Set Time, 30 Minutes, Min</td>
<td>42 kg/cm</td>
</tr>
<tr>
<td>ISSA-TB-139</td>
<td>Early Rolling Traffic Time, 60 Minutes</td>
<td>20 kg/cm</td>
</tr>
</tbody>
</table>

To be conducted Recommended Job Mix Testing:

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX-245 F</td>
<td>Cation Mass Loss</td>
<td>2.5% Max</td>
</tr>
<tr>
<td>EN-12697-26-(e)</td>
<td>Indirect Tensile Stiffness Modulus—MPa</td>
<td>40,000 Min</td>
</tr>
<tr>
<td>AASHTO T166</td>
<td>Bulk-Specific Gravity</td>
<td>2.100—2.400</td>
</tr>
</tbody>
</table>
The Wet Track Abrasion test is performed under laboratory conditions as a component of the mix design process. The purpose of this test is to determine the minimum asphalt content of a slurry seal system. The Wet Track Abrasion Test is not recommended as a field quality control or acceptance test.

The mixing test is used to predict how long the material can be mixed in the machines before it begins to break. It is more for information to be used by the contractor than for quality of the end product.

The mixing test and set time test should be checked at the highest temperatures expected during construction.

The Indirect Tensile Stiffness Modulus and the Cantabro Mass Loss samples are to be prepared by ISTA TB-148 Matric Compaction only (20 blows per side) and tested in dry condition at 25°C.

The mix design should report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effect). The report must clearly show the proportions of aggregate, mineral filler (minimum and maximum), water (minimum and maximum), additive usage, and polymer-modified asphalt emulsion based on the dry weight of the aggregate.

All the component materials used in the mix design shall be representative of the materials proposed by the contractor to be used on the project. The percentages of each individual material required shall be shown in the laboratory report.

<table>
<thead>
<tr>
<th>Component Materials</th>
<th>Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual Asphalt (% dry weight of aggregate)</td>
<td>Type I — 10% to 16%</td>
</tr>
<tr>
<td></td>
<td>Type II — 7.5% to 13.5%</td>
</tr>
<tr>
<td></td>
<td>Type III — 6.5% to 12%</td>
</tr>
<tr>
<td>Mineral Filler</td>
<td>0.0 to 3% (Based on dry weight of aggregate)</td>
</tr>
<tr>
<td>Polymer-Based Modifier</td>
<td>Minimum of 6% solids based on bitumen weight content</td>
</tr>
<tr>
<td>Additives</td>
<td>As-needed</td>
</tr>
<tr>
<td>Water</td>
<td>As required to produce proper mix consistency</td>
</tr>
</tbody>
</table>

**MIX TOLERANCES**

Tolerances for the slurry-seal mixture are as follows:

a. After the residual asphalt content is determined, a variation ± 0.5% by weight of dry aggregate will be permitted.

b. The rate of application shall not vary more than ± 2 lb/yd² when the surface texture does not vary significantly.

After the mix design has been approved, no substitutions to the mix design will be permitted unless approved by the City. The City will consider inadequate field performance of a mix as sufficient evidence that the properties of the mix related to the mix design have changed, and the City will no longer allow the use of the mix design. The project will be stopped until it is demonstrated that those properties, or issues, have been sufficiently addressed. The material represented by the inadequate field performance will be removed and replaced at no cost to the City.

The materials (aggregates, emulsion, mineral filler, and additives) must be from the same source, grade, and type used to develop the approved mix design. Any substitutions or alternate supplies must
be preapproved by the City. Changes in the aggregate source or emulsion source requires revalidating the mix design and the performance properties. Blending, co-mingling and otherwise combining materials from two or more sources, grades, or types not noted in the approved Mix Design is strictly prohibited.

Aggregate stockpiles and emulsion material should be located at or near the job site in sufficient quantity for the job or designated parts of the job.

Equipment:

Mixing Equipment: The machine shall be specifically designed and manufactured to apply slurry systems. The material shall be mixed by an automatic sequenced, self-propelled slurry mixing machine of either truck-mounted or continuous run design, which shall be able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral filler, control setting additive, and water to a revolving multi-blade, double shafted mixer and to discharge the mixed product on a continuous flow basis.

The machine shall have sufficient storage capacity for aggregate, emulsified asphalt, mineral filler, control additive and water to maintain an adequate supply to the proportioning controls.

If continuous run equipment is used, the machine shall be equipped to allow the operator to have full control, from the rear of the machine, of the forward and reverse speeds during application of the slurry material and be equipped with opposite side driver stations to assist in alignment. The self-loading device, opposite side driver stations, and forward and reverse speed controls shall be original equipment manufacturer design.

The city shall decide which type of equipment best suits the specific project. In some cases, truck-mounted machines may be more suited, i.e. cul-de-sacs, small narrow roadways, parking lots, etc. On some projects, continuous run equipment may be chosen due to the continuity of mix and the reduction of start-up joints.

Proportioning Devices: Individual volume or weight controls for proportioning each material to be added to the mix (i.e. aggregate, mineral filler, emulsified asphalt, additive, and water) shall be provided and properly marked. These proportioning devices are used in material calibration and determining the material output at any time.

Spreading Device: The mixture shall be agitated and spread uniformly in the surfacing box by means of twin shafted paddles or spiral augers fixed in the spreader box. A front seal shall be provided to insure no loss of the mixture at the road contact point. The rear seal shall act as a final strike-off and shall be adjustable. The spreader box and rear strike-off shall be so designed and operated that uniform consistency is achieved to produce a free flow of material to the rear strike-off. The spreader box shall have suitable means provided to side shift the box to compensate for variations in the pavement geometry.

A burlap drag or other approved screed may be attached to the rear of the spreader box to provide a highly textured uniform surface. A drag stiffened by hardened slurry is ineffective and should be replaced immediately.

Auxiliary Equipment: Suitable surface preparation equipment, traffic control equipment, hand tools, and any other support and safety equipment shall be provided by the contractor as necessary, (or as the City requires) to perform the work.

General: Each mixing unit to be used in the performance of the work shall be calibrated in the presence
of the City prior to construction. Previous calibration documentation covering the exact materials to be used may be acceptable, provided that no more than sixty (60) days have lapsed. The documentation shall include an individual calibration of each material at various settings, which can be related to the machine-metering devices. No machine will be allowed to work on the project until the calibration has been completed and/or accepted.

All equipment, tools, and machines used in the performance of this work shall be maintained in satisfactory working condition at all times to ensure a high-quality product. Availability of quality assurance devices (such as a 15° straight edge) shall be the responsibility of the Contractor.

**Construction:**

**Weather Limitations:** Slurry paving shall not be applied if either the pavement or air temperature is below 50°F and falling but may be applied when both pavement and air temperatures are above 45°F and rising. No slurry seal shall be applied when there is the possibility that the finished product will freeze within 24 hours. The mixture shall not be applied when weather conditions prolong opening to traffic beyond a reasonable time or as directed by the City.

**Surface Preparation:** Immediately prior to applying the slurry seal, the surface shall be cleared of all loose material, silt spots, oil spots, vegetation, and other objectionable material. Any standard cleaning method will be acceptable. If water is used, cracks shall be allowed to dry thoroughly before applying slurry seal. Manholes, valve boxes, drop-inlets and other service entrances shall be protected from the slurry by a suitable method. The City shall approve the surface preparation prior to surfacing. No dry aggregate other than that incorporated into the product will be permitted. Remove any thermoplastic traffic striping or reflective pavement markers in the areas to be slurry sealed.

**Tack Coat:** The City may require placement of a tack coat prior to paving. If required, the tack coat shall consist of one part emulsified asphalt to three parts water and shall be applied with a standard distributor. The emulsified asphalt should be SS or CSS grade, or the slurry seal emulsion. The distributor shall be capable of applying the dilution evenly at a rate of 0.05 to 0.15 gal/yd². The tack coat shall be allowed to cure sufficiently before the application of slurry seal.

**Cracks:** Unless otherwise instructed by the City, treat cracks wider than 0.25" in the pavement-surface with an approved crack-sealer prior to application of the slurry seal.

**Application:** A 500-ft minimum test strip shall be placed in conditions similar to those expected to be encountered during the project unless specifically waived by the City. The test strip shall demonstrate that the equipment used, crew selected and materials to be incorporated into the product are performing as required to meet specifications.

The surface shall be pre-wetted ahead of the spreader box. The rate of application of the spray shall be adjusted during the day to suit temperatures, surface texture, humidity, and dryness of the pavement. No pooling or standing water shall be paved over.

The slurry seal shall be of the desired consistency upon leaving the mixer. A sufficient amount of material shall be carried in all parts of the spreader at all times so that complete coverage is obtained. Overloading of the spreader shall be avoided. No dumping, balling, or unmixed aggregate shall be permitted.

No streaks, such as those caused by oversized aggregate or broken mix, shall be left in the finished surface. If excessive streaking develops, the job will be stopped until the contractor proves to the City that the situation has been corrected. Excessive streaking is defined as more than four drag marks greater
than one-half (½) inch wide and four inches (4) long, or one inch (1) wide and three (3) inches long, in any 30-yd² area. No transverse ripples or longitudinal streaks of one-fourth (¼) inch in depth will be permitted, when measured by placing a ten (10) foot straight edge over the surface.

The slurry mixture shall be of the proper consistency at all times, so as to provide the application rate required by the surface condition. The average application rate shall be in accordance with the following table:

<table>
<thead>
<tr>
<th>Aggregate Type</th>
<th>Location</th>
<th>Application Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE I</td>
<td>Parking Areas, Urban and Residential Streets</td>
<td>8—42 lbs/yd²</td>
</tr>
<tr>
<td>TYPE II</td>
<td>Urban and Residential Streets</td>
<td>10—18 lbs/yd²</td>
</tr>
<tr>
<td>TYPE III</td>
<td>Urban, Residential, and Primary Routes</td>
<td>15—22 lbs/yd²</td>
</tr>
</tbody>
</table>

Application rates are based upon the weight of dry aggregate in the mixture. Application rates are affected by the unit weight of the aggregate. The contractor shall calculate the yield of the course placed at least three times per day. The city shall randomly determine the timing for the readings used to calculate application rate.

Opening to Traffic: Slurry seal shall be capable of producing an emulsified asphalt paving mixture that will cure at a rate which will permit straight rolling traffic on the pavement within two (2) hours after application without damaging the pavement surface. Any damage done by traffic to the slurry shall be repaired by the contractor at his/her expense.

Joints: No excess buildup, uncovered areas, or unsightly appearance shall be permitted on longitudinal or transverse joints. The contractor shall provide suitable width spreading equipment to produce a minimum number of longitudinal joints throughout the project. When possible, longitudinal joints shall be placed on lane lines. Half passes and odd width passes will be used only in minimum amounts. If half passes are used, they shall not be the last pass of any paved area. A maximum of three (3) inches shall be allowed for overlap of longitudinal lane line joints. Also, the joint shall have no more than a one-fourth (¼) inch difference in elevation when measured by placing a ten (10) foot straight edge over the joint and measuring the elevation drop-off.

Mix Stability: The slurry seal shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and spreading. It shall be free of excess water or emulsion and free of segregation of the emulsion and aggregate fines from the coarser aggregate. Under no circumstances shall water be sprayed directly into the lay-down box while laying slurry material.

Handwork: Areas which cannot be reached with the machine shall be surfaced using hand squeegees to provide uniform coverage. If necessary, the area to be hand worked shall be lightly dampened prior to mix placement. Care shall be exercised to leave no unsightly appearance from hand work. The same type of finish as applied by the spreader box shall be required.

Edgelines: Care shall be taken to ensure straight lines along curbs and shoulders. No runoff on these areas will be permitted. Lines at intersections will be kept straight to provide a good appearance. If necessary, a suitable material will be used to mask off the end of streets to provide straight lines. Edge lines shall not vary by more than ± 2 inches horizontal variance in any 100 feet of length.
Clean-up: All areas, such as man-ways, gutters, and intersections, shall have the slurry-mix removed as specified by the City. The contractor shall, on a daily basis, remove any debris associated with the performance of the work, completely and thoroughly to the satisfaction of the City. In addition, the contractor shall, at the request of the City, perform any other work, such as, curb and gutter, private driveways, etc., removing any and all stains associated with the placement of the Slurry Seal.

General Performance: Provide complete pavement which performs to the satisfaction of the City without bleeding, rutting, shearing, raveling, stripping, or showing other types of pavement distress or unsatisfactory performance.

Contractor's Quality Control Plan: Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the City with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:

- Source materials used on the project.
- Sampling and testing methods used to determine compliance with material specifications.
- Equipment to be used on the project.
- Calibration method used to determine compliance with the mix design.
- Pavement cleaning and preparation procedure.
- Plan for protecting slurry seal mixture from damage by traffic.
- Procedure for monitoring initial acceptance requirements.
- An action plan demonstrating adjustment of the slurry seal operation for adverse environmental conditions.

Testing: The City may obtain one or more samples of slurry mixture for each day of production. Tests samples shall be collected and performed in accordance with AASHTO T-308 and AASHTO T-30 to determine the residual asphalt content and the gradation of the sample. Evaporate all water from the sample prior to testing. Determine the deviation of the test results for each sample from the mix design target values. Compare the deviation from the mix design to the mixture control tolerances shown here:

<table>
<thead>
<tr>
<th>Aggregate and Emulsified Asphalt - Acceptance Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate</td>
</tr>
<tr>
<td>Percent Passing-No. 4 Sieve</td>
</tr>
<tr>
<td>Percent Passing-No. 8 Sieve</td>
</tr>
<tr>
<td>Percent Passing-No. 50 Sieve</td>
</tr>
<tr>
<td>Percent Passing-No. 200 Sieve</td>
</tr>
<tr>
<td>Emulsified Asphalt</td>
</tr>
<tr>
<td>Residual Asphalt Content of (single test)</td>
</tr>
<tr>
<td>Residual Asphalt Content of (daily average)</td>
</tr>
<tr>
<td>Application Rate (1,000 ft yield checks)</td>
</tr>
<tr>
<td>Sand Equivalent Test (ASTM D2419)</td>
</tr>
</tbody>
</table>

ITB 19-35 CITYWIDE PAVING PROGRAM
Documentation: Complete a daily report that includes the following information:

- Job number
- Route/Street Name(s)
- Owner's On-Site Representative Name
- Date
- Air temperature—Min/Max (during application)
- Unit weight of emulsified asphalt (pounds per gallon)
- Beginning and ending application locations
- Counter readings (beginning, ending, and total difference)
- Length and width in feet
- Total area (square yards)
- Aggregate weight
- Gallons of emulsified asphalt
- Application rate (pounds per square yard)
- Contractor's authorized signature
- QC aggregate properties (if required)
- Asphalt emulsified asphalt bill of lading(s)

Traffic Control: The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh mix until all operations have been completed and the slurry surface is sufficiently dry to keep vehicular traffic from marking the mat. The Contractor shall submit a MUT plan indicating all facets of traffic control for the project area. The MUT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. MUT and associated devices shall be checked daily and periodically throughout the project for compliance, and where adjustments or corrections are needed, prompt revisions shall be made. The Contractor shall construct a two (2) foot apron at all driveways.

Acceptance: Allow the City access to in-progress work for quality assurance review and testing. Upon completion of work, schedule an inspection with the City. The City will note deficiencies. Any deficiencies identified during this process will be addressed by the Contractor at no additional cost.

Method of Measurement: If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for Slurry Seal, and not specifically listed in another item in the Bid Form, shall be included in this item.

Basis of Payment: The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for High Polymer Slurry Seal and Tack Coat, or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Slurry Seal, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.
SECTION 327
MILLING OF EXISTING ASPHALT PAVEMENT

For work related to this specification, utilize the Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction (Standard Specs), Dated 2014, except as amended herein. The purpose of this Technical Special Provision (TSP) is generally to remove those references to adjusted pay factors as may be present, and certain aspects of contractor quality control and relate the contractual obligations to between contractor and City as opposed to between contractor and FDOT. Other technical changes may also be included herein. When a section is included in this specification, only those sentences included shall be deemed changed. If a sentence is not included in this TSP, no change has been made. In places where additions are made, or sentences are stricken, this TSP will note that.

Where reference is made to "Engineer" or "Department", the word "City" or "City Representative" as applicable shall be substituted. Where reference is made to specifications within Division 1 of the FDOT Standard Specs, this contract and its appropriate sections shall be the target.

327-1 Description.

Take ownership of milled material, unless otherwise noted in the plans or in the bid form.

327-3 Construction.

327-3.1 General: When milling to improve rideability or cross slope, remove the existing pavement to the average depth specified in the Plans or in the bid form, in a manner that will restore the pavement surface to a uniform cross-section and longitudinal profile. The City representative may require the use of a string-line, straight edge or other proofing tool to ensure maintaining the proper alignment.

(Append to paragraph three)
In the absence of plans for this project or any portion thereof, longitudinal and cross slope shall match the original slope, or conform to the slopes directed by the City Representative in the field.

327-3.2 Quality Control Requirements:
(Append to end)

The City Representative may waive any or all portions of this section for any portion of the project. This does not prohibit the City Representative from requiring individual measurements as may be deemed necessary at any location, or from requiring the entire procedure for portions of the project.

327-3.3 Verification:
(Append to end)
Technical Special Provisions

The City Representative may waive any or all portions of this section for any portion of the project if verification is not deemed necessary. This does not relieve the contractor of repairs necessary from any area not meeting the minimum requirements of this specification. The contractor may request verification as may be needed to ensure accuracy of contractor's equipment or methods.

327-5 Method of Measurement.

The quantity to be paid for will be the field measured quantity area, in square yards, over which milling is completed and accepted.

327-6 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section, including hauling off and stockpiling or otherwise disposing of the milled material.

Payment will be made under:

Item No. 327-70- Milling Existing Asphalt Pavement - per square yard.

[Remainder of this page left intentionally blank]
TECHNICAL PROVISION TP-
710
PAINTED TRAFFIC STRIPES AND MARKINGS

The work under this Technical Provision consists of painting reflectorized traffic stripes, including edge stripes and traffic guide.

The placing of painted traffic stripes and markings as shown on the plans shall conform to the requirements of Section 710 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction latest edition, and in accordance with Florida Department of Transportation, Roadway and Traffic Design Standards (index appropriate for proposed work) latest edition except as amended herein.

It shall be the responsibility of the contractor to perform precise measurements and drawings prior to beginning work such that pavement markings can be replaced in their exact locations. Unless otherwise directed by the engineer, replace all markings in their respective locations at the lengths and widths in place prior to beginning work within the same day the markings are removed.

Method of Measurement: The quantity to be paid for under this Technical Provision shall be number of per each or per lineal foot of the payment items, completed and accepted.

No measurement as a part of this technical provision will be provided for temporary traffic stripes or messages needed for temporary control of traffic prior to final striping.

Measurement for Skip Traffic Striping and Guidelines will be the Net Lineal Feet for the color and width placed as listed in the bid form.

Basis of Payment: If a payment item is listed on the Bid Form for work required under this Technical Provision, payment shall as specified in the Bid Form.

The Contract price of the various payment items shall be full compensation for all work specified in this Technical Provision including: cleaning and preparing surfaces, materials, application, curing/protecting all items, protection from traffic, furnishing tools, machines and equipment, and all incidentals needed to complete the work.

When the work described as included in the work of this Technical Provision is not specifically listed on the Bid Form the cost of performing that work shall be included in the contract unit prices for the various items of work to which it is incidental.

No compensation as a part of this technical provision will be provided for temporary traffic stripes needed for temporary control of traffic prior to final striping.

End of TP-101
EXHIBIT "2"

Payment and Performance Bond

Consisting of 3 Pages
April 23, 2020

City of Port Orange, Florida
1000 City Center Circle
Port Orange, FL 32129-4144

RE: AUTHORITY TO DATE BONDS AND POWERS OF ATTORNEY
Principal: Masci General Contractor, Inc.
Bond No: SU 1105756
Project: ITB 19-35, Citywide Paving Program (Milling and Paving)

Dear Sir or Madam:

Please be advised that as Surety on the above referenced bond, executed on your behalf for this project, we hereby authorize you to insert the contract date onto the contract bonds and powers of attorney.

Once dated, please email to me at lisa@floridasuretybonds.com or fax a copy of the bonds to our office at (407) 786-7766.

Sincerely,
Arch Insurance Company

Lisa Roseland
Attorney-In-Fact and
FL Licensed Resident Agent
PAYMENT AND PERFORMANCE BOND
(Public Works)
Notice and Time Limitations Must Be in Accordance
With Section 255.05(2), (6) and (10), Florida Statutes

BOND NO. SU 1105756
Executed in 2 Counterparts

PRINCIPAL:
Developer or Contractor: Masci General Contractor, Inc.
Principal Business Address: 5752 South Ridgewood Avenue
                        Port Orange, Florida 32127
Contact Person: Leonel Masci, President
Phone Number: (386) 322-4500

SURETY:
Address: Arch Insurance Company
Harborside 3, 210 Hudson St., #300
Jersey City, NJ 07311-1107; (201) 743-4000
Contact Person: Kim E. Niv
Phone Number: Inquiries: (407) 786-7770

OWNER:
City of Port Orange, Florida, a chartered municipal corporation
1000 City Center Circle
Port Orange, Florida 32129-4144
Contact Person: City Manager
Phone Number: (386) 506-5501

Amount: $800,000.00  City Project Number: ITB 19-35 Citywide Paving Program
Description of Work: Citywide Paving Program
Project Location: Various locations in and around Port Orange, Volusia County, Florida
Legal Description: Locations within City of Port Orange, Volusia County, Florida

Front Page

All other pages are subsequent to this page regardless of any numbers that may be printed thereon.
Masci General Contractor, Inc.

ITB 19-35 Citywide Paving Program

Bond No. SU 1105756
Executed in 2 Counterparts

COMBINATION PAYMENT AND PERFORMANCE BOND
FOR
PUBLIC CONSTRUCTION
per Section 255.05, Florida Statutes
Guaranty for Construction of Public Improvements

BY THIS BOND, We, Masci General Contractor, Inc., as Principal, and Arch Insurance Company, a corporation, as Surety, are bound to City of Port Orange, Florida, a Florida municipal corporation, herein called "Owner" or sometimes referred to as "City," in the sum of Eight Hundred Thousand and 00/100 Dollars ($800,000.00), for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the terms of that certain Standard Contract for Services, having an effective date of ________________, entered into by and between the Principal and the City, for Citywide Paving Program, hereinafter referred to as the "Contract," being made a part of this bond by reference, at the times and in the manner prescribed in the Contract; and

2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the Contract (the "Work"); and

3. Pays Owner all losses, damages, delay damages (including contractually authorized liquidated damages), expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a breach or material breach by Principal under the Contract documents; and

4. Performs the guarantee of all work and materials furnished under the Contract for the time specified in the Contract, then this bond is void; otherwise it remains in full force.

Notice of Nonpayment and Time Limitations

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Sections 255.05(2), (8) and (10), Florida Statutes.

Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes does not affect Surety's obligation under this bond.
IN WITNESS WHEREOF, this performance and payment bond is executed and shall be deemed an original, this ______ day of __________________, 2020.

Attest:

MASCI GENERAL CONTRACTOR, INC.
(Principal)

By:
Leonal Masci, President
(Corporate Seal)

Arch Insurance Company
(Surety)

By: Lisa Roseland
Name: Lisa Roseland
(Attorney-in-Fact) and Florida Licensed Resident Agent
Inquiries: (407) 786-7770
(Corporate Seal)

(Witness to Principal)
(Witness to Surety)

Coralise Medal

NOTE: Date of BOND must not be prior to date of Contract. If Developer/Principal is Partnership, all partners should execute BOND. All BONDS signed by an agent must be accompanied by a certified copy of the authority to act.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Florida.
THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON BLUE BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated. Not valid for Note, Loan, Letter of Credit, Currency Rate, Interest Rate or Residential Value Guarantees.

POWER OF ATTORNEY

Know All Persons By These Presents:

That the Arch Insurance Company, a corporation organized and existing under the laws of the State of Missouri, having its principal administrative office in Jersey City, New Jersey (hereinafter referred to as the “Company”) does hereby appoint:

Cheryl Foley, Gloria A. Richards, Jeffrey W. Reich, Kim E. Niv, Lisa Roseland, Robert P. O’Linn, Sarah K. O’Linn, Susan L. Reich and Ternis R. Durham of Mailand, FL (EACH)

...true and lawful Attorney(s)-in-Fact, to make, execute, seal, and deliver from the date of issuance of this power for and on its behalf as surety, and as its act and deed.

Any and all bonds, undertakings, recognizances and other surety obligations, in the penal sum not exceeding Ninety Million Dollars ($90,000,000.00).

This authority does not permit the same obligation to be split into two or more bonds in order to bring each such bond within the dollar limit of authority as set forth herein.

The execution of such bonds, undertakings, recognizances and other surety obligations in pursuance of these presents shall be as binding upon the said Company as fully and amply to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal administrative office in Jersey City, New Jersey.

This Power of Attorney is executed by authority of resolutions adopted by unanimous consent of the Board of Directors of the Company on September 15, 2011, true and accurate copies of which are hereinafter set forth and are hereby certified to by the undersigned Secretary as being in full force and effect.

"VOTED, That the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointed designee in writing and filed with the Secretary, or the Secretary shall have the power and authority to appoint agents and attorneys-in-fact, and to authorize them subject to the limitations set forth in their respective powers of attorney, to execute on behalf of the Company, and attach the seal of the Company thereto, bonds, undertakings, recognizances and other surety obligations obligatory in the nature thereof, and any such officers of the Company may appoint agents for acceptance of process."

This Power of Attorney is signed, sealed and certified by facsimile under and by authority of the following resolution adopted by the unanimous consent of the Board of Directors of the Company on September 15, 2011:

VOTED, That the signature of the Chairman of the Board, the President, or the Executive Vice President, or any Senior Vice President, of the Surety Business Division, or their appointed designee in writing and filed with the Secretary, and the signature of the Secretary, the seal of the Company, and certifications by the Secretary, may be affixed by facsimile on any power of attorney or bond executed pursuant to the resolution adopted by the Board of Directors on September 15, 2011, and any such power so executed, sealed and certified with respect to any bond or undertaking to which it is attached, shall continue to be valid and binding upon the Company.
I affirm that an employee leasing company provides my workers' compensation coverage. I further understand that my contract with the employee leasing company limits my workers' compensation coverage to enrolled worksite employees only. My leasing arrangement does not cover un-enrolled worksite employees, independent contractors, uninsured sub-contractors or casual labor exposure.

I hereby certify that 100% of my worksite employees are covered by the employee leasing company. I certify that I do not hire any casual or uninsured labor outside the employee leasing arrangement. I agree to notify the City in the event that I have any workers not covered by the employee leasing workers' compensation policy. In the event that I have any workers not subject to the employee leasing arrangement, I agree to obtain a separate workers' compensation policy to cover these workers. I further agree to provide the City with a certificate of insurance providing proof of workers' compensation coverage prior to these workers entering any City jobsite.

I further agree to notify the City if my employee leasing arrangement terminates with the employee leasing company and I understand that I am required to furnish proof of replacement workers' compensation coverage prior to the termination of the employee leasing arrangement.

I certify that I have workers' compensation coverage for all of my worksite employees through the employee leasing arrangement specified below:

Name of Employee Leasing Company: ________________________________

Workers' Compensation Carrier: ________________________________

A.M. Best Rating of Carrier: ________________________________

Inception Date of Leasing Arrangement: ________________________________

I further agree to notify the City in the event that I switch employee-leasing companies. I recognize that I have an obligation to supply an updated workers' compensation certificate to the City that documents the change of carrier.

Name of Contractor: ________________________________

Signature of Owner/Officer: ________________________________

Title: ________________________________ Date: ________________________________

STATE OF ________________________________
COUNTY OF ________________________________

The foregoing instrument was acknowledged before me by means of ______ physical presence or ______ online notarization, this ______ day of ________, 20____, by _________, as _________ of ________________, a _________ corporation. He/She is ______ personally known or ______ produced _________ as identification.

Notary Public, State of ________________________________
Printed, typed or stamped name, commission and expiration:
CERTIFICATE OF LIABILITY INSURANCE

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not affirmatively or negatively amend, extend or alter the coverage afforded by the policies below. This certificate of insurance does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder.

Important: If the certificate holder is an additional insured, the policy(ies) must have additional insured provisions or endorsements. If subrogation is waived, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsements.

11470 N 33rd St
Tampa Terrace, FL 33617

Insured: Mosci General Contractor Inc
3752 S Ridgewood Ave
Port Orange, FL 32127

Contact:
Phone: (813) 988-1234
Fax: (813) 988-0989
Email: cert@associatesins.com

INURED AFFORDING COVERAGE:
INURED A: Liberty Mutual Fire Insurance Company 23035
INURED B: Liberty Insurance Corporation 42404
INURED C: National Union Fire Insurance Co of Pittsburgh PA 19445
INURED D: Ironshore Specialty Insurance Co 25445

COVERAGES

This is to certify that the policies of insurance listed below have been issued to the insured named above for the policy period indicated. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies. Limits shown may have been reduced by paid claims.

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<th>TYPE OF INSURANCE</th>
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<td>EBU015060020S</td>
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<td>WC2-Z51-292487-019</td>
<td>8/8/2019</td>
<td>8/8/2020</td>
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|      |                        |               |            |            | 4,000,000 |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES [ACORD 101]: Additional Remarks Schedule, may be attached if more space is required.

Project: ITB 18-35 FY 2020 Paving Program

City of Port Orange is Additional Insured with respect to General Liability when required by written contract.

Certificate Holder:
City of Port Orange
1000 City Center Circle
Port Orange, FL 32129

Cancellation:

Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

Authorized Representative:

ACORD 25 (2016/03)
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CITY OF PORT ORANGE, FLORIDA

INVITATION TO BID

CITYWIDE PAVING PROGRAM

ITB #19-35

City of Port Orange Purchasing Division

Prepared by: Michael Hall, Buyer
Release Date: December 20, 2019

Bid Due Date and Time: January 31, 2020 at 2:30 P.M.

City of Port Orange, Florida
1000 City Center Circle
Port Orange, FL, 32129
(386) 506-5740
purchdiv@port-orange.org
www.port-orange.org
Legal Notice to Proposers

ITB #19-35
CITY WIDE PAVING PROGRAM

Notice is hereby given that the City of Port Orange is soliciting bids for ITB #19-35 CITYWIDE PAVING PROGRAM. Bids will be accepted in the City Clerk’s Office, Port Orange City Hall, 1000 City Center Circle, Port Orange, Florida 32129 until 2:30 P.M. on January 31, 2020 which may be amended by addendum issued by the City. All untimely Bids will not be considered and will be returned to the Bidder unopened. All Bids will be evaluated to ensure they contain all required forms in order to deem the Bidder responsive or non-responsive. **Bids will be opened and read aloud at 2:30 P.M. in Council Chambers.**

There will be a Non-Mandatory Pre-Bid Conference for the project at 10:00 A.M. (local time) on January 10, 2020 at City Hall, Council Chambers (1st floor), 1000 City Center Circle, Port Orange, Florida 32129. All attendees to the Pre-Bid Conference must sign in. The representative of each Bidder shall be an authorized employee of the Bidder and shall sign in accordingly. Bidders are urged to obtain Bid documents and familiarize themselves with the documents prior to the Pre-Bid meeting.

A Bid Guarantee in the form of a Bid Bond executed by the Bidder and an acceptable surety or a certified check or bank draft payable to the City of Port Orange, Florida in an amount equal to five percent (5%) of the proposed bid shall be submitted with each submission.

**DESCRIPTION:** *The City of Port Orange is soliciting sealed Bids for installation, replacement, and repair of existing roads and pavement structures, including sidewalks, driveway aprons, curbs, gutters, and bike paths.*

All Bids are solicited and shall be made pursuant to the Code of Ordinances, City of Port Orange, Chapter 2, Article VI, Division 2, Section 2-256, and all Bids will be evaluated in accordance with the provisions thereof. Code of Ordinances, City of Port Orange is on file in the Office of the City Clerk, City Hall, 1000 City Center Circle, Port Orange, Florida 32129, and at www.municode.com. Local vendors may be given a local preference pursuant to the Code of Ordinances, City of Port Orange, Chapter 2, Article VI, Division 2, Section 2-275.

**All Bidders must be a commercial contractor entity licensed to do business in the State of Florida and perform the services identified herein and properly registered and licensed to provide the goods or services identified in the scope of work, by all applicable state and local agencies.**

Copies of the Bid documents, requirements, the scope of service and all other pertinent information necessary to submit a complete package may be obtained electronically from the City of Port Orange website at www.port-orange.org/bids.aspx and (DemandStar) via their website at www.demandstar.com. All questions shall be directed in writing to the Buyer, Michael Hall, mhall@port-orange.org or purchdv@port-orange.org and reference “Questions on ITB# 19-35 CITYWIDE PAVING PROGRAM” in the subject line. Last day for questions will be January 17, 2020 at 5:00 P.M.

All Bidders are required to complete and submit a Public Entity Crime Statement, the Anti-Collusion Statement, and Drug-Free Tie Proposal Preference Statement, as well as other documents as required by the solicitation.

**NO** bid shall be withdrawn for a period of ninety (90) days subsequent to the bid opening without the consent of the City of Port Orange, Florida. Upon award, the successful bidder will also be required to furnish and pay for a satisfactory contract one hundred percent (100%) Payment and Performance Bond to be recorded by the City, with the Clerk of the Circuit Court, Volusia County, Florida and to enter into a contract for services with the City of Port Orange.
No Bids received after the time and date specified for the opening will be considered. The City of Port Orange, Florida reserves the right to reject any and all Bids, to waive any and all non-substantial irregularity in Bids received, whenever such waiver or rejection is in the best interest of the City.

Bids shall be submitted to the City Clerk's office with one (1) original addressed to Michael Hall, Buyer, Finance Department, City Hall, 1000 City Center Circle, Port Orange, Florida, 32129 in a SEALED ENVELOPE/PACKAGE plainly marked on the outside: “ITB# 19-35 CITYWIDE PAVING PROGRAM”.

Michael Hall, Buyer
Legal Ad - One Time – December 20, 2019

[Remainder of this page left intentionally blank]
Cut along the outer border and affix this label to the outside of your sealed bid envelope/package to identify it as a "Sealed Bid". Be sure to include the name of the company submitting the bid where requested.

<table>
<thead>
<tr>
<th>SEALED BID NO.</th>
<th>ITB #19-35</th>
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</thead>
<tbody>
<tr>
<td>BID TITLE:</td>
<td>CITYWIDE PAVING PROGRAM</td>
</tr>
<tr>
<td>DUE DATE/TIME:</td>
<td>January 31, 2020 @ 2:30 P.M.</td>
</tr>
<tr>
<td>SUBMITTED BY:</td>
<td>(Name of Company)</td>
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</tbody>
</table>
| DELIVER TO:    | City of Port Orange  
| | City Clerk's Office  
| | Attn: Michael Hall  
| | Buyer  
| | Finance Department  
| | 1000 City Center Circle  
| | Port Orange, Florida, 32129 |
| DATE/TIME RECEIVED: | (To be stamped by Clerk's Office) |
Contents

SECTION 1 – PURPOSE AND OVERVIEW ........................................................................................................ 6
SECTION 2 – INSTRUCTIONS TO BIDDERS ................................................................................................. 7
SECTION 3 – SCOPE OF WORK ....................................................................................................................... 11
SECTION 4 – STANDARD PURCHASE DEFINITIONS .................................................................................... 83
SECTION 5 – GENERAL TERMS AND CONDITIONS .................................................................................. 86
SECTION 6 – SPECIAL CONDITIONS ............................................................................................................. 111
SECTION 7 – REQUIRED FORMS ................................................................................................................ 112
FORM 7.1 – BID SUBMITAL CHECKLIST ..................................................................................................... 112
FORM 7.2 – VENDOR'S ACKNOWLEDGEMENT FORM ............................................................................. 113
FORM 7.3 – ADDENDUM AND CHANGE ORDER PROCEDURE ACKNOWLEDGEMENT .................... 114
FORM 7.4 – DRUG-FREE PREFERENCE STATEMENT ............................................................................... 115
FORM 7.5 – SWEORN STATEMENT UNDER SECTION 287.133(3)(A), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES .................................................................................................................. 116
FORM 7.6 – ANTI-COLLUSION FORM .......................................................................................................... 117
FORM 7.7 – STATEMENT OF VENDOR'S QUALIFICATIONS .................................................................... 118
FORM 7.8 – PROFESSIONAL REFERENCES FOR PREVIOUS EXPERIENCE ........................................ 119
FORM 7.9 – LISTING OF SUBCONTRACTORS ............................................................................................ 121
FORM 7.10 – LOCAL BUSINESS AFFIDAVIT OF ELIGIBILITY ................................................................ 122
BID COST/FEES PROPOSAL ...................................................................................................................... 123
BID BOND .................................................................................................................................................. 124
PAYMENT & PERFORMANCE BOND ....................................................................................................... 126
STANDARD CITY OF PORT ORANGE CONTRACT DOCUMENTS (FOR INFORMATIONAL PURPOSES ONLY) 129
SECTION 1 – PURPOSE AND OVERVIEW

The City of Port Orange is soliciting sealed bids for installation, replacement, and repair of existing roads and pavement structures, including sidewalks, driveway aprons, curbs, gutters, and bike paths.

It is the intent and purpose of the City of Port Orange (City) that this Invitation to Bid promotes competitive selection. It shall be the Bidder’s responsibility to advise the Purchasing Division if any language, requirements, etc., or any combination thereof, inadvertently restricts or limits the requirements stated in this ITB to a single source.

[Remainder of this page left intentionally blank]
SECTION 2 – INSTRUCTIONS TO BIDDERS

Firms or companies (Vendor) desiring to provide services, as described herein shall submit sealed bids, to including one original copy in conformance with the detailed submittal instructions.

TIMELINE (Local Time):

*The City reserves the right to alter dates as needed.*

Date of Distribution: .................................................................December 20, 2019
Non-Mandatory Pre-Bid Conference ....................................................January 10, 2020 at 10:00 A.M.
Deadline for Questions: ..................................................................January 17, 2020 by 5:00 P.M.
Final Addendum Posting: .................................................................January 24, 2020 by 5:00 P.M.
**Bids Due:** .................................................................................January 31, 2020 by 2:30 P.M.
City Council Meeting for Approval of Recommendation of Award .................To Be Determined

Bids must be delivered in a sealed envelope/package and delivered to:

City of Port Orange City Clerk’s Office
Attn: Michael Hall, Buyer
Finance Department
1000 City Center Circle
Port Orange, Florida, 32129

Sealed Bids must be delivered **no later** than the date and time listed in the Timeline above. All times referenced are local time.

Bids shall be sealed and Vendors shall clearly indicate on the outside of their bid the following:

a) Invitation to Bid (ITB) Number and Title
b) Date of Opening
c) Name of Vendor
d) Address of Vendor

Due to the timing of mail service, the City cautions Vendors to assure actual delivery of Bids to the City prior to the deadline set for receiving bids. Carrier and hand deliveries of bids will be accepted in the City Clerk’s Office, Port Orange City Hall, 1000 City Center Circle, Port Orange, Florida, 32129 until the date and time referenced in the Timeline above or as amended by addendum issued by the City. Bids received after the established deadline shall not be considered.

Vendors are cautioned that they are responsible for delivery to the specific location cited above. Therefore, if your bid, proposal, statement or quotation is delivered by an express mail carrier or by any other means, it is your responsibility to ensure delivery to the above address. This office will not be responsible for deliveries made to any place other than the specified address.

Offers by telephone, email or telegram shall not be accepted. Also, Vendors are instructed NOT to fax their bid package. **Faxed bids shall be rejected as non-responsive regardless of where or when the fax is received.**

All Bids will be opened publicly, and the names of all Vendors shall be read aloud. All conferences and meetings regarding this ITB are recorded electronically (audio only).

The City of Port Orange reserves the right to reject any or all Bids or parts of Bids if it is in the best interest of the City.
NON-MANDATORY PRE-BID CONFERENCE:
There will be a Non-Mandatory Pre-Bid Conference for the project on the date and time referenced in the Timeline above at City Hall, Council Chambers (1st Floor), 1000 City Center Circle, Port Orange, Florida 32129. All attendees to the Non-Mandatory Pre-Bid Conference must sign in. The representative of each Vendor shall be an authorized employee of the Vendor and shall sign in accordingly.

QUESTIONS REGARDING THIS ITB:
All questions shall reference ITB #19-35 “CITYWIDE PAVING PROGRAM” in the subject line. All questions concerning this ITB shall be submitted in writing no later than the date and time referenced in the Timeline above to:

Michael Hall
Buyer
1000 City Center Circle
Port Orange, Fl, 32129
mhall@port-orange.org or
purchdiv@port-orange.org

ADDENDA REGARDING THE INVITATION TO BID:
The City will issue responses to inquiries and any other corrections or amendments it deems necessary in written addenda issued prior to the Bid Due Date. Vendors should not rely on any representations, statements or explanations other than those made in this ITB or in any addendum to this ITB. Where there appears to be a conflict between the ITB and any addenda issued, the last addendum issued will prevail. It is the Vendor’s responsibility to be sure all correct number of addenda was received. The Vendor should verify with the designated contact persons prior to submitting a Bid that all addenda have been received. Vendors should acknowledge the correct number of addenda received as part of their Bids. It is the responsibility of the Vendor to ensure all addenda have been received prior to submitting bid.

Written responses, in the form of an addendum, will be provided via the City website www.port-orange.org/bids.aspx and Demand Star websites. www.demandstar.com.

The city of Port Orange reserves the right to consider the omission of an acknowledgment of addendum as cause for rejection of the ITB submittal.

This provision exists solely for the convenience and administrative efficiency of the City of Port Orange. No Vendor or other third party gains any rights by virtue of this provision or the application thereof, nor shall any Vendor or third party have any standing to sue or cause of action arising therefrom.

CLARIFICATIONS:
It is the Vendor’s responsibility to become familiar with and fully informed regarding the terms, conditions and specifications of this ITB. Lack of understanding and/or misinterpretation of any portions of this ITB shall not be cause for withdrawal of your Bid after opening or for subsequent protest of award. Vendors must contact the Purchasing Representative, at the email provided, should clarification be required.

Modification or alteration of the documents contained in the solicitation or contract shall only be valid if mutually agreed to in writing by the parties.

MINIMUM QUALIFICATIONS:
Vendors shall be licensed to do business in the State of Florida. Submit Sunbiz report showing your company registered as “Active”. Vendors must be properly registered and licensed to provide the goods or services identified in the scope of work, by all applicable state and local agencies.
All Bidders must be a commercial contractor entity licensed to do business in the State of Florida and perform the services identified herein and properly registered and licensed to provide the goods or services identified in the scope of work, by all applicable state and local agencies.

Vendors must provide a minimum of three (3) verifiable references from similar scope and size of work as identified in this ITB on the provided “Professional References” form. Failure to provide references that verify required experience will cause the Vendor to be deemed non-responsive. The City of Port Orange is not to be used as a reference.

NO LOBBYING:

All Vendors are hereby placed on notice that the City of Port Orange Council, City Employees/Staff, nor Members of the Evaluation Committee (with the exception of the City of Port Orange Purchasing Division personnel designated to receive requests for interpretations or corrections) are not to be lobbied, directly or indirectly either individually or collectively, regarding this ITB. During the entire procurement process, all Vendors and their subcontractors, sub-consultants, or agents are hereby placed on notice that they are not to contact any persons listed above for such purposes as holding meetings of introduction, dinners, etc. if they intend to submit or have submitted Bids for this project. Any Vendor contacting individuals mentioned herein in violation of this warning may automatically be disqualified from further consideration for this ITB.

PRICING SHEETS:

Pricing sheets/Bid Forms are to be completed as directed and without modification and returned as part of the ITB submittal prior to the ITB deadline for submission. Failure to fill out the price sheets/bid forms as directed and without modification may negatively affect the evaluation of your bid.

EXCEPTIONS TO SPECIFICATIONS:

If taking exception to any portion of the ITB specifications, the Vendor must indicate those exceptions as stated on the Vendor’s Acknowledgement Form.

BID SUBMISSION AND WITHDRAWAL:

Unless otherwise specified, Vendor shall use the forms supplied by the Purchasing Division. Bids, once opened, become the property of the City, cannot be withdrawn, and will not be returned to the Vendors. Upon opening, Bids become subject to public disclosure in accordance with Chapter 119, Florida Statutes.

CORRECTION OF BIDS:

Correction of inadvertently erroneous Bids shall be permitted up to the time of ITB opening. Vendors shall not be allowed to modify their Bids after the opening time and date.

WITHDRAWAL OF BIDS:

NO Bid shall be withdrawn for a period of ninety (90) days subsequent to the Bid opening without the consent of the City of Port Orange, Florida. Negligence on the part of the Vendor in preparing the Bid confers no right of withdrawal or modification after the Bid has been opened, at the appointed time and place by the City of Port Orange. Any such withdrawn Bid shall not be resubmitted.

OPENING OF BIDS:

Bids will be received until the date and time stated in this ITB and will be publicly opened and read at the place, time and date stated. No responsibility will attach the Purchasing Department for the premature opening of a Bid not properly addressed and identified.

LITIGATION HISTORY:

The City will consider a Vendor’s litigation history information in its review and determination of responsibility. All Vendors are required to disclose to the City all “material” cases filed, pending, or
resolved during the last five (5) years prior to the solicitation response due date, whether such cases were brought by or against the Vendor, any parent or subsidiary of the Vendor, or any predecessor organization. If the Vendor is a joint venture, the information provided should encompass the joint venture (if it is not newly-formed for purposes of responding to the solicitation) and each of the entities forming the joint venture. Although the review of a Vendor's litigation history is an issue of responsibility, the failure to provide litigation history as required in the Evaluation Criteria may result in a recommendation of non-responsive by the Purchasing Manager.

DEBARMENT HISTORY:

The City will consider a Vendor's debarment history information in its review and determination of responsibility. All Vendors are required to disclose to the City all cases of debarment filed, pending, or resolved by the City or other public entity during the last five (5) years prior to the solicitation response due date, whether such actions were brought by or against the Vendor, any parent or subsidiary of the Vendor, or any predecessor organization. If the Vendor is a joint venture, the information provided should encompass the joint venture (if it is not newly-formed for purposes of responding to the solicitation) and each of the entities forming the joint venture. Although the review of a Vendor’s debarment history is an issue of responsibility, the failure to provide debarment history as required in the Proposal Submittal and Requirements Section may result in a recommendation of non-responsive by the Purchasing Manager.

REJECTION OF BIDS:

The City reserves the right to reject any and/or all Bids when such rejection is in the best interest of the City.

BIDS MAY BE REJECTED AND/OR VENDOR(S) DISQUALIFIED FOR THE FOLLOWING REASONS:

(a) Failure to update the information on file including address, product, service or business descriptions.

(b) Failure to perform according to contract provisions.

(c) Conviction in a court of law of any criminal offense in connection with the conductor business.

(d) Evidence of a violation of any federal or state antitrust law based on the submission of bids or proposals, or the awarding of contracts.

(e) Evidence that the vendor has attempted to give a Board employee a gratuity of any kind for the purpose of influencing a recommendation or decision in connection with any part of the Board’s purchasing activity.

(f) Other reasons deemed appropriate by the City.

OWNERSHIP OF DOCUMENTS:

All documents resulting from this project will become the sole property of the City of Port Orange. The Vendor must meet all requirements for retaining public records and transfer, at no cost, to the City all public records in the possession of the Vendor upon termination of this Agreement and destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the City in a format that is compatible with the information technology systems of the City.

AMERICANS WITH DISABILITIES ACT (ADA):

If you need special services provided for under the Americans with Disabilities Act, contact the ADA Coordinator in our Human Resources office at 386-506-5560 at least 48 hours before the scheduled event.
SECTION 3 – SCOPE OF WORK

ATTACHMENT “A”

TECHNICAL PROVISION TP-101

MOBILIZATION

The work specified in this Technical Provision consists of the preparatory work and operations in mobilizing for beginning work on the project and shall conform with the requirements of Section 101 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction latest edition except as amended hereinafter.

Perform preparatory work and operations in mobilizing for beginning work on the project including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site and for the preparation and posting of homeowner notifications, establishment of temporary offices, buildings, safety equipment and first aid supplies, and sanitary and other facilities. This item shall not include ongoing cost for above items.

Include the costs of all required permits, including the National Pollutant Discharge Elimination System permit, and any preconstruction expense necessary for the start of the work, excluding the cost of construction materials.

Pre-Construction Conference: A Pre-Construction Meeting will be held at a location selected by the City to verify and agree on the square yardage of the project prior to beginning work on any assigned task. Names and phone numbers of key personnel of both Contractor and Owner shall be exchanged at the Pre-Construction Meeting. An anticipated schedule for completion of the work, including an adequate breakdown of tasks for each roadway included in the assignment shall be provided to the owner for review and approval at the Pre-Construction meeting. Any necessary updates to emergency contacts information shall be exchanged promptly, throughout the construction period. All required paperwork must be submitted at or before the Pre-Construction Meeting and notices to businesses and residences as required in TP-102 shall be submitted for review and approval. Attendees must include, at minimum, the project superintendent and on-site foreman, the project inspector and other key personnel as may be needed for proper understanding of the project.

Method of Measurement: A pay item for Mobilization is listed in the bid form for work specified in this technical provision. Unit of measure for Mobilization will be each mobilization for each separate process. All work of a particular type per Task Authorization shall be completed with one mobilization fee. No separate mobilization will be considered for work defined above on the same Task Authorization when mobilization was measured on the same type of work previously.

Basis of Payment: Payment will be Each, as listed on the bid form for mobilization as measured above.

TECHNICAL PROVISION TP 102

MAINTENANCE OF TRAFFIC (MOT) AND DUST ABATEMENT

The work specified in this Technical Provision consists of maintaining traffic within the project limits during the entire construction period and shall comply with the requirements of Section 102 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction latest edition, the Florida Department of Transportation Roadway and Traffic Design Standards latest edition, Index 600 series and 700 series, Florida Department of Transportation’s Plans Preparation

The Contractor’s work shall include any temporary suspensions of work, preparing approved traffic control plans, providing facilities, devices, and operations as required for access to residences and businesses along the project and for the safety and convenience of the public and to minimize public nuisance, installing, and maintaining traffic control markings, signs, and safety devices, and any other special requirements for safe and expeditious movement of traffic in the project area and other impacted areas as specified herein.

Regardless of the MOT standards and specific traffic control plan used, it shall be the Contractor’s responsibility to maintain the work zone in a safe condition.

Work Zone Traffic Supervisor: The Contractor shall provide, at no additional cost to the City, a Work Zone Traffic Supervisor who has successfully completed advanced training in Maintenance of Traffic, and in general conformance to Section 5-8.4 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition. The Contractor shall provide a copy of the Work Zone Traffic Supervisor’s training certification at the preconstruction conference. The Maintenance of Traffic Plan shall be installed, maintained and removed under the direct supervision of an individual who has successfully completed intermediate or advanced training in Maintenance of Traffic.

Traffic Control Plan: Preparing detailed work zone traffic control plans for the Engineer’s approval is included in this Technical Provision. The plans prepared shall indicate a traffic control plan for each phase of the Contractor’s activities. The Contractor may not begin work until a traffic control plan is approved in writing by the City. Traffic control plans modifications require the City’s written approval. Except in an emergency, no changes to the approved plan are allowed until written approval is received. The approved traffic control plan shall be available on site at all times.

Maintenance of Detours: The Contractor shall repair, at his expense, all potholes and other localized failures on streets used as detour routes and haul roads to simplify construction operations.

Replacement of Traffic and Street Signs: The Contractor shall re-erect all existing traffic and street signs within the project site moved or relocated during construction.

Replacement of Striping and Traffic Markings: The contractor shall replace, upon completion of the work, all traffic stripes and pavement marks in their original locations unless directed otherwise by the City. Painted traffic stripes and markings are acceptable as detailed in these Technical Provisions.

Specific Requirements: The work and payments for MOT includes the following:

1. All existing roads will be kept open to two-way traffic during construction, except where otherwise approved in the MOT plan. The Contractor will maintain one lane of traffic minimum in each direction (each lane 11-foot wide minimum) at all times by using existing or constructing temporary pavement.
2. Temporary pavement will consist of six-inch thick suitable base and one-inch thick asphalt concrete surface.
3. Construction of major side streets should be phased similarly to maintain one lane of traffic in each direction (each lane 11-foot wide minimum) at all times by using existing or constructing temporary pavement.
4. The Contractor shall remove any existing striping conflicting with MOT during construction and provide adequate signing and/or striping.

5. Alternate access shall be provided to all residences and businesses whenever construction interferes with the existing means of access. The Contractor is not permitted to isolate residences or businesses.

6. Major intersections shall have through movements maintained at all times during construction except during short periods of time approved by the City Engineer’s Representative.

7. Traffic shall be maintained on paved, dust free surfaces at all times.

8. The Contractor is responsible for establishing a work schedule so that any location under construction will not be left in hazardous condition at the completion of any work period.

9. When construction activities require flagmen for traffic control, the Contractor will employ the appropriate number of trained, competent flagmen, and will provide them with appropriate equipment in good condition.

10. Temporary approaches or crossings and intersections with trails, roads, streets, businesses, parking lots, residences, and garages will be provided and maintained in a safe condition by the Contractor. The Contractor shall take precautions to protect the work and the safety of the public.

11. All homeowners, residents and businesses affected by the construction shall be notified five (5) days in advance of the work and suitable signs shall be posted at each end of the project limits. Unsecured notices will not be allowed. The contractor shall also place the notice on the windshield of any parked cars on the street. Should work not occur on the specified day, a new notification shall be distributed. The notification shall state the time and date that the work will take place, a current phone number of the contractor’s on-site supervisor and a brief description of work being performed. The contractor will be responsible for contacting local affected waste collection companies, United States Mail Carriers, United Parcel Services, Police and Law Enforcement, City/County and Municipal Fire Services etc. ahead of time to notify of the day that work is planned and how it may affect their operations. The City shall be notified in time to allow posting to social media. Failure to do so will result in delay of the operations.

12. Driveway blockage during construction shall be consciously minimized so as to reduce inconvenience to local residence. In no case shall a driveway be blocked without prior knowledge of the home or business owner or tenant.

13. Cleanup shall be performed each day at close of the work day to ensure no trash, debris or loose asphalt are remaining. A complete cleanup of the job site shall be performed within three (3) business days. To include replacement of damaged sod, irrigation, mailboxes, and driveway aprons.

Dust Abatement:

**General:** Dust abatement shall consist of applying, when ordered, water or dust palliative for abatement of dust nuisance originating within the project limits. The methods, materials, and procedures for dust abatement shall be subject to approval by the City Engineer. Dust abatement operations shall be performed by the Contractor at the time, location, and in the amount ordered by the City Engineer. Dust abatement operations shall be on-call for operation on a 12-hour per day, seven- day per week basis as necessary.

**Water:** Water used for dust control shall be furnished and applied by means of vehicle-mounted tanks equipped with suitable sprinkling devices and in the quantities ordered by the City Engineer.
The water used for dust abatement may be obtained from any approved pond, lake, stream, or municipal water system. The water shall be free of excess silt, excess and harmful chemicals, acids, alkalis, or any substance which might be obnoxious to traffic or might be harmful to plant growth. Salt water shall not be used.

**Vehicle for Application:** The vehicle for applying water for dust abatement shall be equipped with an approved metering device, installed at such point on the vehicle as to measure the water at the time of its application. The vehicle may be equipped with a calibrated tank when approved by the City.

**Method of Measurement:**
No pay item is listed on the Bid Form for work required in this Technical Provision. The quantity to be paid shall be included in the quantities measured for which items as listed in this Technical Provision are incidental. This includes all items of work described herein and in Section 102 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction. These items include but are not limited to driveway maintenance, temporary pavement marking, temporary signing, barricades and flagmen.

**Basis of Payment:**
The quantities to be paid for under this Technical Provision shall be included in the Unit Prices for work to which it is incidental, for instance Microsurfacing (Single application) or Painted Traffic Stripe. The unit prices include all work listed in their respective Technical Provision plus items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions, including all items of work described herein, in the plans, and in Section 102 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

**TECHNICAL PROVISION**

**TP-271**

**FULL DEPTH RECLAMATION WITH PORTLAND CEMENT**

This work shall consist of the preparation of a stabilized base course composed of a mixture of the existing bituminous concrete pavement, existing base course material and cement and other additives. The manufacture of the stabilized base course shall be done by in-place pulverizing and blending of the existing pavement and base materials, and the introduction of cement or additives if called for in the Special Conditions. The process which results in a stabilized base course, shall be accomplished in accordance with these specifications and conform to the lines and grades established by the engineer.

Existing asphalt pavement shall be pulverized by a method that does not damage the material below the plan depth as shown on the appropriate roadway section.

**Materials:**

**RAP:** Materials must meet all requirements specified in the 2010 Florida Department of Transportation Standard Specifications for Road and Bridge Construction 283-2, except that 98% of all material is required to pass through a 50 mm (2 inch) sieve.

**Additional Base Materials:** Additional base materials may be needed for adjusting grade elevations as directed by the engineer, or for widening. When such additional material is required it shall be among those bases listed in FDOT Design Standards as General Use Optional Base Materials and meet applicable FDOT requirements for such.
Portland Cement: Portland Cement shall be type I or II and conform to the latest standard requirements of ASTM C150 and AASHTO M85, for the type specified.

Water: The water for the base course shall be clean and free from sewage, oil, acid, strong alkaline, or vegetable matter and it shall be in sufficient supply for mixing and curing. Water of questionable quality shall be tested in accordance with the requirements of AASHTO T 26.

Soil: The soil base to be reclaimed shall be evaluated by a professional geotechnical engineering laboratory to determine suitability in the stabilization process. The soil shall be free of roots, sod, weeds, and shall not contain gravel or stone retained on a 1-inch (25 mm) sieve, or more than 45% retained on a No. 4 (4.75 mm) sieve, as determined by ASTM C 136.

Equipment:

Road Reclaimer: Shall be originally designed for pavement reclaiming of a size equal to or larger than a Caterpillar Model RM-350B with comparable specifications including horsepower and rotor size. The reclaimer shall be capable of pulverizing and mixing pavement, base materials, and subgrade soil to depth of 16 inches. It shall have the capability of introducing and metering additives uniformly and accurately and that positive displacement pumps accurately meter the planned amount of water and cement material into the mixture. The reclaiming machine shall mix the cement additive thoroughly with the RAP and soil materials. The pump shall be mechanically or electronically interlocked with the ground speed of the machine. The cement metering system and water metering system shall be capable of continuously monitoring (GPM) flow and totaling the quantity of water and cement applied into the mixing chamber. Additives shall be uniformly distributed and mixed with the pulverized material, any existing underlying material as specified.

Motor Grader: Shall be of sufficient size and horsepower to adequately rough grade the pulverized base and rough and finish grade the mixed and compacted base. The equipment shall be in good working order free from leaks and capable of maintaining an accurate grade and cross-slope.

Rollers: Shall be in good working order free from leaks and capable of compacting the mix to the requirements of this specification: Vibratory rollers shall be a minimum of 10 tons and capable of rolling in either vibratory or static mode. Three-wheel static rollers shall be a minimum of 11 tons. Pneumatic tire rollers shall have a minimum of 9 oscillating wheels with smooth, low pressure tires (pressure shall be equally matched in all tires within 5 PSI) and weigh at least 20 tons. Initial compaction shall be accomplished by either single or dual drum vibratory or three-wheel roller staticrollers.

Cement Delivery Equipment: Apply the cement by use of a mobile cement mixer trailer capable of mixing predetermined ratios of cement and water connected to the reclaimer for introduction into the pulverized base. Alternately, a cyclone, screw-type or pressure-manifold type distributors may be used with a curtain to accurately place the determined amount of cement onto the pulverized base for mixing.

Additional equipment: Additional equipment will be needed to complete the operations required by this technical provision. All equipment necessary for the successful completion of projects governed by this technical provision shall be included in the unit costs associated herein. Availability of quality assurance devices (such as a 15' straight edge) shall be the responsibility of the Contractor.

Construction:

Layout: The Contractor will be responsible for the string lining and lay out of the roadway prior to paving.
Elevations of the existing road must be referenced at sufficient intervals to ensure the roadway elevation is not changed in any location after final surface is placed. Method for layout and line and elevation reference must be approved by the engineer prior to beginning work. It is imperative that roadway elevations remain unchanged except cross slope correction or as approved by the engineer.

**Weather and Seasonal limitations:** The soil-cement base shall not be mixed or placed while the atmospheric temperature is below 35 F (2 C) or when conditions indicate that the temperature may fall below 35 F (2 C) within 24 hours, or when the weather is foggy or rainy, or when the soil or sub grade is frozen.

**Mix Design:** Prior to base course construction, a minimum of one (1) core sample must be taken for every 5,000 square yards of the roadway. Representative samples of the RAP material, underlying base material and virgin materials, where applicable, shall be supplied to a nationally accredited laboratory for preliminary testing to determine the optimum moisture content and proportions of cement needed to produce a finished base course with a mix design target of 300 PSI and a final in place base compressive strength of 200 to 400 PSI. Laboratory tests of material to be reclaimed and virgin materials for use as base shall be performed to determine compliance with 3-day and 7-day minimum compressive strength requirements of the mixture and the quantity of cement required in the mix. Test specimens containing various amounts of cement are to be compacted in accordance with ASTM D558, and the optimum moisture for each amount of cement is to be determined. Actual application quantities for the Portland cement will be derived from the mix design. The minimum compressive strength requirements of the mixture shall be determined by the engineer of record. The mix design and laboratory testing shall be performed by a geotechnical engineering laboratory and all reports sealed by a professional engineer.

**Widening:** When the existing base is to be widened, the Contractor shall excavate the shoulder from the edge of the existing pavement to at least 6 inches beyond the planned new width of the base prior to pulverization. All costs involved in collecting, hauling, and disposing of these materials shall be borne by the Contractor.

The bottom of the trench shall be kept free of loose soil and vegetation. Approved base material (those bases listed in FDOT Design Standards as General Use Optional Base Materials) shall be placed in the excavation uniformly and without loss or contamination. The Contractor shall correct all areas of irregular grade or deficient thickness and shall remove and replace material contaminated with soil, organic material, or debris.

After the final pass of the reclaimer, soil shall be drawn up against the widening material to close the excavation, and the shoulder shall be graded and compacted to produce a firm, even surface.

**Additional Material:** When additional material is to be added to correct cross slope deficiencies or change elevation as directed by the engineer, approved base material (those bases listed in FDOT Design Standards as General Use Optional Base Materials) shall be placed on the roadway prior to final pass for pulverization and mixed uniformly with the existing material.

**Pulverization:** The existing pavement and base material shall be pulverized and blended to the depth required so the entire mass of material shall be uniformly graded to the following gradation:

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<th>SIEVE</th>
<th>PERCENT</th>
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<tr>
<td>2&quot;</td>
<td>98 - 100</td>
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<tr>
<td>1-1/2&quot;</td>
<td>95</td>
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Material gradation may vary due to local aggregates and conditions. Multiple passes of the reclaimer may be necessary to achieve the required gradation.
The cement and water shall be introduced into the mix through the reclaimer uniformly and accurately and metered such that areas are of equal consistency and moisture content. Alternatively, the cement may be introduced by means of a spreader bar with curtain on the cement distributor. Cement shall not be introduced by means of a spreader bar or hose from the cement delivery tanker. The reclaimed material, cement and water shall be combined in place to meet the requirements specified in such proportions that the reclaimed mixture is of acceptable composition and stability. Before the start and at the end of each day’s work and at any time requested, the engineer must be permitted access to the mixing equipment in order to read the meter to verify the quantity of cement applied during the day’s work. Field adjustments shall be made as necessary to the recommended mix design under the guidance of a knowledgeable and competent technician to obtain a satisfactory reclaimed mixture of consistent composition and stability throughout the Project.

After the material has been processed, it shall be compacted to the lines, grades, and depth required. Water may be applied to ensure optimum moisture content at the time of mixing and compaction.

**Compaction:** Commence rolling with self-propelled rollers as required by this technical provision at the low side of the course, except leave 3 to 6 inches from any unsupported edge or edges unrolled initially to prevent distortion. Density readings shall be taken by Contractor’s licensed nuclear gauge operator and witnessed by the Engineer/inspector. A control strip of not less than 500 feet shall be constructed to develop proper rolling/compaction patterns and methods to obtain desired density. Whenever there is a change in the reclaimed material or compaction method, equipment or unacceptable results occur, a new control strip shall be constructed, tested and analyzed.
Rollers shall move at a uniform speed that shall not exceed 8 km/hour (5 miles/hour). For static rollers, the drive drum normally shall be in the forward position or nearest to the paver. Vibratory rollers shall be operated at the speed, frequency and amplitude required to obtain the required density and prevent defects in the mat.

The number, weight and type of rollers furnished shall be sufficient to obtain the required compaction of the reclaimed material. The field density of the compacted mixture shall be at least 95 percent of the maximum density of laboratory specimens prepared from samples of the cement-treated base material taken from the material in place. The specimens shall be compacted in accordance with ASTM D 558. The in-place field density shall be determined in accordance with ASTM D 2922.

Any pavement shaving or other unacceptable displacement shall be corrected. The cause of the displacement shall be determined, and corrective action taken immediately and before continuing rolling.

Care shall be exercised in rolling the edges of the reclaimed mixture, so the line and grade of the edge are maintained.

At the end of each day's production, a transverse construction joint shall be formed by a header or by cutting back into the compacted material to form a true vertical face free of loose material. The protection provided for construction joints shall permit the placing, spreading, and compacting of base material without injury to the work previously laid. Where it is necessary to operate or turn any equipment on the completed base course, sufficient protection and cover shall be provided to prevent damage to the finished surface. A supply of mats or wooden planks shall be maintained and used as approved and directed by the Engineer.

**Finishing:** Finishing operations shall be completed and the base course shall conform to the required lines, grades, and cross section. If necessary, the surface shall be lightly scarified to eliminate any imprints made by the compacting or shaping equipment. The surface shall then be recompacted to the required density. Correct all irregularities greater than ½” over ten feet to the satisfaction of the engineer.
Protection and Curing: After the base course has been finished as specified herein, it shall be protected against drying for a period of 5 to 7 days by the application of a prime coat as specified in FDOT Standard Specifications section 300 at a rate of not less than 0.15 gal/sqy. The curing method shall begin as soon as possible, but no later than 24 hours after the completion of finishing operations. The finished base course shall be kept moist continuously until the curing material is placed.

At the time the prime coat is applied, the surface shall be dense, free of all loose and extraneous material, and shall contain sufficient moisture to prevent penetration of the bituminous material. Water shall be applied in sufficient quantity to fill the surface voids immediately before the bituminous curing material is applied.

The curing material shall be maintained and re-applied as needed by the Contractor during the 7-day protection period so that all of the soil-cement will be covered effectively during this period. Finished portions of soil-cement that are used by equipment in constructing an adjoining section shall be protected to prevent equipment from marring or damaging the completed work.

When the air temperature may be expected to reach the freezing point, sufficient protection from freezing shall be given the soil-cement for 7 days after its construction and until it has hardened.

Thickness: The average thickness of the base constructed during one day shall be within 1/2 inch (12 mm) of the thickness required, except that the thickness of any one point may be within 3/4 inch (19 mm) of that required. Where the average thickness shown by the measurements made in one day's construction is not within the tolerance given, the Engineer shall evaluate the area and determine if, in his/her opinion, it shall be reconstructed at the Contractor's expense or the deficiency deducted from the total material in place.

Sampling and Testing:

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<tr>
<th>Control Testing for Full Depth Reclamation Field Sampling and Testing</th>
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<tr>
<td><strong>Type of Test</strong></td>
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<tr>
<td>RAP and Soil Cement Base Gradation</td>
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<tr>
<td>Moisture Density Relationship of Soil Cement Mixtures</td>
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<tr>
<td>Compressive Strength of Molded Soil Cement Cylinders</td>
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<tr>
<td>In-place Field Density</td>
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</table>

The depth of Reclaimed Bituminous Base Course shall be determined by measuring uncompacted reclaimed material immediately behind the screed in conjunction with measuring the milling depth prior to placement of reclaimed material. One depth measurement for each 250 square yards of completed base course shall be made. Any section deficient by 0.5 in (12 mm) or more from the specified depth shall be removed and satisfactorily replaced by the contractor at no additional cost. At the City’s option, cores may be taken by the engineer in the finished product to further ensure base thickness meets requirements.

All delivery tickets and notes regarding any materials brought to the project site to complete this Contract must be given to the Engineer/Inspector upon delivery to the project site.

Additional sampling and testing may be required if major changes in RAP characteristics are observed, such as a much coarser or finer gradation or a noticeable difference in asphalt content, or when considerable variability is occurring in the field test results.
Traffic Control

The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on freshly reclaimed base until rolling and blotting has been completed. The Contractor shall submit a MOT plan indication all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. MOT and associated devices shall be checked daily and periodically throughout the project for compliance; and where adjustments or corrections are needed, prompt revisions shall be made.

Method of Measurement:

If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for Full Depth Reclamation with Cement, and not specifically listed in another item in the Bid Form, shall be included in the SY Price for Pulverization including but not limited to shaping, compacting, finish grading, prime coat, sanding prime coat... Cost for introduction of cement into the mixture shall be included in the per TN cost for Cement. Cost for excavation for widening will be included in the CY Price for Excavation. Cost for additional materials needed for widening or adjustment of grade as directed by the engineer shall be included in the CY Price for General Use Optional Base Material.

Basis of Payment:

The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for Full Depth Reclamation (Pulverization), the per Ton price for Cement, the per Cubic Yard price for Excavation and the per Cubic Yard price for General Use Optional Base Material. The Unit prices include all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Full Depth Reclamation with Cement, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.

TECHNICAL PROVISION TP-282
Full Depth Reclamation with Emulsion

This work shall consist of the preparation of a stabilized base course composed of a mixture of the existing bituminous pavement, existing base course material and emulsified asphalt and other additives.

Description: The manufacture of the stabilized base course shall be done by in-place pulverizing and blending of the existing pavement and base materials, and the introduction of emulsion and additives as called for in the design mix formula. The process shall be accomplished in accordance with these specifications and conform to the depths, lines and grades established by the engineer.

Existing asphalt pavement shall be pulverized by a method that does not damage the material below the specified depth.
Materials:

**RAP (Reclaimed Asphalt Pavement):** The existing asphalt pavement incorporated into the finished base after mixing shall meet all requirements specified in the Florida Department of Transportation Standard Specifications for Road and Bridge Construction (latest edition), section 283-2, except that 98% of all material is required to pass through a 50 mm (2 inch) sieve.

**Additional Base Materials:** Additional base materials may be needed for adjusting grade elevations as directed by the engineer, or for widening. When such additional material is required it shall be among those bases listed in FDOT Design Standards (latest edition) as General Use Optional Base Materials and meet applicable FDOT requirements for such.

**Asphalt Emulsion:** Asphalt emulsion, type CSS-1h or CMS-2h, meeting the requirements of AASHTO M 208-01, shall be utilized. The contractor shall certify the liquid bituminous material meets this specification.

The City will require the Contractor to sample and test each load of emulsion prior to delivery. The Contractor will also provide a sample of the emulsion, on site, prior to commencing work. The City will require the Contractor to provide sample containers and a local independent testing laboratory for the analyzing of emulsion. The Contractor will be responsible for the cost of the testing. The City reserves the right to require testing of any shipment of emulsion. All samples shall be shipped and stored in clean air tight sealed wide mouth jars or bottles made of plastic. The City may require base prepared containing emulsified asphalt found to be outside of specification requirements to be removed and replaced at the sole expense of the contractor or left in place at no pay.

**Portland Cement:** Portland cement in either a dry or slurry form may be added to the reclaimed mixture if required by the mix design. Slurry made from Portland cement shall contain a minimum of 30% dry solids content. Cement used for full depth reclamation shall be Type I or II and conform to the latest standard requirements of AASHTO M85, for the type specified. Cement shall be limited to no more than 1.5 percent by dry weight of reclaimed material. Cement amounts greater than 1.5 percent will only be allowed if approved by the Engineer.

**Water:** The water for the base course compaction shall be clean and free from sewage, oil, acid, strong alkaline, or vegetable matter and it shall be in sufficient supply for mixing and curing. Water of questionable quality shall be tested in accordance with the requirements of AASHTO T 26.

**Base:** The base to be reclaimed shall be evaluated by a professional geotechnical engineering laboratory to determine suitability in the stabilization process. The soil shall be free of roots, sod and weeds. Cost for evaluation shall be borne by the owner, and results provided to the Contractor at the pre-construction conference.

**Mix Design:** Prior to construction, obtain an adequate number of core samples to develop the mix design(s). Representative samples of the asphalt pavement material, underlying base material, and virgin materials, where applicable, shall be supplied to a nationally accredited laboratory for testing to determine the proportions of asphalt emulsion, and other additives, if necessary, needed to produce a mix design meeting the requirements in the following table. The optimum binder content shall be the binder content that results in the highest wet tensile strength while also having 70% retained tensile strength compared to the dry strength and additionally has a minimum 1800 pounds Marshall stability. The mix design shall be signed and sealed by a professional engineer and submitted to the Engineer prior to use for approval.
Mix Design Criteria

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Procedure</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gradation of Reclaimed Material</td>
<td>AASHTO T27-11</td>
<td>Report</td>
</tr>
<tr>
<td>Optimum Binder Content</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compaction effort at optimum fluids content. Marshall Compactor; 50 blows/side or Superpave Gyratory Compactor, 100 mm diameter specimens, 30 gyrations. Density determination.</td>
<td>Asphalt Institute MS 14, Appendix F. ASTM D6926-10 AASHTO T 312-12 FM 1-T 166</td>
<td>Report</td>
</tr>
<tr>
<td>Marshall stability Cure at 60°C to constant weight, Test at 40°C</td>
<td>ASTM D6927-06</td>
<td>1800 lbs. Min</td>
</tr>
<tr>
<td>Resistance of compacted bituminous mixture to moisture induced damage. Vacuum saturation of 55% to 75%, water bath 25°C 23 hours, last hour at 40°C water bath</td>
<td>AASHTO T283-07 (2011)</td>
<td>70% Min retained tensile strength</td>
</tr>
</tbody>
</table>

Equipment:

**Road Reclaimer:** Shall be originally designed for pavement reclaiming of a size equal to or larger than a Caterpillar Model RM-350B with comparable specifications including horsepower and rotor size. The reclaimer shall be capable of pulverizing and mixing pavement, base materials, and subgrade soil to depth of 16 inches. It shall have the capability of introducing and metering additives uniformly and accurately and that positive displacement pumps accurately meter the planned amount of emulsion into the mixture. The reclaiming machine shall mix the emulsified asphalt additive thoroughly with the RAP and soil materials. The pump shall be mechanically or electronically interlocked with the ground speed of the machine. The asphalt metering system and water metering system shall be capable of continuously monitoring (GPM) flow and totaling the quantity of water and asphalt emulsion applied into the mixing chamber. Additives shall be uniformly distributed and mixed with the pulverized material, any existing underlying material as specified. Equipment such as road planers or cold milling machines designed to mill or shred the existing bituminous concrete, rather than crush or fracture it, shall not be allowed.

**Motor Grader:** Shall be of sufficient size and horsepower to adequately rough grade the pulverized base and rough and finish grade the mixed and compacted base. The equipment shall be in good working order free from leaks and capable of maintaining an accurate grade and cross-slope.

**Rollers:** Shall be in good working order free from leaks and capable of compacting the mix to the requirements of this specification: Vibratory rollers shall be a minimum of 10 tons and capable of rolling in either vibratory or static mode. Three-wheel static rollers shall be a minimum of 11 tons. Pneumatic tire rollers shall have a minimum of 9 oscillating wheels with smooth, low pressure tires (pressure shall be equally matched in all tires within 5 PSI) and weigh at least 20 tons. Initial compaction shall be accomplished by either single or dual drum vibratory or three-wheel roller static rollers.

**Additional equipment:** Provide additional equipment needed to complete the operations required by this technical provision. Availability of quality assurance devices (such as a 15' straight edge) shall be the responsibility of the Contractor.

**Construction:**

**Layout:** The Contractor shall be responsible for the string lining and lay out of the roadway prior to paving. Elevations of the existing road must be referenced at sufficient intervals to ensure the roadway elevation is not changed in any location after final surface is placed. Method for layout and line and elevation reference shall be approved by the City prior to beginning work. It is imperative that roadway elevations remain unchanged except cross slope correction or as approved by the engineer.
Weather and Seasonal limitations: The base shall not be mixed or placed while the atmospheric temperature is below 50°F or when conditions indicate that the temperature may fall below 50°F within 24 hours, or when the weather is foggy or rainy, or when the soil or sub grade is frozen.

Widening: When the existing base is to be widened, excavate the shoulder from the edge of the existing pavement to at least 6 inches beyond the planned new width of the base prior to pulverization. The bottom of the trench shall be kept free of loose soil and vegetation.

Approved base material (those bases listed in FDOT Design Standards as General Use Optional Base Materials) shall be placed onto the existing pavement so it can be mixed in with the existing pavement and base material during the pulverization operation to make a homogeneous base course across the entire width of the road, including the widening area. Correct all areas of irregular grade or deficient thickness and remove and replace material contaminated with soil, organic material, or debris.

After the final pass of the reclaimer, soil shall be drawn up against the widening material to close the excavation and the shoulder shall be graded and compacted to produce a firm, even surface.

Additional Material: When additional material is to be added to correct cross slope deficiencies or change elevation as directed by the engineer, approved base material (those bases listed in FDOT Design Standards as General Use Optional Base Materials) shall be placed on the roadway prior to final pass for pulverization and mixed uniformly with the existing material.

Pulverization: The existing pavement and base material shall be pulverized and blended to the depth required so the entire mass of material shall be uniformly graded to the following gradation:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Min Percent Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3&quot;</td>
<td>100</td>
</tr>
<tr>
<td>2&quot;</td>
<td>95</td>
</tr>
<tr>
<td>Number 4</td>
<td>55</td>
</tr>
<tr>
<td>No. 200</td>
<td>20</td>
</tr>
</tbody>
</table>

Material gradation may vary due to local aggregates and conditions. A minimum of two passes of the reclaimer are required, additional passes may be necessary to achieve the required gradation. If material removal is required to maintain roadway elevation or correct cross slope, removal shall be done prior to the final pass of the reclaimer. Injection shall occur on the final pass of the reclaimer.

The asphalt emulsion shall be introduced into the mix through the reclaimer uniformly and accurately and metered such that areas are of equal consistency and moisture content. The reclaimed material and additives shall be combined in place to meet the requirements specified in such proportions that the reclaimed mixture is of acceptable composition and stability. Before the start and at the end of each day’s work and at any time requested, the City engineer, or designee shall be permitted access to the mixing equipment in order to read the meter to verify the quantity of asphalt emulsion applied during the day’s work. Field adjustments shall be made as necessary to the recommended mix design under the guidance of a knowledgeable and competent technician or superintendent to obtain a satisfactory reclaimed mixture of consistent composition and stability throughout the Project.

After the material has been processed, it shall be compacted to the lines, grades, and depth required. Water may be applied to ensure optimum moisture content at the time of mixing and compaction.

Compaction: Commence rolling with self-propelled rollers as required by this technical provision at the low side of the course, except leave 3 to 6 inches from any unsupported edge or edges unrolled initially to
prevent distortion. Density readings shall be taken by Contractor’s licensed nuclear gauge operator and witnessed by the Engineer/inspector. A control strip of not less than 500 feet shall be constructed to develop proper rolling/compaction patterns and methods to obtain desired density. Whenever there is a change in the reclaimed material or compaction method, equipment or unacceptable results occur, a new control strip shall be constructed, tested and analyzed.

The number, weight and type of rollers furnished shall be sufficient to obtain the required compaction of the reclaimed material. The field density of the compacted mixture shall be at least 96.0% of the maximum density of laboratory specimens prepared from samples of the base material taken from the material in place. The specimens shall be compacted in accordance with AASHTO T312. The in-place field density shall be determined in accordance with ASTM D 2922.

Any pavement shoving or other unacceptable displacement shall be corrected. The cause of the displacement shall be determined, and corrective action taken immediately and before continuing rolling. Care shall be exercised in rolling the edges of the reclaimed mixture, so the line and grade of the edge are maintained.

At the end of each day's production, a transverse construction joint shall be formed by a header or by cutting back into the compacted material to form a true vertical face free of loose material. The protection provided for construction joints shall permit the placing, spreading, and compacting of base material without injury to the work previously laid. Where it is necessary to operate or turn any equipment on the completed base course, sufficient protection and cover shall be provided to prevent damage to the finished surface. A supply of mats or wooden planks shall be maintained and used as approved and directed by the Engineer.

**Finishing:** Finishing operations shall be completed and the base course shall conform to the required lines, grades, and cross section. If necessary, the surface shall be lightly scarified to eliminate any imprints made by the compacting or shaping equipment. The surface shall then be recompacted to the required density. Correct all irregularities greater than ½” over ten feet to the satisfaction of the engineer.

**Protection and Curing:** After the base course has been finished as specified herein, it shall be protected by the application of a prime coat as specified in FDOT Standard Specifications section 300 at a rate of not less than 0.15 gal/sq. yd. The curing method shall begin as soon as possible, but no later than 24 hours after the completion of finishing operations. The finished base course shall be kept moist continuously until the curing material is placed.

At the time the prime coat is applied, the surface shall be dense, free of all loose and extraneous material, and shall contain sufficient moisture to prevent penetration of the bituminous material. Water shall be applied in sufficient quantity to fill the surface voids immediately before the bituminous curing material is applied.

Finished portions of base that are used by equipment in constructing an adjoining section shall be protected to prevent equipment from marring or damaging the completed work.

**Thickness:** The average thickness of the base constructed during one day shall be within ½” of the thickness required, except that the thickness of any one point may be within ¼” of that required. Where the average thickness shown by the measurements made in one day's construction is not within the tolerance given, the Engineer shall evaluate the area and determine if, in his/her opinion, it shall be reconstructed at the Contractor's expense or the deficiency deducted from the total material in place.
Sampling and Testing:

### Control Testing for Full Depth Reclamation Field Sampling and Testing

<table>
<thead>
<tr>
<th>Type of Testing</th>
<th>Frequency</th>
<th>Sample Location &amp; Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAP Gradation: 3', 2', No. 4 and No. 200</td>
<td>Each 3,000 SY or Min once per day</td>
<td>Random locations after spreading prior to compaction</td>
</tr>
<tr>
<td>Moisture-Density Relationship of Reclaimed Base</td>
<td>Each 3,000 SY or Min once per day</td>
<td>Sample at point of each Nuclear Density Measurement</td>
</tr>
<tr>
<td>In-Place Field Density&lt;sup&gt;3&lt;/sup&gt;</td>
<td>Each 250 Square yards&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Random locations after spreading and Compaction operations</td>
</tr>
<tr>
<td>Moisture Added to RAP&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Each 1,000 Square yards&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Reclaimed Lift Depth Sample at Point of each Nuclear Density Measurement</td>
</tr>
</tbody>
</table>

### Table A Notes

1. Additional sampling and testing may be required if major changes in RAP characteristics are observed.

2. Sample RAP in accordance with ASTM D979 or AASHTO T168 procedures for Sampling Bituminous Paving Mixtures.

3. Target densities for reclaimed mix compaction are established by the laboratory compaction of specimens in accordance with ASTM D558. The compacted field density shall be determined in accordance with ASTM D 2922. Dry density shall be determined by correcting the gauge wet density using the procedure in Note 4.

4. The moisture content shall be determined by AASHTO T110 for Moisture or Volatile Distillates in Bituminous Paving Mixtures. Also, the moisture content appears can be determined adequately by weighing and drying to a constant weight using a forced draft oven as for ASTM D 2216 or AASHTO T 265 or by microwave oven drying as for ASTM D 4643.

5. For each length or lot size quantity specified, materials sampling shall be completed on a random basis using the procedures of ASTM D 3365 for Random Sampling of Construction Materials.

The depth of Reclaimed Bituminous Base Course shall be determined by measuring compacted reclaimed material immediately behind the final rollers in conjunction with measuring the milling depth prior to placement of reclaimed material. One depth measurement for each 250 square yards of completed base course shall be made. Any section deficient by 0.5 in (12 mm) or more from the specified depth shall be removed and satisfactorily replaced by the contractor at no additional cost. At the City’s option, cores may be taken by the engineer in the finished product to further ensure base thickness meets requirements.

All delivery tickets and notes regarding any materials brought to the project site to complete this Contract must be given to the Engineer/Inspector upon delivery to the project site.

### Traffic Control

The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on freshly reclaimed base until rolling and blotting has been completed. The Contractor shall submit a MOT plan addressing all facets of traffic control for the project area. The MOT plan shall be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. MOT and associated devices shall be checked daily and periodically throughout the project for compliance; and where adjustments or corrections are needed, prompt revisions shall be made. Unless specifically approved prior to construction in writing by the City Engineer, all roadways shall be returned to traffic the same day and all lane closures removed and roadway lanes fully opened.
Method of Measurement:

If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified including all items of work described herein. Any item necessary for Full Depth Reclamation with Asphalt Emulsion and not specifically listed in another item in the bid form, shall be included in the SY cost for Pulverization including but not limited to shaping, compacting, finish grading, prime coat, sanding prime coat, etc. Cost for introduction of asphaltic cement into the mixture shall be included in the per GL cost for Asphalt Emulsion. Cost for excavation for widening will be included in the CY Price for Excavation. Cost for additional materials needed for widening or adjustment of grade as directed by the engineer shall be included in the CY Price for General Use Optional Base Material.

Basis of Payment:

The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for Full Depth Reclamation (Pulverization), the per Gallon price for Asphalt Emulsion, the per Cubic Yard price for Excavation and the per Cubic Yard price for General Use Optional Base Material. The Unit prices include all items listed in the ITB including all General Conditions, Special Conditions and Technical Provisions pertaining to Full Depth Reclamation with Asphalt Emulsion, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this ITB as detailed in the specifications.

TECHNICAL PROVISION TP-309
CRACK SEALING

The work covered by these specifications consists of furnishing all labor, equipment and materials necessary to perform all operations in connection with the cleaning and sealing of construction and random cracks.

Material: Utilize Rubberized Joint Sealing Material meeting the requirements of Modified AASHTO M173. Utilize Asphalt Rubber Sealing Compound meeting the requirements of ASTM D5078.

Equipment

Kettle: The kettle shall be an oil-jacketed double wall kettle equipped with agitator and 2-inch hot asphalt pump. Provide separate thermometers for oil bath and melting chamber. Provide a pump for circulating the transfer oil bath. Do not allow the operating temperature in the kettle to exceed the flash point of the sealing material.

Compressor: Utilize an air compressor capable of maintaining a minimum of 100 PSI at 150 CFM, measured at the source and equipped with traps that will maintain the compressed air free of oil and water.

Extruder: Provide an extruder capable of providing variable width overband from 2 to 4 inches where overband process is utilized. Where the pavement being sealed will be overlaid within six months of sealant application, the sealant placement shall be recessed 1/4” in the crack or joint reservoir with no overband.
Construction

No crack sealing material shall be applied when pavement temperature is below 40° F, unless a heat lance is utilized to adequately heat the crack. No material shall be placed on wet surfaces.

Vegetation and other deleterious materials shall be removed prior to sealing utilizing a motorized wire brush. All cracks shall be cleaned of loose dirt and debris with a compressor.

Where overbanding is required, fill joints and cracks in such a manner to provide a 2” band centered over the joint. The thickness of the material shall not exceed 1/8” to 1/16”. Material shall be leveled by means of a squeegee or a dish mounted on the delivery wand.

When traffic requires immediate use of the roadway, a boiler slag aggregate shall be broadcast over cracks to prevent sealer pickup.

All workmanship shall be of the highest quality, and excess spilled sealer shall be removed from the pavement surface by approved methods and discarded. Any workmanship determined to be below standards of the particular craft involved will not be accepted and will be corrected and/or replaced as required by the City.

Traffic Control: The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on affected areas until all operations have been completed and the sealer has dried or cover aggregate placed such that tire pickup will not occur. The Contractor shall submit a MOT plan indicating all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with TP-102. MOT and associated devices shall be checked daily and periodically throughout the project for compliance; and where adjustments or corrections are needed, prompt revisions shall be made.

Method of Measurement: If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be per Gallon or as specified in the Bid Form including all items of work described herein. Any item necessary for Crack Sealing, and not specifically listed in another item in the Bid Form, shall be included in this item.

Basis of Payment: The quantities to be paid for under this Technical Provision shall be included in the per Gallon unit price for Crack Sealing or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Crack Sealing, including all MOT as described in TP-102 and all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.
TECHNICAL
PROVISION TP-313a
Rejuvenating Fog Seal

The work specified in this section consists of furnishing and applying a rejuvenating fog seal on existing roads at application rates described here-in.

**Description:** Rejuvenating Fog seals are a method of adding asphalt to an existing pavement surface to improve scaling or waterproofing while replacing softer fractions of the asphalt lost through manufacture, placement and oxidation due to weathering. They help prevent further stone loss by holding aggregate in place and create a superior bond to underlying asphalts through the softening of the top layer.

**Materials:**

**Liquid emulsified bituminous material:** A polymer modified liquid bituminous material containing rejuvenating agent conforming to the following requirements. The contractor shall certify the liquid bituminous material meets this specification. Additionally, the emulsion supplier shall receive quarterly certificates of analysis from both the polymer and rejuvenating agency manufacturers. The COAs will be provided to the agency upon request.

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Procedure</th>
<th>Specification (min)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emulsion Properties</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity, Saybolt-Furol, @ 77°F, SFS</td>
<td>T59</td>
<td>10</td>
</tr>
<tr>
<td>Storage, 24 hour, %</td>
<td>T59</td>
<td>1</td>
</tr>
<tr>
<td>Oil Distillate, %</td>
<td>T59</td>
<td>0.5</td>
</tr>
<tr>
<td>Sieve Test, %</td>
<td>T59</td>
<td>0.1</td>
</tr>
<tr>
<td>Residue by Distillation @ 350°F, %</td>
<td>T59</td>
<td>30</td>
</tr>
<tr>
<td><strong>Residue Properties from Distillation</strong></td>
<td>T59</td>
<td></td>
</tr>
<tr>
<td>Penetration @ 4°C, 200g weight, 60 sec</td>
<td>T49</td>
<td>30</td>
</tr>
<tr>
<td><strong>Residue Properties From Low Temp Evaporation</strong></td>
<td>PP72-11, Procedure B</td>
<td></td>
</tr>
<tr>
<td>MSCR @ 52°C, Jnr @ 3.2/7 kPa</td>
<td>T315</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Polymer Properties</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swelling in rejuvenating agent, % max weight increase: 48 hrs</td>
<td>ASTM D471 Mod&lt;sup&gt;2&lt;/sup&gt;</td>
<td>40%</td>
</tr>
<tr>
<td>Tensile Strength (psi)</td>
<td>ASTM D412a Mod&lt;sup&gt;2&lt;/sup&gt;</td>
<td>800</td>
</tr>
<tr>
<td>Glass Transition Temperature (T&lt;sub&gt;G&lt;/sub&gt;) – Midpoint by DSC (°C)</td>
<td>ASTM D7426 Mod&lt;sup&gt;2&lt;/sup&gt;</td>
<td>0</td>
</tr>
<tr>
<td>Latex Density at 23°C (g/cm&lt;sup&gt;3&lt;/sup&gt;)</td>
<td>ASTM D8937 Mod&lt;sup&gt;2&lt;/sup&gt;</td>
<td>1.00 1.05</td>
</tr>
<tr>
<td>Latex pH</td>
<td>ASTM E70 Mod&lt;sup&gt;2&lt;/sup&gt;</td>
<td>6.0 8.0</td>
</tr>
<tr>
<td><strong>Test on Rejuvenating Agent</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash Point, COC, °F</td>
<td>T48</td>
<td>380</td>
</tr>
<tr>
<td>Viscosity, 140 F, CST</td>
<td>201</td>
<td>50 175</td>
</tr>
<tr>
<td>Saturate, % by wt</td>
<td>ASTM D2007</td>
<td>30</td>
</tr>
<tr>
<td>Asphaltenes</td>
<td>ASTM D2007</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Test on Rejuvenating Residue</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight change, %w</td>
<td>ASTM D2872</td>
<td>6.5</td>
</tr>
<tr>
<td>Viscosity Ratio (RTFO/Orig.)</td>
<td>ASTM D2170</td>
<td>3</td>
</tr>
</tbody>
</table>
1. Exception to AASHTO T59: Bring the temperature on the lower thermometer slowly to 350 F plus or minus 10 F. Maintain this temperature for 20 minutes. Complete the total distillation in 60 plus or minus 5 minutes.
2. Use these modifications for Polymer Properties testing:


1. Using a syringe, place 0.8 gm of latex into an 18 mm diameter DSR mold.
2. Allow the sample to dry at ambient lab conditions (air conditioned) on the bench for 72 hours. Sample should be easily removable from the mold.
3. Take the “button” out of the mold and place the sample into a forced air oven at 40°C (104°F) for 48 hours (on release paper). If at the end of the ambient dry, the sample sticks to the mold, place it into the oven and check it after 1-2 hours.
4. After 48 hours cool and weigh the sample to the nearest 0.0001 gram and record the weight.
5. Put ½ inch of Rejuvenating Agent into a 3 oz penetration tin.
6. Place the “button” on the Rejuvenating Agent, and add another ½ inch Of Rejuvenating Agent, so that the “button” is covered.
7. Put the cap on the penetration tin and place it into the 40°C oven for 48 hours.
8. Remove the “button from the Rejuvenating Agent, blot surface of the “button” to remove excess Rejuvenating Agent, cool the “button” to room temperature and weigh it.
9. Calculate weight gain of the “button”, express as %.

**ASTM D412A Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension: Modifications**

1. To prepare the polymer film, dilute the waterborne polymer to 40% Total Solids Content and pour 57 g into a Teflon or silicone release mold of dimensions 7” X 7” X ½”.
2. Allow to dry at 23°C (73°F) and 50% RH (controlled conditions) for 7 – 10 days total time, during which time the film should be flipped around once, preferably after 3 or 4 days. The film should be transparent in the end.
3. To drive out any residual water, place the film in an oven at 50°C for 30 min. Dried film thickness should be 25 mil +/- 5 mils. Discard films <20 mil.
4. Cut out dumbbell-shaped test specimens of dimension 75 mm total length, 25 mm mid-section (L) and 4 mm width of mid-section.
5. Grip in Instron machine with gap size 1 inch, use 8 inch/min cross-head speed.

**ASTM D7426 Standard Test Method for Assignment of the DSC Procedure for Determining Tg of a Polymer or an Elastomeric Compound Modifications**

Use between 3 – 30 mg dry polymer. Instrument used is TA Q2000 Differential Scanning Calorimeter (DSC). Heating rate is 20°C/min.


Replace “Emulsified Asphalt” with “Latex” in text of test method. The testing temperature used should be 25 °C ± 3 C. The calculation in Section 7 should be as follows:
Calculation:
\[ D = (W_f - W_t) \times 0.1 \]
S.G. = \( D / 8.337 \)
Where: \( W_f \) = Weight of filled cup (g) \( W_t \) = Weight of empty cup (g)

**ASTM E70 Standard Test Method for pH of Aqueous Solutions with the Glass Electrode: Modifications**

1. A pH meter with automatic temperature measurement should be used in the evaluation with a calomel cell assembly or combination electrode. Calibration should be made using the procedure with the pH meter, according to ASTM method, prior to testing the pH of the latex. In Section 9, the procedure for measuring pH of the latex should be as follows:

   (a) Place the electrode and probe into the dispersion that is to be measured and swirl the sample cup or beaker gently. (You may also use the probe in a stirring motion.)

   (b) Wait for the reading to stabilize (usually less than a minute) and read/record this value. Note the temperature if not utilizing an ATC probe.

   (c) Take the Electrode and ATC probes from the sample and rinse thoroughly with de-ionized water. Pat dry and place back into appropriate solution recommended by electrode manufacturer for storage.

**End of Test Modifications**

Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it meets the requirements of this specification. COA shall include, at a minimum, required emulsion properties and percentage of polymer solids in the emulsion.

**Material Samples:** The City will require the Contractor to sample and test each load of emulsion prior to delivery. The Contractor will also provide a sample of the emulsion, on site, prior to commencing work. The City will require the Contractor to provide sample containers and a local Independent testing laboratory for the analyzing of emulsion. The Contractor will be responsible for the cost of the testing. The City reserves the right to test any shipment of emulsion that is believed to be substandard. All samples shall be shipped and stored in clean air tight sealed wide mouth jars or bottles made of plastic. If requested by the City, samples of rejuvenator and polymer shall also be provided in sample containers for testing by the City. Cost of polymer and rejuvenator testing shall be borne by the City. Where these tests identify material outside specification requirements, the City shall require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the City. Further, the City may require the material placed containing the emulsified asphalt outside of specification requirements to be removed and replaced at the sole expense of the contractor or left in place at no pay.

**Equipment:**

**Distributor:** The liquid bituminous material shall be applied with a truck mounted, pressure distributor that has been calibrated within the previous twelve (12) months, for transverse and longitudinal application rate. The distributor shall be equipped, maintained and operated so that the bituminous material can be applied at controlled temperatures and rates from .03 to .22 gallons per square yard with
nozzles adjusted to allow minimum overlap of 3x. The distributor shall be capable of applying bituminous material of variable widths up to sixteen (16) feet. The distributor shall uniformly apply the bituminous material to the specified rate with a maximum allowed variation of 0.015 gallons per square yard. Distributor equipment shall include tachometer, accurate volume measuring device, a calibrated tank and a thermometer for measuring the temperature of the tank’s contents. Distributors shall be equipped with an asphalt pump and full circulating spray bars adjustable laterally and vertically. Distributors and transport trailers shall be equipped with a sampling valve. Distributor trucks shall be of the pressure type with insulated tanks. The use of gravity distributors will not be permitted. The valves shall be operated by levers so that one or all valves may be quickly opened or closed in one operation. The valves which control the flow from nozzles shall act positively so as to provide a uniform unbroken spread of bituminous material on the surface. The distributor shall be equipped with a computer controlled DMI to provide for accurate and rapid determination and control of the amount of bituminous material being applied. The distributor shall be capable of carefully monitoring application rates with computer generated reports registering speed in feet per minute, trip/total distance in feet, and application rate.

**Sand Truck:** The truck used for sanding shall be equipped with a spreader that allows the sand to be uniformly distributed onto the pavement. The spreader shall be able to apply 1/2 pound to 3 pounds of sand per square yard in a single pass. The spreader shall be adjustable so as not to broadcast sand onto driveways, tree lines or lawns. The sand to be used shall be free flowing, without any leaves, dirt, stones, etc. Any wet sand shall be rejected from the job site.

**Additional equipment:** Additional equipment may be needed to complete the operations required by this technical provision. All equipment necessary for the successful completion of projects governed by this technical provision shall be included in the unit costs associated herein. Availability of quality assurance devices shall be the responsibility of the Contractor.

**Construction:**

**Layout:** The Contractor will be responsible for the lay out of the roadway and project planning and sequencing to meet traffic control requirements prior to placement of the sealer.

**Weather and Seasonal limitations:** The fog seal shall not be applied to a wet surface or when rain is occurring, or the threat of rain is present immediately before placement. The surface treatment shall not be applied when the ambient temperature or pavement temperature are less than 60°F.

If rain occurs prior to the emulsion breaking, the area shall be re-fogged at no cost to the City. Further, the contractor’s traffic control and project monitoring shall continue until the emulsion applied has broke and the resultant surface is not slippery or dangerous to vehicular travel.

**Preparation of Surface:** The contractor will be responsible for blowing and/or sweeping the road immediately ahead of the fog seal operation to make sure the road is free of sand, dust, loose aggregate and other debris. The surface shall be clean and dry prior to the application.

**Application of bituminous material:** The emulsion shall not be diluted.

Properly calibrated distributor trucks with 1/8” to 3/16” opening spray nozzles shall be used to apply the emulsion. The emulsion shall be heated to the manufacturer’s recommendation. The emulsion shall be sprayed at a rate as directed in the field by the City. Application will be determined dependent upon the surface conditions.

**Tight Surface (low absorbance and relatively smooth)** - .06 - .10 gal/sy
Open Surface (relatively porous and absorbent with open voids) - .08 - .14 gal/sy

Exceptions: When fog seal is required as a subsequent treatment to chip seal, OGCM, or other method described in this contract, materials, equipment and application shall be as described in this technical provision and as amended in the technical provision appropriate to the work the fog seal is subsequent to. If discrepancies occur, the City shall determine the appropriate specification.

Sanding/Blotting: After the fog seal has penetrated and sufficiently broke, a coating of dry sand may be applied to the surface in sufficient amount to protect the traveling public. Application will be at the direction of the City and paid separately.

Contractor’s Quality Control Plan: Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the City with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:
- Source materials used on the project.
- Sampling and testing methods used to determine compliance with material specifications.
- Equipment to be used on the project.
- Calibration method used to determine compliance with this specification.
- Pavement cleaning and preparation procedure.
- Plan for protecting fog seal from damage by traffic.
- Procedure for monitoring initial acceptance requirements.
- An action plan demonstrating adjustment of the operation for adverse environmental conditions or out of specification materials or procedures.

Traffic Control: The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh fog seal until material is sufficiently broke such that tire pickup does not occur. The Contractor shall submit an MOT plan indicating all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with TP-102. OT and associated devices shall be checked daily and periodically throughout the project for compliance; and where adjustments or corrections are needed, prompt revisions shall be made.

Documentation: Complete a daily report that includes the following information:
- Job number
- Route/Street Name(s)
- Owner’s On-Site Representative Name
- Date
- Air temperature – Min/Max (during application)
- Unit weight of emulsified asphalt (pounds per gallon)
- Beginning and ending application locations
- Length and width in feet
- Total area (square yards)
- Gallons of emulsified asphalt
- Application rate (pounds/gallons per square yard)
- Contractor’s authorized signature
- Emulsified asphalt bill of lading(s)

Method of Measurement: If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for Rejuvenating Fog Seal, and not specifically listed in another item in the Bid Form, shall be included in this item.
**Basis of Payment:** The quantities to be paid for under this Technical Provision shall be included in the per Gallon or SY price for Rejuvenating Fog Seal, the per Cubic Yard price for sanding or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Rejuvenating Fog Seal, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.

**TECHNICAL PROVISION**

**TP-314**

**ASPHALT REJUVENATION SPECIFICATION**

The work specified in this section shall consist of furnishing all labor, material, and equipment necessary to perform all operations for the application of an asphalt rejuvenating agent to asphlactic concrete surface courses.

**Description:** The rejuvenation of surface courses shall be by spray application of a maltene based cationic rejuvenating agent composed of petroleum oils and resins emulsified with water. All work shall be in accordance with the specifications, the applicable drawings, and subject to the terms and conditions of this contract.

**Materials:**

The asphalt rejuvenating agent shall be an emulsion composed of a petroleum resin oil base uniformly emulsified with water. Each bidder must submit with his bid a certified statement from the asphalt rejuvenator manufacturer showing that the asphalt rejuvenating emulsion conforms to the required physical and chemical requirements.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Tests</th>
<th>Test Method</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emulsion:</td>
<td></td>
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<tr>
<td>Viscosity @ 25°C</td>
<td>ASTM D-244</td>
<td>Min. 15 Max. 40</td>
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<td>Residue, % W</td>
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<td>Viscosity @ 60°C, cST</td>
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<tr>
<td>Maltene Dist. Ratio</td>
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PC + A₁₅
S + A₂

PC/S Ratio⁵                   | D-2006-70         | Min. 0.5 Max. -    |
Saturated Hydrocarbons,S⁵     | D-2006-70         | Min. 21 Max. 28    |

ITB 19-35 CITYWIDE PAVING PROGRAM  Page 32 of 140
1 ASTM D-244 Modified Evaporation Test for percent of residue is made by heating 50-gram sample to 149 C (300 F) until foaming ceases, then cool immediately and calculate results.

2 Test procedure identical with ASTM D-244-60 except that .02 Normal Calcium Chloride solution shall be used in place of distilled water.

3 Test procedure identical with ASTM D-244 except that distilled water shall be used in place of two percent sodium oleate solution.

4 Test procedure is attached.

5 Chemical composition by ASTM Method D-2006-70: PC =
   Polar Compounds, A1 = First Acidaffins
   A2 = Second Acidaffins, S = Saturated Hydrocarbons

Material Performance: The asphalt rejuvenating agent shall have the capability to penetrate the asphalt pavement surface. The asphalt rejuvenating agent shall be absorbed and incorporated into the asphalt binder. Verification that said incorporation of the asphalt rejuvenating agent into the asphalt binder has been affected shall be by analysis of the chemical properties of said asphalt binder i.e. viscosity shall be improved to the following extent. The viscosity shall be reduced by a minimum of forty, (40%) percent as determined by dynamic shear rheometer (DSR) method for asphalt testing in accord with AASHTO T315-05. This analysis shall apply to extracted asphalt binder, taken from cores extracted fifteen to thirty days following application, in the upper 3/8” of pavement. In addition, the treated areas shall be sealed in-depth to the intrusion of air and water.

The rejuvenating agent shall have a record of at least five years of satisfactory service as an asphalt rejuvenating agent and in-depth sealer. Satisfactory service shall be based on the capability of the material to decrease the viscosity of the asphalt binder and provide an in-depth seal. Reclamite®, manufactured by D&D Emulsion, Inc., Mansfield, Ohio, is a product of known quality and accepted performance.

The bidder must submit with his bid the manufacturer's certification that the material proposed for use is in compliance with the specification requirements. The bidder must submit with his bid previous use documentation and test data conclusively demonstrating that the rejuvenating agent has been used successfully for a period of five years by government agencies such as Cities, Counties, etc.; and that the asphalt rejuvenating agent has been proven to perform, as heretofore required, through field testing by government agencies as to the required change in asphalt binder viscosity. Testing data shall be submitted indicating such product performance on a sufficient number of projects to insure product consistency. In addition, testing data shall be submitted to indicate said product performance over a testing period of three years to insure reasonable life expectancy.

RECLAMITE®, a product of Golden Bear Oil, a division of Tricor Refining, LLC. is a product of known quality and accepted performance.

Equipment:

Distributor: The distributor for spreading the emulsion shall be self-propelled and shall have pneumatic tires. The distributor shall be designed and equipped to distribute the asphalt rejuvenating agent uniformly on variable widths of surface at readily determined and controlled rates from 0.05 to 0.5 gallons per square yard of surface, and with an allowable variation from any specified rate not to exceed 5 percent of the specified rate.

Distributor equipment shall include full circulation spray bars, pump tachometer, volume measuring
device and a hand hose attachment suitable for application of the emulsion manually to cover areas inaccessible to the distributor. The distributor shall be equipped to circulate and agitate the emulsion within the tank.

A check of distributor equipment as well as application rate accuracy and uniformity of distribution shall be made when directed by the Engineer.

**Sand Truck:** The truck used for sanding shall be equipped with a spreader that allows the sand to be uniformly distributed onto the pavement. The spreader shall be able to apply 1/2 pound to 3 pounds of sand per square yard in a single pass. The spreader shall be adjustable so as not to broadcast sand onto driveways or to lawns.

The sand to be used shall be free flowing, without any leaves, dirt, stones, etc. Any wet sand shall be rejected from the job site.

Any equipment that is not maintained in full working order, or is proven inadequate to obtain the results prescribed, shall be repaired or replaced at the direction of the Engineer.

**Construction:**

**Layout:**
The Contractor will be responsible for the lay out of the roadway and project planning and sequencing to meet traffic control requirements prior to paving.

**Weather and Seasonal limitations:**
The asphalt-rejuvenating agent shall not be applied to a wet surface or when rain is occurring, or the threat of rain is present immediately before placement. The surface treatment shall not be applied when the temperature is less than 50 degrees Fahrenheit in the shade. When applying emulsions, the temperature of the surface shall be a minimum of 59°F, and no more than 140°F.

If unexpected rain occurs prior to material penetration and sanding, the agent shall be reapplied at no cost to the City. Further, the contractor’s traffic control and project monitoring shall continue until the application has penetrated, area has been sanded and the resultant surface is not slippery or dangerous to vehicular travel.

**Preparation of Surface:**
The contractor will be responsible for blowing or sweeping the road immediately ahead of the fog seal operation to make sure the road is free of loose aggregate and other debris. The surface shall be clean and dry prior to the application.

The asphalt-rejuvenating agent shall be applied by a distributor truck at the temperature recommended by the manufacturer and at the pressure required for the proper distribution. The emulsion shall be so applied that uniform distribution is obtained at all points of the areas to be treated. Distribution shall be commenced with a running start to insure full rate of spread over the entire area to be treated. Areas inadvertently missed shall receive additional treatment as may be required by hand sprayer application.

Application of asphalt rejuvenating agent shall be on one-half width of the pavement at a time. When the second half of the surface is treated, the distributor nozzle nearest the center of the road shall overlap the previous application by at least one-half the width of the nozzle spray. In any event the centerline construction joint of the pavement shall be treated in both applications passes of the distributor truck.

Before spreading, the asphalt rejuvenating agent shall be blended with water at the rate of two (2) parts
rejuvenating agent to one (1) part water, by volume or as specified by the manufacturer. The combined mixture of asphalt rejuvenating agent and water shall be spread at the rate of 0.05 to 0.10 gallons per square yard, or as approved by the Engineer following field testing.

Where more than one application is to be made, succeeding applications shall be made as soon as penetration of the preceding application has been completed and the Engineer grants approval for additional applications.

Grades or super elevations of surfaces that may cause excessive runoff, in the opinion of the Engineer, shall have the required amounts applied in two or more applications as directed.

After the street has been treated, the area within one foot of the curb line on both sides of the road, when directed by the Engineer, shall receive an additional treatment of the asphalt rejuvenating emulsion. Said treatment shall be uniformly applied by a method acceptable to the Engineer.

After the rejuvenating emulsion has penetrated, a coating of dry sand shall be applied to the surface in sufficient amount to protect the traveling public as required by the Engineer.

The Contractor shall furnish a quality inspection report showing the source, manufacturer, and the date shipped, for each load of asphalt rejuvenating agent. When directed by the Engineer, the Contractor shall take representative samples of material for testing.

**Applicator Experience:** The asphalt-rejuvenating agent shall be applied by an experienced applicator. A project superintendent knowledgeable and experienced in application must be in control of each day's work.

**Material Standards and Alternates:** The product "Reclamite"®, as manufactured by Golden Bear Oil, a division of Tricor Refining, LLC, for the asphalt rejuvenating agent is the standard for these specifications and the prices quoted on the Bid Sheet Base Bid shall be for this standard. Should a bidder wish to submit a bid for alternates to the Standard, said prices shall be entered on the BID SHEET as the "Alternate Bid" for each item. In the event that the bidder submits no bid for the Standard, only the "Alternate Bids" should be completed.

Bidders may offer an ALTERNATE for the Standard specified in the Specifications provided the bidder adheres to the following and submits same with his bid.

(a) List the proposed alternate on the BID SHEET form giving the product name and price.

(b) Furnish complete specifications and descriptive literature for the alternate as well as a one-gallon sample of the material proposed for use. Such descriptive and detailed information shall be complete and at least equal in detail to the City's requirements for the standard item for which the alternate is offered.

(c) Submit a current Material Safety Data Sheet for the alternate materials. The City will give the alternate consideration. The Contractor may furnish only those alternate items included in his proposal and approved by the City prior to award of a contract.

(d) Furnish all required test data and use documentation as hereto for required.

If no ALTERNATE is indicated on the BID SHEET, the Contractor shall furnish the STANDARD
(brand) specified in the attached specifications. Should the ALTERNATE offered be found unacceptable by the City based on the data submitted with the bid and no bid is entered on the BID SHEET for the Standard, then said bid will be considered non-responsive.

**Weather and Seasonal limitations:** The temperature of the asphalt rejuvenating emulsion, at the time of application shall be as recommended by the manufacturer. The asphalt-rejuvenating agent shall be applied only when the existing surface to be treated is thoroughly dry and when it is not threatening to rain. The asphalt-rejuvenating agent shall not be applied when the ambient temperature is below 40° F.

**Handling of Asphalt Rejuvenating Agent:** Contents in tank cars or storage tanks shall be circulated at least forty-five minutes before withdrawing any material for application. When loading the distributor, the asphalt rejuvenating agent concentrate shall be loaded first and then the required amount of water shall be added. The water shall be added into the distributor with enough force to cause agitation and thorough mixing of the two materials. To prevent foaming, the discharge end of the water hose or pipe shall be kept below the surface of the material in the distributor that shall be used as a spreader. The distributor truck will be cleaned of all of its asphalt materials and washed out to the extent that no discoloration of the emulsion may be perceptible. Cleanliness of the spreading equipment shall be subject to the approval and satisfaction of the Engineer.

**Street Sweeping:** The Contractor shall be responsible for sweeping and cleaning of the streets prior to, and after treatment.

Prior to treatment, the street will be cleaned of all standing water, dirt, leaves, foreign materials, etc. This work shall be accomplished by hand brooming, power blowing or other approved methods. If in the opinion of the Engineer hand cleaning is not sufficient, a self-propelled street sweeper shall be used.

All sand used during the treatment must be removed no later than 48 hours after treatment of the street. This shall be accomplished by a combination of hand and mechanical sweeping. All turnouts, cul-de-sacs, etc. must be cleaned of any material to the satisfaction of the Engineer. Street sweeping will be included in the price bid per square yard for asphalt rejuvenating agent.

If, after sand is swept and in the opinion of the Engineer a hazardous condition exists on the roadway, the contractor must apply additional sand and sweep same no later than 24 hours following reapplication. No additional compensation will be allowed for reapplication and removal of sand.

**Traffic Control:**

The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh Asphalt Rejuvenator until penetration, in the opinion of the Engineer, has become complete and the area is suitable for traffic. The Contractor shall submit an M.O.T plan indicating all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. M.O.T. and associated devices shall be checked daily and periodically throughout the project for compliance; and where adjustments or corrections are needed, prompt revisions shall be made.
Method of Measurement:

If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be per Square Yard of Asphalt Rejuvenating Agent or as specified in the Bid Form including all items of work described herein. Any item necessary for Asphalt Rejuvenator as detailed in this specification, and not specifically listed in another item in the Bid Form, shall be included in this item.

Basis of Payment:

The quantities to be paid for under this Technical Provision shall be included in the per Square Yard price for Asphalt Rejuvenator or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Asphalt Rejuvenator, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.

Resident Notification: The contractor shall notify all residences and businesses on the street to be treated. The notice be delivered no more than 24 hours prior to the treatment of the road. The notice will have a local phone number that residents may call to ask questions. The notice shall be signs placed at each end of the treatment area. Unsecured notices will not be allowed. The contractor shall also place the notice on the windshield of any parked cars on the street. Hand distribution of this notice will be considered incidental to the contract.

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Exhibit A

PROCEDURE FOR DETERMINING PERCENT LIGHT
TRANSMITTANCE ON ASPHALT
REJUVENATING AGENT

A. SCOPE
This procedure covers the determination of percent light transmittance of the asphalt rejuvenating agent.

B. APPARATUS
1) Container may be either glass, plastic or metal having a capacity of 6,000 ml.
2) Graduated cylinder, 1,000 ml, or greater
3) Light transmittance measuring apparatus, such as Bausch and Lomb or Lumetron spectrophotometer
4) Graduated pipette having 1 ml capacity to 0.01 ml accuracy
5) Suction bulb for use with pipette
6) Test tubes compatible with spectrophotometer, 3/4" X 6, Bausch and Lomb,
   Catalog No. 33-17- 81, (B&L)

C. CALIBRATION OF SPECTROPHOTOMETER

1) Calibrate spectrophotometer as follows: (a) Set wavelength at 580 mu, (b) Allow
   spectrophotometer to warm-up thirty minutes, (c) Zero percent light transmittance (%LT) scale,
   (d) Rinse test tube three times with tap water and fill to top of circle marking on B&L test tube
   or approximately 2/3 full, (e) Place tube in spectrophotometer and set %LT scale at 100, and (f)
   repeat steps (c) and (e) two times or until no further adjustments are necessary.

D. PROCEDURE

1) Shake, stir or otherwise thoroughly mix emulsion to be tested. Place sample of emulsion in
   beaker and allow to stand one minute.
2) Place 2,000 ml tap water in container.
3) Suck 1.00 ml emulsion into pipette using suction bulb. Wipe off outside of pipette.
4) Using suction bulb, blow emulsion into container.
5) Rinse pipette by sucking in diluted emulsion solution and blowing out.
6) Clean pipette with soap or solvent and water. Rinse with acetone.
7) Stir diluted emulsion thoroughly.
8) Rinse out tube to be used with the diluted emulsion three times and fill to top of circle.
9) Calibrate spectrophotometer.
10) Place diluted emulsion sample tube in spectrophotometer, cover and read %LT to nearest
    tenth.
11) Repeat steps 9 and 10 until three identical consecutive readings are achieved.
12) The elapsed time between addition of emulsion to dilution of water and final %LT reading
    should not exceed 5 minutes.

ITB 19-35 CITYWIDE PAVING PROGRAM
TECHNICAL PROVISION
TP-316
Asphaltic Surface Treatment (Chip Seal)

The work specified in this section consists of furnishing and applying a single or double application of bituminous surface treatment on a prepared sub-grade or road base, compacted to the lines, grades, and thickness established by the City and in substantial conformance with the limits established by the owner.

Description: Chip Seal is a pavement surface treatment option that combines a layer of liquid asphalt emulsion or polymer modified liquid asphalt emulsion placed on a prepared base with a layer of aggregate spread and compacted while the asphalt is still liquid.

Materials

Aggregates: Crushed granite conforming to FDOT specifications section 901, table 1 for #89, #78 or #67 gradation for coarse aggregates except as modified herein. The aggregate shall be washed granite obtained from a source approved by the owner. Sampling and testing of aggregate shall be the responsibility of the contractor. Copies of test results from the aggregate supplier shall be furnished to the owner prior to the start of the surface treatment.

<table>
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<tr>
<th>Test on Aggregate</th>
<th>AASHTO</th>
<th>ASTM</th>
<th>Specification</th>
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<tr>
<td>Flat and Elongated Particles in Cover Coat Aggregate</td>
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<tr>
<td>Fractured Face</td>
<td>T 335</td>
<td>D 5821</td>
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<td>Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine</td>
<td>T 96</td>
<td>C 131</td>
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Liquid bituminous material for surface treatment: CRS-2h or CRS-2P liquid bituminous material conforming to FDOT specification section 916 except as modified herein. The CRS-2P bituminous material shall be polymer modified prior to emulsification. The contractor shall certify the liquid bituminous material meets the FDOT specification.

The material shall contain carefully controlled amounts of selected diluents to promote workability and minimize stripping. Additives that enhance pavement performance are subject to approval by the City. The contractor shall certify the liquid bituminous material meets the specification. Further, the emulsion supplier shall receive quarterly certificates of analysis from both the polymer and rejuvenating agent manufacturers. The COAs will be provided to the City upon request.
<table>
<thead>
<tr>
<th>Material Designation</th>
<th>CRS-2P</th>
<th>Test on Emulsion:</th>
<th>AASHTO Test</th>
<th>Min</th>
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<tr>
<td>Elastic Recovery, %</td>
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<td>Ductility, 77°F, 5 cm/min, cm</td>
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<tr>
<td>Polymer Solids Content</td>
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<td>% residue by volume of emulsion</td>
<td>CRS-2H</td>
<td>Test on Emulsion:</td>
<td>T59</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>% oil distillate by volume of emulsion</td>
<td>CRS-2H</td>
<td>Test on Emulsion:</td>
<td>T59</td>
<td>0.5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tests on Residence from Distillation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penetration, 77 °F, 100 g., 5 sec.</td>
</tr>
<tr>
<td>Solubility in Trichloroethylene, %</td>
</tr>
<tr>
<td>Ductility, 77 °F, 5 cm./min., cm.</td>
</tr>
</tbody>
</table>

Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it meets the requirements of this specification. COA shall include, at a minimum, required emulsion properties and percentage of polymer solids in the emulsion.

**Material Samples:** The City will require the Contractor to sample and test each load of emulsion prior to delivery. The Contractor will also provide a sample of the emulsion, on site, prior to commencing work. The City will require the Contractor to provide sample containers and a local Independent testing laboratory for the analyzing of emulsion. The Contractor will be responsible for the cost of the testing. The City reserves the right to test any shipment of emulsion that is believed to be substandard. All samples shall be shipped and stored in clean air tight sealed wide mouth jars or bottles made of plastic. Where these tests identify material outside specification requirements, the City shall require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the City. Further, the City may require the material placed containing the emulsified asphalt outside of specification requirements to be removed and replaced at the sole expense of the contractor or left in place at no pay.

**Equipment**

**Distributor:** The liquid bituminous material shall be applied with a truck mounted, pressure distributor that has been calibrated within the previous twelve (12) months, for transverse and longitudinal application rate. The distributor shall be equipped, maintained and operated so that the bituminous material can be applied at controlled temperatures and rates from .035 to 1.5 gallons per square yard. The distributor shall be capable of applying bituminous material of variable widths up to sixteen (16) feet. The distributor shall uniformly apply the bituminous material to the specified rate with a maximum allowed variation of 0.015 gallons per square yard. Distributor equipment shall include tachometer, accurate volume measuring device, a calibrated tank and a thermometer for measuring the temperature.
of the tank’s contents. Distributors shall be equipped with a heating device, asphalt pump and full circulating spray bars adjustable laterally and vertically. Distributors and transport trailers shall be equipped with a sampling valve. Distributor trucks shall be of the pressure type with insulated tanks. The use of gravity distributors will not be permitted. The valves shall be operated by levers so that one or all valves may be quickly opened or closed in one operation. The valves which control the flow from nozzles shall act positively to provide a uniform unbroken spread of bituminous material on the surface. The distributor shall be equipped with devices and charts to provide for accurate and rapid determination and control of the amount of bituminous material being applied and with a bitometer of the auxiliary wheel type registering speed in feet per minute, and trip and total distance in feet.

**Aggregate Spreader:** The aggregate spreader shall be a self-propelled unit capable of uniformly spreading the aggregate at the required rate on a minimum width of six (6”) inches wider than the width of the lane to be treated. The spreader shall be calibrated within the previous twelve (12) months for transverse and longitudinal application. The spreader shall be equipped with a computer-controlled aggregate/chip spreader in order to ensure the appropriate aggregate coverage at varying speeds, unless approved otherwise by Engineer.

**Pneumatic Tire Rollers:** The contractor shall use eight (8) to twelve (12) ton self-propelled pneumatic tire rollers with oscillating wheels and low pressure, smooth tires. Maintain the inflation of the tires such that in no two tires the air pressure varies more than 5 psi. The rollers will be equipped with an operating water system and coco pads. A sufficient number of rollers and a sufficient number of passes shall be used to ensure cover aggregate is properly rolled.

**Self-Propelled Rotary Power Broom:** The self-propelled rotary broom shall be designed, equipped, maintained and operated so the pavement surface can be swept clean. The broom shall have an adjustment to control the downward pressure.

**Additional equipment:** Additional equipment will be needed to complete the operations required by this technical provision. All equipment necessary for the successful completion of projects governed by this technical provision shall be included in the unit costs associated herein. Availability of quality assurance devices (such as a 15’ straight edge) shall be the responsibility of the Contractor.

**Construction**

**Layout:** The Contractor will be responsible for the string lining and lay out of the roadway prior to paving.

**Weather and Seasonal limitations:** The surface treatment shall not be applied to a wet surface or when rain is occurring, or the threat of rain is present immediately before placement. The surface treatment shall not be applied when the temperature is less than 50 degrees Fahrenheit in the shade. When applying emulsions, the temperature of the surface shall be a minimum of 55°F, and no more than 140°F.

**Preparation of Surface:** The chip seal material shall be placed on a firm unyielding prepared roadway. The Contractor shall be responsible for clipping back shoulders and removing overburden or any other vegetation or debris to ensure that the road is free of organic and deleterious material. The contractor shall be responsible for removal of all thermoplastic striping or signage on the surface of the roadway, and all Reflective Pavement Markers prior to beginning operation. Prior to the scrub seal operation, all drain inlet covers, monument covers, and all other utility covers shall be protected from the operation by applying a sheet of plastic over the exposed facilities, or other methods approved by the City. All traces of plastic, residual emulsion and aggregate shall be removed from covered objects after the application of the scrub seal and/or prior to final inspection of the project. The contractor will be responsible for blowing or sweeping the road immediately ahead of the chip seal operation to make sure the road is free of loose aggregate and other debris.
Application of bituminous material: Liquid bituminous material shall be applied by means of a pressure type distributor in a uniform, continuous spread over the section to be treated. The distributor shall be moving forward at the proper speed when the liquid is discharged onto the pavement to provide an even and consistent application at the rate prescribed. If any areas are deficient the operation shall be stopped and corrected immediately. The liquid shall not be applied more than two hundred (200') feet in advance of the aggregate spreader when the ambient air temperature is above 75 degrees or one hundred (100') feet if the air temperature is below 75 degrees.

- **Single Chip Seal:** Application of the liquid bituminous material shall be applied at a rate of .20 - .50 gallons per square yard depending on the composition of the existing road bed, surface texture and the size of the aggregate in use.
- **Double Chip Seal:** Application of the liquid bituminous material shall be applied at a rate of .50 - .95 gallons per square yard depending on the composition of the existing road bed, surface texture and the size of the aggregate in use. The first application of a double chip shall contain 40% of the emulsion of the total seal, while the second application contains 60% of the emulsion.

Application of cover aggregate: Immediately following the spray application of the liquid bituminous material, cover aggregate shall be spread over the liquid material at a rate of 18 – 30 lbs. square yard depending upon the type of road base and/or the size of the existing aggregate that is being resurfaced.

During the first day of production and at least once a week thereafter, the application rate of the aggregate shall be verified by the contractor and witnessed by the city to assure that the appropriate application rate of the aggregate is applied. The rate can be verified by placing a tarp of at least 1.0 yd² area on the roadway surface. After allowing the aggregate spreader to pass over the tarp, the aggregate on the tarp should be collected and weighed to determine the weight of aggregate. The measured weight should then be compared to the target weight.

Upon determining the target weight, it should be compared to the actual measured weight. If the difference in the target weight and the actual measured weight is over 1.5 pounds, the aggregate distributor should be adjusted such that the spread rate is within the above tolerance. The above procedure shall be repeated until the spread rate is within the allowable tolerance.

If at any point during production, excessive aggregate is noted, the aggregate application rate should be verified, and the spread rate adjusted. The intent is to minimize the amount of excess aggregate. Excess aggregate removed from the roadway surface after brooming shall be removed from the job site and should not be reused in the aggregate operation.

Rolling: Immediately following the first application of the cover material, roll the entire surface with a pneumatic roller, followed immediately with the steel drum roller. Cover the entire surface one time with the steel drum roller. Then, roll the cover material again with the pneumatic roller. Continue rolling as long as necessary to ensure thorough keying of the cover aggregate into the liquid bituminous material. Eliminate the steel drum when rolling the second application of cover aggregate. Apply the second application of liquid and cover material the same day as the first application, as far as it is practicable and consistent with the setting of the liquid bituminous material.

Sweeping: After rolling of the first application of cover aggregate, lightly broom the loose aggregate in a manner not to dislodge the aggregate embedded in the liquid. Sweep loose material from road bed. Following second application again broom loose aggregate from the road bed prior to the application of the fog seal. If temperatures exceed 85 degrees, it may be necessary to wait 24 hours before sweeping the first application of chip seal.
**Fog Seal:** Upon direction from the engineer, fog seal is to be applied as a separate pay item. When surface treatment has set, a fog seal is to be applied at a rate of .1 to .15 gallons per square yard to the entire surface treatment. The liquid for fog seal shall be a cationic mixing type emulsion diluted forty (40%) percent with water. Fog seal shall then be lightly sanded at a rate of plus or minus two (2) pounds per square yard by means of a mechanical spreader.

**General Performance:** Provide completed pavement which performs to the satisfaction of the engineer without bleeding, rutting, shoving, raveling, stripping, or showing other types of pavement distress or unsatisfactory performance.

**Contractor’s Quality Control Plan:** Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the City with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:
- Source materials used on the project.
- Sampling and testing methods used to determine compliance with material specifications.
- Equipment to be used on the project.
- Calibration method used to determine compliance with this specification.
- Pavement cleaning and preparation procedure.
- Plan for protecting chip seal from damage by traffic.
- Procedure for monitoring initial acceptance requirements.
- An action plan demonstrating adjustment of the operation for adverse environmental conditions or out of specification materials or procedures.

**Traffic Control:** The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh mix until all placement operations are completed. The Contractor shall submit an M.O.T. plan indication all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. M.O.T. and associated devices shall be checked daily and periodically throughout the project for compliance. Where adjustments or corrections are needed, prompt revisions shall be made.

**Notes:**

Contractor shall use a string line or other approved method to insure straightness of all paving operations, any deficiencies must be removed by saw cutting the edge of pavement in a straight line; all longitudinal joints shall be in the center of the road. Difficulties and problems shall be reported to the Owner in a timely manner to avoid serious impacts to the project.

The Contractor shall construct a two (2) foot apron at all driveways

**Documentation:** Complete a daily report that includes the following information:
- Job number
- Route/Street Name(s)
- Owner’s On-Site Representative Name
- Date
- Air temperature – Min/Max (during application)
- Unit weight of emulsified asphalt (pounds per gallon)
- Beginning and ending application locations
- Length and width in feet
- Total area (square yards)
- Aggregate weight
• Gallons of emulsified asphalt
• Application rate (pounds/gallons per square yard)
• Contractor’s authorized signature
• QC aggregate properties (if required)
• Asphalt emulsified asphalt bill of lading(s)

Method of Measurement:

If any pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for Chip Seal, and not specifically listed in another item in the Bid Form, shall be included in this item. Should the contractor be directed to place Fog Seal as a secondary application to Chip Seal, it shall be measured separately as listed in the Technical Provision for Fog Seal.

Basis of Payment:

The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for Chip Seal (Single application), Chip Seal (Double application) or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Chip Seal, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications, except that at the direction of the City, Fog Seal shall be applied and paid separately as listed in the Technical Provision for Fog Seal.

TECHNICAL PROVISION TP-316a
Asphaltic Surface Treatment (Rèjuvenating Scrub Seal)

The work specified in this section consists of furnishing and applying a single or double application of bituminous surface treatment on a prepared sub-grade, road base or roadway, compacted to the lines, grades, and thickness established by the City and in substantial conformance with the limits established by the owner.

Description: Scrub Seal is a chip seal that utilizes an emulsion drag broom, used to rehabilitate roads with extensive cracking without having to apply crack seal prior to chip sealing. This process utilizes a cationic, polymer modified asphalt rejuvenating emulsion.

Materials:

Liquid bituminous material for surface treatment: For scrub seal applications, and the first lift of double applications, a liquid bituminous material conforming to the requirements in the scrub table shall be utilized. If project requirements dictate a second lift on top of the scrub seal application, CRS-2P conforming to the requirements of the CRS-2P table below shall be utilized. The contractor shall certify the liquid bituminous material meets the specification. Further, the emulsion supplier shall receive quarterly certificates of analysis from both the polymer and rejuvenating agent manufacturers. The COAs will be provided to the City upon request.
## Material Designation

<table>
<thead>
<tr>
<th>Test on Emulsion:</th>
<th>CRS-2P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AASHTO Test</td>
</tr>
<tr>
<td>Viscosity, Saybolt 122 °F (50 °C), sfs</td>
<td>T59</td>
</tr>
<tr>
<td>Storage Stability Test, 24-h, %*</td>
<td>T59</td>
</tr>
<tr>
<td>Sieve test, %</td>
<td>T59</td>
</tr>
<tr>
<td>Demulsibility, %</td>
<td>T59</td>
</tr>
<tr>
<td>% residue by volume of emulsion</td>
<td>T59</td>
</tr>
<tr>
<td>% oil distillate by volume of emulsion</td>
<td>T59</td>
</tr>
</tbody>
</table>

### Tests on Residue from Distillation:

<table>
<thead>
<tr>
<th></th>
<th>Test</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penetration, 77 °F, 100 g, 5 sec.</td>
<td>T49</td>
<td>90</td>
<td>150</td>
</tr>
<tr>
<td>Elastic Recovery, %</td>
<td>T301</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Ductility 77 °F, 5 cm/min, cm</td>
<td>T51</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Polymer Solids Content, %</td>
<td>T302</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Solubility in Trichloroethylene</td>
<td>T44</td>
<td>97.5</td>
<td></td>
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</table>

## Material Designation - Cationic Asphalt Emulsion

### Emulsion Properties

<table>
<thead>
<tr>
<th>Emulsion Properties</th>
<th>Test</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity, Saybolt Furol, 77 °F (25 °C), SFS</td>
<td>T59</td>
<td>50</td>
<td>350</td>
</tr>
<tr>
<td>Storage Stability Test, 24-h, %</td>
<td>T59</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Oil Distillate, %</td>
<td>T59</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Sieve Test, %</td>
<td>T59</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Residue by Distillation (1) @ 350°F, %</td>
<td>T59</td>
<td>60</td>
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### Residue Properties from Distillation:

<table>
<thead>
<tr>
<th>Residue Properties from Low Temp Evaporation:</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penetration, 4°C (39.2°F), 200 g, 60 sec</td>
<td>T49</td>
</tr>
</tbody>
</table>

### Residue Properties from Low Temp Evaporation:

<table>
<thead>
<tr>
<th>Residue Properties from Low Temp Evaporation:</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSCR @ 52°C, Jnr @ 3.2kPa</td>
<td>ASTM D7405</td>
</tr>
</tbody>
</table>

## Polymer Properties

<table>
<thead>
<tr>
<th></th>
<th>Test</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swelling in rejuvenating agent, % max weight increase: 48 hours</td>
<td>ASTM D471 Mod (2)</td>
<td>40%</td>
<td></td>
</tr>
<tr>
<td>Tensile Strength, PSI</td>
<td>ASTM D412A Mod (2)</td>
<td>800</td>
<td></td>
</tr>
<tr>
<td>Glass Transition Temperature (T_g) – Midpoint by DSC (°C)</td>
<td>ASTM D7426 Mod (2)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Latex Density @ 23°C, (g/cm³)</td>
<td>ASTM D6937 Mod (2)</td>
<td>1.00 1.05</td>
<td></td>
</tr>
<tr>
<td>Latex pH</td>
<td>ASTM E70 Mod (2)</td>
<td>6.0 8.0</td>
<td></td>
</tr>
</tbody>
</table>

## Rejuvenating Agent Properties

<table>
<thead>
<tr>
<th></th>
<th>Test</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point, COC, °F</td>
<td>T48</td>
<td>380</td>
<td></td>
</tr>
<tr>
<td>Viscosity, 140 °F, CST</td>
<td>T201</td>
<td>50</td>
<td>175</td>
</tr>
<tr>
<td>Saturate, % by weight</td>
<td>ASTM D2007</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Asphaltenes</td>
<td>ASTM D2007</td>
<td>1.0</td>
<td></td>
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</tbody>
</table>

## Test on Residue from RTFO

<table>
<thead>
<tr>
<th>Test on Residue from RTFO</th>
<th>Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight change, %w</td>
<td>ASTM D2872</td>
</tr>
<tr>
<td>Viscosity Ratio (RTFO/Orig.)</td>
<td>ASTM D2170</td>
</tr>
</tbody>
</table>

## Test Modifications:

1. Exception to AASHTO T59: Bring the temperature on the lower thermometer slowly to 350 °F plus or minus 10 °F. Maintain this temperature for 20 minutes. Complete the total distillation in 60 plus or minus 5 minutes.


   a. Using a syringe, place 0.8 gm of latex into an 18 mm diameter DSR mold.

   b. Allow the sample to dry at ambient lab conditions (air conditioned) on the bench
for 72 hours. Sample should be easily removable from the mold.

c. Take the “button” out of the mold and place the sample into a forced air oven at 40°C (104°F) for 48 hours (on release paper).
   If at the end of the ambient dry, the sample sticks to the mold, place it into the oven and check it after 1-2 hours.

d. After 48 hours cool and weigh the sample to the nearest 0.0001 gram and record the weight.

e. Put ½ inch of Rejuvenating Agent into a 3 oz penetration tin.

f. Place the “button” on the Rejuvenating Agent, and add another ½ inch of Rejuvenating Agent, so that the “button” is covered.

g. Put the cap on the penetration tin and place it into the 40°C oven for 48 hours.

h. Remove the “button” from the Rejuvenating Agent, blot surface of the “button” to remove excess Rejuvenating Agent, cool the “button” to room temperature and weigh it.

i. Calculate weight gain of the “button”, express as %.

3. ASTM D412A Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension:

   Modifications

   a. To prepare the polymer film, dilute the waterborne polymer to 40% Total Solids Content and pour 57 g into a Teflon or silicone release mold of dimensions 7” X 7” X ¼”.

   b. Allow to dry at 23°C (73 °F) and 50% RH (controlled conditions) for 7 – 10 days total time, during which time the film should be flipped around once, preferably after 3 or 4 days. The film should be transparent in the end.

   c. To drive out any residual water, place the film in an oven at 50°C for 30 min. Dried film thickness should be 25 mil +- 5 mils. Discard films <20 mil.

   d. Cut out dumbbell-shaped test specimens of dimension 75 mm total length, 25 mm mid-section (L) and 4 mm width of mid-section.

   e. Grip in Instron machine with gap size 1 inch, use 8 inch/min cross-head speed.

4. ASTM D7426 Standard Test Method for Assignment of the DSC Procedure for Determining Tg of a Polymer or an Elastomeric Compound Modifications

   a. Use between 3 – 30 mg dry polymer. Instrument used is TA Q2000 Differential Scanning Calorimeter (DSC). Heating rate is 20°C/min.


   a. Replace “Emulsified Asphalt” with “Latex” in text of test method. The testing temperature used should be 25 +/- 3°C. The calculation in Section 7 should be as follows:

      i. Calculation:

         \[
         D = (W_f - W_t) \times 0.1
         \]

         \[
         \text{S.G.} = D / 8.337
         \]

         Where: \( W_f \) = Weight of filled cup (g) \( W_t \) = Weight of empty cup (g)

   a. A pH meter with automatic temperature measurement should be used in the evaluation with a calomel cell assembly or combination electrode. Calibration should be made using the procedure with the pH meter, according to ASTM method, prior to testing the pH of the latex. In Section 9, the procedure for measuring pH of the latex should be as follows:

      i. Place the electrode and probe into the dispersion that is to be measured and swirl the sample cup or beaker gently. (You may also use the probe in a stirring motion.)

      ii. Wait for the reading to stabilize (usually less than a minute) and read/record this value. Note the temperature if not utilizing an ATC probe.

      ii. Take the Electrode and ATC probes from the sample and rinse thoroughly with de-ionized water. Pat dry and place back into appropriate solution recommended by electrode manufacturer for storage.

   End of Test Modifications:

   Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it meets the requirements of this specification. COA shall include, at a minimum, required emulsion properties and percentage of polymer solids in the emulsion.

Material Samples: The City will require the Contractor to sample and test each load of emulsion prior to delivery. The Contractor will also provide a sample of the emulsion, on site, prior to commencing work. The City will require the Contractor to provide sample containers and a local Independent testing laboratory for the analyzing of emulsion. The Contractor will be responsible for the cost of the testing. The City reserves the right to test any shipment of emulsion that is believed to be substandard. All samples shall be shipped and stored in clean air tight sealed wide mouth jars or bottles made of plastic. If requested by the City, samples of rejuvenator and polymer shall also be provided in sample containers for testing by the City. Cost of polymer and rejuvenator testing shall be borne by the City. Where these tests identify material outside specification requirements, the City shall require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the City. Further, the City may require the material placed containing the emulsified asphalt outside of specification requirements to be removed and replaced at the sole expense of the contractor or left in place at no pay.

Aggregates: Crushed granite conforming to FDOT specifications section 901, table 1 for #89, #78 or #7 gradation for coarse aggregates except as modified herein. The aggregate shall be washed granite obtained from a source approved by the City. Sampling and testing of aggregate shall be the responsibility of the contractor. Copies of test results from the aggregate supplier shall be furnished to the City prior to the start of the surface treatment.
<table>
<thead>
<tr>
<th>Test on Aggregate</th>
<th>AASHTO</th>
<th>ASTM</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flat and Elongated Particles in Cover Coat Aggregate</td>
<td></td>
<td></td>
<td>D 4791 Ratio – 3:1 &lt;12%</td>
</tr>
<tr>
<td>Fractured Face</td>
<td>T 335</td>
<td>D 5821</td>
<td>100%</td>
</tr>
<tr>
<td>Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine</td>
<td>T 96</td>
<td>C 131</td>
<td>25% Max</td>
</tr>
</tbody>
</table>

**Equipment:**

**Distributor:** The liquid bituminous material shall be applied with a truck mounted, pressure distributor that has been calibrated within the previous twelve (12) months, for transverse and longitudinal application rate. The distributor shall be equipped, maintained and operated so that the bituminous material can be applied at controlled temperatures and rates from .035 to 1.5 gallons per square yard. The distributor shall be capable of applying bituminous material of variable widths up to sixteen (16) feet. The distributor shall uniformly apply the bituminous material to the specified rate with a maximum allowed variation of 0.015 gallons per square yard. Distributor equipment shall include tachometer, accurate volume measuring device, a calibrated tank and a thermometer for measuring the temperature of the tank’s contents. Distributors shall be equipped with a heating device, asphalt pump and full circulating spray bars adjustable laterally and vertically. Distributors and transport trailers shall be equipped with a sampling valve. Distributor trucks shall be of the pressure type with insulated tanks. The use of gravity distributors will not be permitted. The valves shall be operated by levers so that one or all valves may be quickly opened or closed in one operation. The valves which control the flow from nozzles shall act positively to provide a uniform unbroken spread of bituminous material on the surface. The distributor shall be equipped with devices and charts to provide for accurate and rapid determination and control of the amount of bituminous material being applied and with a bitometer of the auxiliary wheel type registering speed in feet per minute, and trip and total distance in feet.

**Aggregate Spreader:** The aggregate spreader shall be a self-propelled unit capable of uniformly spreading the aggregate at the required rate on a minimum width of six (6") inches wider than the width of the lane to be treated. The spreader shall be calibrated within the previous twelve (12) months for transverse and longitudinal application. The spreader shall be equipped with a computer-controlled aggregate/chip spreader in order to ensure the appropriate aggregate coverage at varying speeds, unless approved otherwise by Engineer.

**Scrub Broom:** A scrub broom as described herein and depicted in the attached diagram shall be used to scrub the emulsion after application. The scrub broom frame shall be constructed of metal. The scrub broom shall be attached to and pulled by the distributor truck. The scrub broom must be equipped with a means of raising and lowering the scrub broom at desired points. It shall be towable in the elevated position to the next area of construction. The weight of the broom assembly shall be such that it does not squeegee the emulsion off the roadway surface.

The main body of the scrub broom shall have a frame size as shown in the diagram at the end of this technical provision. The nearest and furthest members, paralleling the back of the distributor truck, and diagonal members shall be equipped with street brooms. The leading member and the trailing member shall have broom heads angled at 10 to 15 degrees off the centerline of the supporting member as shown in the scrub broom schematic at the end of this technical provision. The diagonal members shall have broom heads attached in line with the centerline of the supporting member. Each individual street
broom attached to the scrub broom assembly shall be 3.5 inches wide x 6.5 inches high x 16 inches long and have stiff nylon bristles. Bristle height is to be maintained at a minimum of five inches (5”). The scrub broom shall be equipped with hinged wing assemblies attached to the main body not to exceed 4.5 feet per side, with diagonals and equipped with street brooms and shall maintain the scrubbing process evenly as contours and cross-sections change across the existing road surface.

**Pneumatic Tire Rollers:** The contractor shall use eight (8) to twelve (12) ton self-propelled pneumatic tire rollers with oscillating wheels and low pressure, smooth tires. Maintain the inflation of the tires such that in no two tires the air pressure varies more than 5 psi. The rollers will be equipped with an operating water system and scrubbing pads. A sufficient number of rollers and a sufficient number of passes shall be used to ensure cover aggregate is properly rolled.

**Self-Propelled Rotary Power Broom:** The self-propelled rotary broom shall be designed, equipped, maintained and operated so the pavement surface can be swept clean. The broom shall have an adjustment to control the downward pressure.

**Additional equipment:** Additional equipment will be needed to complete the operations required by this technical provision. All equipment necessary for the successful completion of projects governed by this technical provision shall be included in the unit costs associated herein. Availability of quality assurance devices (such as a 15' straight edge) shall be the responsibility of the Contractor.

**Construction:**

**Layout:** The Contractor will be responsible for the string lining and lay out of the roadway prior to paving.

**Weather and Seasonal limitations:** The surface treatment shall not be applied to a wet surface or when rain is occurring, or the threat of rain is present immediately before placement. The surface treatment shall not be applied when the ambient temperature or pavement temperature is less than 60°F

**Preparation of Surface:** The chip seal material shall be placed on a firm unyielding prepared roadway. The Contractor shall be responsible for clipping back shoulders and removing overburden or any other vegetation or debris to ensure that the road is free of organic and deleterious material. Cracks in the existing roadway shall be cleaned and blown free of loose or deleterious materials prior to paving. The contractor shall be responsible for removal of all thermoplastic striping or signage on the surface of the roadway, and all Reflective Pavement Markers prior to beginning operation. Prior to the scrub seal operation, all drain inlet covers, monument covers, and all other utility covers shall be protected from the Contractor’s scrub seal operations by applying a sheet of plastic over the exposed facilities, or other methods approved by the Engineer. All traces of plastic, residual emulsion and aggregate shall be removed from covered objects after the application of the scrub seal and/or prior to final inspection of the project. The contractor will be responsible for blowing or sweeping the road immediately ahead of the chip seal operation to make sure the road is free of loose aggregate and other debris.

**Application of bituminous material:** Liquid bituminous material shall be applied at a rate as directed by the city by means of a pressure type distributor in a uniform, continuous spread over the section to be treated. The distributor shall be moving forward at the proper speed when the liquid is discharged onto the pavement to provide an even and consistent application at the rate prescribed. If any areas are deficient the operation shall be stopped and corrected immediately. The liquid shall not be applied more than one hundred (100’) feet in advance of the aggregate.

- **Single Chip Seal:** Application of the liquid bituminous material shall be applied at a rate of .20 - .50 gallons per square yard depending on the composition of the existing road bed, surface texture and the size of the aggregate in use.
- **Double Chip Seal:** Application of the liquid bituminous material shall be applied at a rate of .50 - .95 gallons per square yard depending on the composition of the existing road bed, surface texture and the size of the aggregate in use. The first application of a double chip shall contain 40% of the emulsion of the total seal, while the second application contains 60% of the emulsion.

The temperature of the asphalt emulsion when applied shall be between 140°F and 180°F. For smaller areas, the emulsion may be applied with a wand. On Single Chip Seals, and the first lift of Double Chip Seals, the emulsion shall be immediately broomed to fill cracks and voids. The emulsion scrub broom shall be as described herein.

On Single Chip Seals, and the first lift of Double Chip Seals, the application of the asphalt emulsion for scrub seal and scrub broom operation shall cease an appropriate distance from the end of the application as determined by the contractor. The remaining asphalt emulsion for scrub seal shall be dragged out by the scrub broom, and the remaining emulsified material required to complete the pass shall be applied only by the distributor truck, at the specified rate.

**Application of cover aggregate:** Immediately following the spray application of the liquid bituminous material, cover aggregate shall be spread over the liquid material at a rate of 16 – 30 lbs. square yard as directed by the City depending upon the type of road base and/or the size of the existing aggregate that is being resurfaced.

During the first day of production and at least once a week thereafter, the application rate of the aggregate shall be verified by the contractor and witnessed by the city to assure that the appropriate application rate of the aggregate is applied. The rate can be verified by placing a tarp of at least 1.0 yd² area on the roadway surface. After allowing the aggregate spreader to pass over the tarp, the aggregate on the tarp should be collected and weighed to determine the weight of aggregate. The measured weight should then be compared to the target weight.

If the difference in the target weight and the actual measured weight is over 1.5 pounds, the aggregate distributor should be adjusted such that the spread rate is within the above tolerance. The above procedure shall be repeated until the spread rate is within the allowable tolerance.

If at any point during production, excessive aggregate is noted, the aggregate application rate should be verified, and the spread rate adjusted. The intent is to minimize the amount of excess aggregate. Excess aggregate removed from the roadway surface after brooming shall be removed from the job site and should not be reused in the aggregate operation.

**Rolling:** Immediately following the first application of the cover material, roll the entire surface with a pneumatic roller followed immediately with the steel drum roller. Cover the entire surface one time with the steel drum roller. Then, roll the cover material again with the pneumatic roller. Continue rolling as long as necessary to ensure thorough keying of the cover aggregate into the liquid bituminous material. Eliminate the steel drum when rolling the second application of cover aggregate. Apply the second application of liquid and cover material the same day as the first application, as far as it is practicable and consistent with the setting of the liquid bituminous material. The City may waive the requirement for a steel drum roller given proper seating of aggregate with the pneumatic roller.

**Sweeping:** After rolling of the first application of cover aggregate, lightly broom the loose aggregate in a manner not to dislodge the aggregate embedded in the liquid. Sweep loose material from road bed. Following second application again broom loose aggregate from the road bed prior to the application of the fog seal. If temperatures exceed 85 degrees, it may be necessary to wait 24 hours before sweeping the first application of chip seal.
Fog Seal: Upon direction from the engineer, fog seal is to be applied as a separate pay item. When surface treatment has set, a fog seal is to be applied at a rate of .1 to .15 gallons per square yard to the entire surface treatment. The liquid for fog seal shall be a cationic type emulsion diluted forty (40%) percent with water. Fog seal shall then be lightly sanded at a rate of plus or minus two (2) pounds per square yard by means of a mechanical spreader.

General Performance: Provide completed pavement which performs to the satisfaction of the engineer without bleeding, rutting, shoving, raveling, stripping, or showing other types of pavement distress or unsatisfactory performance.

Contractor’s Quality Control Plan: Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the City with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:

- Source materials used on the project.
- Sampling and testing methods used to determine compliance with material specifications.
- Equipment to be used on the project.
- Calibration method used to determine compliance with this specification.
- Pavement cleaning and preparation procedure.
- Plan for protecting chip seal from damage by traffic.
- Procedure for monitoring initial acceptance requirements.
- An action plan demonstrating adjustment of the operation for adverse environmental conditions or out of specification materials or procedures.

Traffic Control: The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh mix until all placement operations are completed. The Contractor shall submit a MOT plan indication all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with TP-102. MOT and associated devices shall be checked daily and periodically throughout the project for compliance. Where adjustments or corrections are needed, prompt revisions shall be made.

Notes:

Contractor shall use a string line or other approved method to insure straightness of all paving operations, any deficiencies must be removed by saw cutting the edge of pavement in a straight line; all longitudinal joints shall be in the center of the road. Difficulties and problems shall be reported to the owner in a timely manner so as to avoid serious impacts to the project.

The Contractor shall construct a two (2) foot apron at all driveways

Documentation: Complete a daily report that includes the following information:

- Job number
- Route/Street Name(s)
- Owner’s On-Site Representative Name
- Date
- Air temperature – Min/Max (during application)
- Unit weight of emulsified asphalt (pounds per gallon)
- Beginning and ending application locations
- Length and width in feet
- Total area (square yards)
Method of Measurement:

If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for Rejuvenating Scrub Seal, and not specifically listed in another item in the Bid Form, shall be included in this item. Should the contractor be directed to place Fog Seal as a secondary application to Chip Seal, it shall be measured separately as listed in the Technical Provision for Fog Seal.

Basis of Payment:

The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for Rejuvenating Scrub Seal (Single application), Rejuvenating Scrub Seal (Double application) or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Rejuvenating Scrub Seal, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications, except that at the direction of the City, Fog Seal shall be applied and paid separately as listed in the Technical Provision for Fog Seal.
Street Broom w/ Nylon Bristles

Lift For Wheels (Typical)

Note: Wheels are up and the broom is in the scrub position.

Scrub Broom
TECHNICAL PROVISION

TP-317

Micro Surfacing

The work specified in this section consists of placement of a polymer modified Micro Surfacing on a prepared existing paved road, placed within the lines, grades, and thickness established by the City.

Description: Micro Surfacing is a polymer-modified cold-mix paving system consisting of a mixture of dense-graded aggregate, polymer modified asphalt emulsion, water, additives and mineral fillers placed in a slurry state to extend the service life of both urban and rural roads within the City.

Materials:

Emulsified Asphalt: Quick-set cationic type CSS or CQS emulsion with natural or synthetic polymer modifiers conforming to the requirements specified in AASHTO M208 or ASTM D2397 for CQS-1h or CSS-1h.

<table>
<thead>
<tr>
<th>Property</th>
<th>Test Method</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity, Saybolt Furol @ 25°C, Sec.</td>
<td>AASHTO T59</td>
<td>20.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Particle Charge</td>
<td>Positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sieve Test</td>
<td>AASHTO T59</td>
<td></td>
<td>0.1</td>
</tr>
<tr>
<td>Softening Point</td>
<td>AASHTO T53</td>
<td>135°F (57°C)</td>
<td></td>
</tr>
<tr>
<td>Kinematic Viscosity @ 275°F (135° C)</td>
<td>AASHTO T201</td>
<td>650 cSt/sec.</td>
<td></td>
</tr>
<tr>
<td>Distillation:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil distillate, by volume, %</td>
<td>AASHTO T59</td>
<td>---</td>
<td>0.5</td>
</tr>
<tr>
<td>Residue from Distillation, %</td>
<td>AASHTO T59</td>
<td>62.0</td>
<td></td>
</tr>
<tr>
<td>Penetration, 25°C, 100g, 5 sec.</td>
<td>AASHTO T49</td>
<td>40.0</td>
<td>90.0</td>
</tr>
<tr>
<td>Ductility, 77°F, 50 mm/ sec.</td>
<td>AASHTO T51</td>
<td>70.0</td>
<td></td>
</tr>
</tbody>
</table>

It shall pass all applicable storage and settlement tests. The cement mixing test shall be waived for this emulsion. The polymer material shall be milled or blended into the asphalt or emulsifier solution prior to the emulsification process.

The five-day (5) settlement test may be waived, provided job stored emulsion is used within thirty-six (36) hours from the time of the shipment, or the stored material has had additional emulsion blended into it prior to use.

Three percent (3%) polymer solids, based on asphalt weight, pre blended prior to emulsification is considered minimum.

Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it is the same as that used in the mix design. COA shall include, at a minimum, required emulsion properties and percentage of polymer solids in the emulsion.

For the first load of emulsified asphalt produced for the project, the supplier shall submit a sample to the City for testing before use. At any time during application, the City may sample and test all subsequent loads of emulsified asphalt delivered to the project to verify and determine compliance with
specification requirements. Where these tests identify material outside specification requirements, the City shall require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the City. Further, the City may require the material placed containing the emulsified asphalt outside of specification requirements to be removed and replaced at the sole expense of the contractor or left in place at no pay.

**Aggregate:** Use an aggregate consisting of 100% crushed granite. To assure the material is totally crushed, one-hundred percent (100%) of the parent aggregate will be larger than the largest stone in the gradation to be used.

In addition to the requirements of FDOT Standard Specification Sections 901 and 902, when aggregate is tested according to the following test, it should meet these minimum requirements:

<table>
<thead>
<tr>
<th>AASHTO Test No.</th>
<th>ASTM Test No.</th>
<th>Quality</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASHTO T176</td>
<td>ASTM D2419</td>
<td>Sand Equivalent</td>
<td>65 Min</td>
</tr>
<tr>
<td>AASHTO T104</td>
<td>ASTM C88</td>
<td>Soundness</td>
<td>15% Max w/Na₂SO₄</td>
</tr>
<tr>
<td>AASHTO T96</td>
<td>ASTM C131</td>
<td>Abrasion Resistance</td>
<td>25% Max w/MgSO₄</td>
</tr>
</tbody>
</table>

The abrasion test is to be run on the parent aggregate. The aggregate should meet state-approved polishing values. Proven performance may justify the use of aggregates that may not pass all of the above tests, subject to approval by the City.

When tested in accordance with AASHTO T27 (ASTM C136) and AASHTO T11 (ASTM C117), the target (mix design) aggregate gradation (including the mineral filler) shall be within one of the following bands.

<table>
<thead>
<tr>
<th>Sieve Size (mm)</th>
<th>Type II Percent Passing</th>
<th>Type III Percent Passing</th>
<th>Stockpile Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4 (9.5 mm)</td>
<td>100</td>
<td>100</td>
<td>± 5 %</td>
</tr>
<tr>
<td>#4 (4.75 mm)</td>
<td>90 - 100</td>
<td>70 - 90</td>
<td>± 5 %</td>
</tr>
<tr>
<td>#8 (2.36 mm)</td>
<td>65 - 90</td>
<td>45 - 70</td>
<td>± 5 %</td>
</tr>
<tr>
<td>#16 (1.18 mm)</td>
<td>45 - 70</td>
<td>28 - 50</td>
<td>± 5 %</td>
</tr>
<tr>
<td>#30 (600 um)</td>
<td>30 - 50</td>
<td>19 - 34</td>
<td>± 5 %</td>
</tr>
<tr>
<td>#50 (330 um)</td>
<td>18 - 30</td>
<td>12 - 25</td>
<td>± 4 %</td>
</tr>
<tr>
<td>#100 (150 um)</td>
<td>10 - 21</td>
<td>7 - 18</td>
<td>± 3 %</td>
</tr>
<tr>
<td>#200 (75 um)</td>
<td>5 - 15</td>
<td>5 - 15</td>
<td>± 2 %</td>
</tr>
</tbody>
</table>

The job mix (target) gradation shall be within the gradation band for the desired type. After the target gradation has been submitted (this should be the gradation that the mix design is based on), then the percent passing each sieve shall not vary by more than the stockpile tolerance shown in the above table for each individual sieve, and still remain within the gradation band. It is recommended that the percent passing shall not go from the high end to the low end of the range for any two consecutive screens.

The aggregate will be accepted at the job location stockpile or when loading into the support units for delivery to the lay-down machine. The stockpile shall be accepted based on five gradation tests according to AASHTO T2 (ASTM D75). If the average of the five tests is within the gradation
tolerances, then the materials will be accepted. If the tests show the material to be out, the contractor will be given the choice to either remove the material or blend other aggregate with the stockpiled material to bring it into specification. Materials used in blending must meet the quality tests before blending and must be blended in a manner to produce a consistent gradation. If blending is used, it will require that a new mix design be performed. The contractor shall supply copies of the aggregate tickets to the customer within 24 hours of delivery to the job site.

Screening shall be required at the stockpile prior to delivery to the paving machine if there are any problems created by having oversized material in the mix.

Mineral filler: (if required) shall be any recognized brand of non-air entrained Portland cement or hydrated lime that is free from lumps. It may be accepted upon visual inspection. The type and amount of mineral filler needed shall be determined by a laboratory mix design and will be considered as part of the aggregate gradation. An increase or decrease may be permitted when the Micro Surfacing is being placed if it is found to be necessary for better consistency or set times, upon approval by the City and the original mix design engineer.

Water: Potable and free of harmful or deleterious materials.

Additives: Additives may be added to the emulsion mix or any of the component materials to provide the control of the quick-traffic properties. They must be included as part of the mix design and be compatible with the other components of the mix.

Mix Design: The Contractor shall submit to the City for approval a complete mix design prepared and certified by a laboratory which has experience in designing Micro Surfacing and signed and sealed by a professional engineer. After the mix design has been approved, no substitution will be permitted, unless approved by the City. Compatibility of the aggregate, polymer-modified emulsion, mineral filler, and other additives shall be verified by the mix design. The mix design shall be made with the same aggregate gradation that the contractor will provide on the project. Required tests and values are as follows:

<table>
<thead>
<tr>
<th>ISSA Test No.</th>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISSA TB-113</td>
<td>Mix Time @ 77°F (25°C)</td>
<td>Controllable to 120 Seconds Min</td>
</tr>
<tr>
<td>ISSA TB-139</td>
<td>Wet Cohesion</td>
<td>12 Kg-cm Min</td>
</tr>
<tr>
<td></td>
<td>@ 30 Minutes Minimum (Set)</td>
<td>20 Kg-cm Min or Near Spin</td>
</tr>
<tr>
<td>ISSA TB-109</td>
<td>Excess Asphalt by LWT Sand Adhesion</td>
<td>50 g/ft² Max (538 g/m² Max)</td>
</tr>
<tr>
<td>ISSA TB-114</td>
<td>Wet Stripping</td>
<td>Pass (90% Min)</td>
</tr>
<tr>
<td>ISSA TB-147</td>
<td>Lateral Displacement</td>
<td>5% Max</td>
</tr>
<tr>
<td></td>
<td>Specific Gravity after 1,000 Cycles of 125 lbs. (56.71 Kg)</td>
<td>2.10% Max</td>
</tr>
<tr>
<td>ISSA TB-100</td>
<td>Wet-Track Abrasion Loss One-hour Soak Six-day Soak</td>
<td>50 g/ft² (538 g/m²) Max</td>
</tr>
<tr>
<td></td>
<td></td>
<td>75 g/ft² (807 g/m²) Max</td>
</tr>
</tbody>
</table>

The Wet Track Abrasion test is performed under laboratory conditions as a component of the mix design process. The purpose of this test is to determine the minimum asphalt content of a micro surface system. The Wet Track Abrasion Test is not recommended as a field quality control or acceptance test.
The mixing test is used to predict how long the material can be mixed in the machines before it begins to break. It is more for information to be used by the contractor than for quality of the end product.

The mixing test and set-time test should be checked at the highest temperatures expected during construction.

The mix design should report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effect). The report must clearly show the proportions of aggregate, mineral filler (minimum and maximum), water (minimum and maximum), additive usage, and polymer-modified asphalt emulsion based on the dry weight of the aggregate.

All the component materials used in the mix design shall be representative of the materials proposed by the contractor to be used on the project. The percentages of each individual material required and allowable tolerance for each shall be shown in the laboratory report.

<table>
<thead>
<tr>
<th>Component Materials</th>
<th>Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual Asphalt</td>
<td>7% to 10.5% by dry weight of aggregate</td>
</tr>
<tr>
<td>Mineral Filler</td>
<td>0.5 to 3% by dry weight of aggregate</td>
</tr>
<tr>
<td>Polymer-Based Modifier</td>
<td>Min 3% solids based on bitumen weight content</td>
</tr>
<tr>
<td>Additives</td>
<td>As needed</td>
</tr>
<tr>
<td>Water</td>
<td>As required to produce proper mix consistency</td>
</tr>
</tbody>
</table>

After the mix design has been approved, no substitutions to the mix design will be permitted, unless approved by the City. The City will consider inadequate field performance of a mix as sufficient evidence that the properties of the mix related to the mix design have changed. The project will be stopped until it is demonstrated that those properties, or issues, have been sufficiently addressed. The City may require the material represented by the inadequate field performance to be removed and replaced at the sole expense of the contractor or left in place at no pay.

The materials (aggregates, emulsion, mineral filler, and additives) must be from the same source, grade, and type used to develop the approved mix design. Any substitutions or alternate supplies must be preapproved by the City. Changes in the aggregate source or emulsion supplier requires a new mix design. Blending, co-mingling and otherwise combining materials from two or more sources, grades, or types not noted in the approved mix design is strictly prohibited. Aggregate stockpiles and emulsion material should be located at or near the job site in sufficient quantity for the job or designated parts of the job.

Equipment:

**Mixing Equipment:** The machine shall be specifically designed and manufactured to lay Micro Surfacing. The material shall be mixed by an automatic-sequenced, self-propelled Micro Surfacing mixing machine, which shall be able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral filler, control setting additive, and water to a revolving multi-blade, double-shafted mixer and to discharge the mixed product on a continuous-flow basis.

The machine shall have sufficient storage capacity for aggregate, emulsified asphalt, mineral filler, control additive and water to maintain an adequate supply to the proportioning controls.

If continuous mix paving machines are required for the project, the machine shall be equipped to allow the operator to have full control, from the rear of the machine, of the forward and reverse speeds during
applications of the Micro Surfacing material and be equipped with opposite-side driver stations to assist in alignment. The self-loading device, opposite-side driver stations, and forward and reverse speed controls shall be original equipment manufacturer design.

**Proportioning Devices:** Individual volume or weight controls for proportioning each material to be added to the mix (i.e. aggregate, mineral filler, emulsified asphalt, additive, and water) shall be provided and properly marked. These proportioning devices are used in material calibration and determining the material output at any time.

**Spreading Device:** The mixture shall be agitated and spread uniformly in the surfacing box by means of twin-shafted paddles or spiral augers fixed in the spreader box. A front seal shall be provided to insure no loss of the mixture at the road contact point. The rear seal shall act as a final strike-off and shall be adjustable. The spreader box and rear strike-off shall be so designed and operated that a uniform consistency is achieved to produce a free flow of material to the rear strike-off. The spreader box shall have suitable means provided to side shift the box to compensate for variations in the pavement geometry.

**Secondary Strike-off:** A secondary strike-off shall be provided to improve surface texture. The secondary strike-off shall have the same adjustments as the spreader box. No burlap drags will be permitted on the final applications.

**Rut-Filling Box:** When required, before the final surface course is placed, preliminary Micro Surfacing material may be required to fill ruts, utility cuts, depressions in the existing surface, etc. Ruts of one-half (½) inch or greater in depth shall be filled independently with a rut-filling spreader box, either five-foot (5) or six-foot (6) width. For irregular or shallow rutting of less than one-half (½) inch depth, a full-width scratch-coat pass may be used as directed by the City. Ruts that are in excess of one and one-half (1-½) inches in depth may require multiple placements with the rut-filling spreader box to restore the cross-section. All rut-filling level-up material should cure under traffic for at least a twenty-four (24) hour period before additional material is placed on top of the level-up.

**Auxiliary Equipment:** Suitable surface preparation equipment, traffic control equipment, hand tools, and any other support and safety equipment shall be provided by the contractor as necessary, (or as the City requires) to perform the work.

**General:** Each mixing unit to be used in the performance of the work shall be calibrated in the presence of the City prior to construction. Previous calibration documentation covering the exact materials to be used may be acceptable, provided that no more than sixty (60) days have lapsed. The documentation shall include an individual calibration of each material at various settings, which can be related to the machine metering devices. No machine will be allowed to work on the project until the calibration has been completed and/or accepted.

All equipment, tools, and machines used in the performance of this work shall be maintained in satisfactory working condition at all times to ensure a high-quality product. Availability of quality assurance devices (such as a 15' straight edge) shall be the responsibility of the Contractor.

**Construction:**

**Weather Limitations:** Micro Surfacing shall not be applied if either the pavement or air temperature is below 50°F and falling but may be applied when both pavement and air temperatures are above 45°F and rising. No Micro Surfacing shall be applied when there is the possibility that the finished product will freeze within 24 hours. The mixture shall not be applied when weather conditions prolong opening to traffic beyond a reasonable time or as directed by the City.
Surface Preparation: Immediately prior to applying the Micro Surfacing, the surface shall be cleared of all loose material, silt spots, vegetation, and other objectionable material. Any standard cleaning method will be acceptable. If water is used, cracks shall be allowed to dry thoroughly before applying Micro Surfacing. Manholes, valve boxes, drop inlets and other service entrances shall be protected from the Micro Surfacing by a suitable method. The City shall approve the surface preparation prior to surfacing. No dry aggregate either spilled from the lay-down machine or existing on the road, will be permitted. Remove any thermoplastic traffic striping or reflective pavement markers in the areas to be Micro Surfaced.

Tack Coat: The City may require placement of a tack coat prior to paving. If required, the tack coat shall consist of one-part emulsified asphalt to three parts water and shall be applied with a standard distributor. The emulsified asphalt should be CQS or CSS grade, or the slurry seal emulsion. The distributor shall be capable of applying the dilution evenly at a rate of 0.05 to 0.15 gal/yard². The tack coat shall be allowed to cure sufficiently before the application of Micro Surfacing. If a tack coat is required, it shall be billed as a separate pay item.

Cracks: Unless otherwise instructed by the City, treat cracks wider than 0.25” in the pavement surface with an approved crack sealer prior to application of the Micro Surface.

Application: A 500 ft minimum test strip shall be placed in conditions similar to those expected to be encountered during the project unless specifically waived by the City. The test strip shall demonstrate that the equipment used, crew selected and materials to be incorporated into the product are performing as required to meet specifications.

The surface shall be pre-wetted ahead of the spreader box. The rate of application of the spray shall be adjusted during the day to suit temperatures, surface texture, humidity, and dryness of the pavement.

The Micro Surfacing shall be of the desired consistency upon leaving the mixer. A sufficient amount of material shall be carried in all parts of the spreader at all times so that a complete coverage is obtained. Overloading of the spreader shall be avoided. No lumping, balling, or unmixed aggregate shall be permitted.

No streaks, such as those caused by oversized aggregate, shall be left in the finished surface. If excess streaking develops, the job will be stopped until the contractor proves to the Project Manager or his/her designee that the situation has been corrected. Excessive streaking is defined as more than four drag marks greater than one-half (½) inch wide and four inches (4) long, or one-inch (1) wide and three (3) inches long, in any 30 yard² area. No transverse ripples or longitudinal streaks of one-fourth (¼) inch in depth will be permitted, when measured by placing a ten (10) foot straight edge over the surface.

The Micro Surfacing mixture shall be of the proper consistency at all times, so as to provide the application rate required by the surface condition. The average application rate, as measured by the Project Manager, shall be in accordance with the following table:

<table>
<thead>
<tr>
<th>Aggregate Type</th>
<th>Location</th>
<th>Suggested Application Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single application</td>
<td>Urban and Residential Streets</td>
<td>Type II - 18 - 22 lb/yard²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type III - 22 - 26 lb/yard²</td>
</tr>
<tr>
<td>Double application</td>
<td>Urban, Residential, and Primary Routes</td>
<td>Type II - 32 - 40 lb/yard²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type III - 42 - 50 lb/yard²</td>
</tr>
<tr>
<td>Rut Fill</td>
<td>Wheel Ruts</td>
<td>Tonnage As Required and Approved by City</td>
</tr>
</tbody>
</table>

ITB 19-35 CITYWIDE PAVING PROGRAM
Application rates are based upon the weight of dry aggregate in the mixture. Application rates are affected by the unit weight of the aggregate. The contractor shall calculate the yield of the course placed at least three times per day. The City shall randomly determine the timing for the readings used to calculate application rate.

Single applications shall be applied in single passes, and Double applications in two, full width passes. When two passes are used, the first pass (scratch course) is made using a metal or stiff rubber strike-off and applying only what the surface demands for leveling. The second course is applied at 15 – 30 lb/yd².

**Opening to Traffic:** Micro Surfacing shall be capable of producing an emulsified asphalt paving mixture that will cure at a rate which will permit straight rolling traffic on the pavement within one hour after application without damaging the pavement surface. Any damage done by traffic to the Micro Surfacing shall be repaired by the contractor at his expense.

**Joints:** No excess buildup, uncovered areas, or unsightly appearance shall be permitted on longitudinal or transverse joints. The contractor shall provide suitable-width spreading equipment to produce a minimum number of longitudinal joints throughout the project. When possible, longitudinal joints shall be placed on lane lines. Half passes and odd-width passes will be used only in minimum amounts. If half passes are used, they shall not be the last pass of any paved area. A maximum of three (3) inches shall be allowed for overlap of longitudinal lane line joints. Also, the joint shall have no more than a one-fourth (¼) inch difference in elevation when measured by placing a ten (10) foot straight edge over the joint and measuring the elevation drop-off.

**Mix Stability:** The Micro Surfacing shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and spreading. It shall be free of excess water or emulsion and free of segregation of the emulsion and aggregate fines from the coarser aggregate. Under no circumstances shall water be sprayed directly into the lay-down box while laying Micro Surfacing material.

**Handwork:** Areas which cannot be reached with the machine shall be surfaced using hand squeegees to provide uniform coverage. If necessary, the area to be hand worked shall be lightly dampened prior to mix placement. Care shall be exercised to leave no unsightly appearance from hand work. The same type of finish as applied by the spreader box shall be required.

**Edge lines:** Care shall be taken to ensure straight lines along curbs and shoulders. No runoff on these areas will be permitted. Lines at intersections will be kept straight to provide a good appearance. If necessary, a suitable material will be used to mask off the end of streets to provide straight lines. Edge lines shall not vary by more than ± 2 inches horizontal variance in any 96 feet of length.

**Clean-up:** All areas, such as man-ways, gutters, and intersections, shall have the Micro Surfacing mix removed as specified by the City. The contractor shall, on a daily basis, remove any debris associated with the performance of the work, completely and thoroughly to the satisfaction of the City. In addition, the contractor shall, at the request of the City pressure wash any area such as, curb and gutter, private driveways, etc. removing any and all stains associated with the placement of the Micro Surfacing.

**General Performance:**
Provide completed pavement which performs to the satisfaction of the City without bleeding, rutting, shoving, raveling, stripping, or showing other types of pavement distress or unsatisfactory performance.
Contractor’s Quality Control Plan: Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the City with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:

- Source materials used on the project.
- Sampling and testing methods used to determine compliance with material specifications.
- Equipment to be used on the project.
- Calibration method used to determine compliance with the mix design.
- Pavement cleaning and preparation procedure.
- Plan for protecting slurry seal mixture from damage by traffic.
- Procedure for monitoring initial acceptance requirements.
- An action plan demonstrating adjustment of the slurry seal operation for adverse environmental conditions.

Testing: The City may obtain one or more samples of Micro Surfacing mixture for each day of production. Tests samples shall be collected and performed in accordance with AASHTO T308 and AASHTO T30 to determine the residual asphalt content and the gradation of the sample. Evaporate all water from the sample prior to testing. Determine the deviation of the test results for each sample from the mix design target values. Compare the deviation from the mix design to the mixture control tolerances shown here:

<table>
<thead>
<tr>
<th>Aggregate and Emulsified Asphalt - Acceptance Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate</td>
</tr>
<tr>
<td>Percent Passing No. 4 Sieve</td>
</tr>
<tr>
<td>Percent Passing No. 8 Sieve</td>
</tr>
<tr>
<td>Percent Passing No. 50 Sieve</td>
</tr>
<tr>
<td>Percent Passing No. 200 Sieve</td>
</tr>
<tr>
<td>Emulsified Asphalt</td>
</tr>
<tr>
<td>Residual Asphalt Content of Mixture</td>
</tr>
<tr>
<td>Residual Asphalt Content of (daily average)</td>
</tr>
<tr>
<td>Application Rate (1,000 ft yield checks)</td>
</tr>
<tr>
<td>Sand Equivalent Test (ASTM D2419)</td>
</tr>
</tbody>
</table>

Documentation: Complete a daily report that includes the following information:

- Job number
- Route/Street Name(s)
- Owner’s On-Site Representative Name
- Date
- Air temperature – Min/Max (during application)
- Unit weight of emulsified asphalt (pounds per gallon)
- Beginning and ending application locations
- Counter readings (beginning, ending, and total difference)
- Total area (square yards)
- Aggregate weight
- Gallons of emulsified asphalt
- Application rate (pounds per square yard)
- Contractor’s authorized signature
- QC aggregate properties (if required)
- Asphalt emulsified asphalt bill of lading(s)
Traffic Control:

The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh mix until all operations have been completed and the micro surface is sufficiently dry to keep vehicular traffic from marking the mat. The Contractor shall submit an MOT plan indicating all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. MOT and associated devices shall be checked daily and periodically throughout the project for compliance; and where adjustments or corrections are needed, prompt revisions shall be made. The Contractor shall construct a two (2) foot apron at all driveways.

Method of Measurement:

If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for Micro Surfacing, and not specifically listed in another item in the Bid Form, shall be included in this item.

Basis of Payment:

The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for Micro Surfacing (Single application), Micro Surfacing (Double application), the per Ton price for Micro Surfacing (Rut filling) and the Square Yard price for Tack Coat or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Micro Surfacing, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.

TECHNICAL PROVISION
TP-317a
High Polymer Micro Surfacing

The work specified in this section consists of placement of a highly polymer modified Micro Surfacing on a prepared existing paved road, placed within the lines, grades, and thickness established by the City.

Description: High Polymer Micro Surfacing is a polymer-modified cold-mix paving system that begins as a mixture of dense-graded aggregate, polymer modified asphalt emulsion, water, and mineral fillers placed in a slurry state at ambient air temperature to extend the service life of both urban and rural roads within the City. Standard Micro Surfacing contains modified asphalt emulsion at a rate of 3% solids while highly modified systems contain a minimum of 6%.

Materials:

Emulsified Asphalt: Quick-set cationic type CSS or CQS emulsion with natural or synthetic polymer modifiers conforming to the requirements specified below:
<table>
<thead>
<tr>
<th>Property</th>
<th>AASHTO Test Method</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Base Properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Original DSR, kPa (G/sin δ, 10 rad./sec) @ 76°C</td>
<td>T135</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Viscosity, Saybolt Furol @ 122°F, SFS</td>
<td>T59</td>
<td>15.0</td>
<td>150.0</td>
</tr>
<tr>
<td>Particle Charge</td>
<td>Positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sieve Test</td>
<td>T59</td>
<td>---</td>
<td>0.1</td>
</tr>
<tr>
<td>Residue by Evaporation</td>
<td>T59</td>
<td>62.0</td>
<td></td>
</tr>
<tr>
<td>Residue Properties from Low Temperature Evaporation</td>
<td>PP72-11, Procedure B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSCR @ 64°C, Recovery @ 3.2 kPa, %</td>
<td>M332</td>
<td>80.0</td>
<td></td>
</tr>
<tr>
<td>J_{r} @ 3.2/kPa</td>
<td>M332</td>
<td>---</td>
<td>0.5</td>
</tr>
</tbody>
</table>

It shall pass all applicable storage and settlement tests. The cement mixing test shall be waived for this emulsion. The polymer material shall be milled or blended into the asphalt or emulsifier solution prior to the emulsification process.

The five-day (5) settlement test may be waived, provided job stored emulsion is used within thirty-six (36) hours from the time of the shipment, or the stored material has had additional emulsion blended into it prior to use.

Six percent (6%) polymer solids, based on asphalt weight, pre blended prior to emulsification is considered minimum.

Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it is the same as that used in the mix design. COA shall include, at a minimum, required emulsion properties and percentage of polymer solids in the emulsion.

For the first load of emulsified asphalt produced for the project, the supplier shall submit a sample to the City for testing before use. At any time during application, the City may sample and test all subsequent loads of emulsified asphalt delivered to the project to verify and determine compliance with specification requirements. The cost of testing will be paid by the contractor. Where these tests identify material outside specification requirements, the City shall require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the City. Further, the City may require the material placed containing the emulsified asphalt outside of specification requirements to be removed and replaced at the sole expense of the contractor or left in place at no pay.

**Aggregate:** Use an aggregate consisting of 100% crushed granite. To assure the material is totally crushed, one-hundred percent (100%) of the parent aggregate will be larger than the largest stone in the gradation to be used.

In addition to the requirements of FDOT Standard Specification Sections 901 and 902, when aggregate is tested according to the following test, it should meet these minimum requirements:

<table>
<thead>
<tr>
<th>AASHTO Test No.</th>
<th>ASTM Test No.</th>
<th>Quality</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASHTO T176</td>
<td>ASTM D2419</td>
<td>Sand Equivalent</td>
<td>65 Min</td>
</tr>
<tr>
<td>AASHTO T104</td>
<td>ASTM C88</td>
<td>Soundness</td>
<td>15% Max w/Na₂SO₄</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25% Max w/MgSO₄</td>
</tr>
<tr>
<td>AASHTO T96</td>
<td>ASTM C131</td>
<td>Abrasion Resistance</td>
<td>30% Max</td>
</tr>
<tr>
<td>AASHTO T278/279</td>
<td></td>
<td>Polish Value</td>
<td>31 Min</td>
</tr>
</tbody>
</table>
The abrasion test is to be run on the parent aggregate. The aggregate shall meet state-approved polishing values. Proven performance may justify the use of aggregates that may not pass all of the above tests, subject to approval by the City.

When tested in accordance with AASHTO T27 (ASTM C136) and AASHTO T11 (ASTM C117), the target (mix design) aggregate gradation (including the mineral filler) shall be within one of the following bands.

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Type II Percent Passing</th>
<th>Type III Percent Passing</th>
<th>Stockpile Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>%10</td>
<td>90 - 100</td>
<td>70 - 90</td>
<td>± 6 %</td>
</tr>
<tr>
<td>#4</td>
<td>65 - 90</td>
<td>45 - 70</td>
<td>± 5 %</td>
</tr>
<tr>
<td>#8</td>
<td>45 - 70</td>
<td>30 - 50</td>
<td>± 5 %</td>
</tr>
<tr>
<td>#16</td>
<td>30 - 50</td>
<td>20 - 35</td>
<td>± 4 %</td>
</tr>
<tr>
<td>#30</td>
<td>18 - 30</td>
<td>12 - 25</td>
<td>± 4 %</td>
</tr>
<tr>
<td>#50</td>
<td>10 - 21</td>
<td>7 - 18</td>
<td>± 3 %</td>
</tr>
<tr>
<td>#200</td>
<td>5 - 15</td>
<td>5 - 15</td>
<td>± 3 %</td>
</tr>
</tbody>
</table>

The job mix (target) gradation shall be within the gradation band for the desired type. After the target gradation has been submitted (this should be the gradation that the mix design is based on), then the percent passing each sieve shall not vary by more than the stockpile tolerance shown in the above table for each individual sieve, and still remain within the gradation band. It is recommended that the percent passing shall not go from the high end to the low end of the range for any two consecutive screens.

The aggregate will be accepted at the job location stockpile or when loading into the support units for delivery to the lay-down machine. The stockpile shall be accepted based on five gradation tests according to AASHTO T2 (ASTM D75). If the average of the five tests is within the gradation tolerances and one sand equivalent test meets the requirements the materials will be accepted. If the tests show the material to be out, the contractor will be given the choice to either remove the material or blend other aggregate with the stockpiled material to bring it into specification. Materials used in blending must meet the quality tests before blending and must be blended in a manner to produce a consistent gradation. If blending is used, it will require that a new mix design be performed. The contractor shall supply copies of the aggregate tickets to the customer within 24 hours of delivery to the job site. The cost of testing will be paid by the contractor.

Screening shall be required at the stockpile prior to delivery to the paving machine if there are any problems created by having oversize material in the mix.

Mineral filler: (if required) shall be any recognized brand of non-air entrained Portland cement or hydrated lime that is free from lumps. It may be accepted upon visual inspection. The type and amount of mineral filler needed shall be determined by a laboratory mix design and will be considered as part of the aggregate gradation. An increase or decrease may be permitted when the Micro Surfacing is being placed if it is found to be necessary for better consistency or set times, upon approval by the City and the original mix design engineer.

Water: Potable and free of harmful or deleterious materials.

Additives: Additives may be added to the emulsion mix or any of the component materials to provide the control of the quick-traffic properties. They must be included as part of the mix design and be compatible with the other components of the mix.
Mix Design: The Contractor shall submit to the City for approval a complete mix design prepared and certified by a laboratory which has experience in designing Micro Surfacing and signed and sealed by a professional engineer. After the mix design has been approved, no substitution will be permitted, unless approved by the City. Compatibility of the aggregate, polymer-modified emulsion, mineral filler, and other additives shall be verified by the mix design. The mix design shall be made with the same aggregate gradation that the contractor will provide on the project. Required tests and values are as follows:

<table>
<thead>
<tr>
<th>ISSA Test No.</th>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISSA TB-100</td>
<td>Wet-Track Abrasion Loss</td>
<td></td>
</tr>
<tr>
<td></td>
<td>One-hour Soak</td>
<td>50 g/ft² (538 g/m²) Max</td>
</tr>
<tr>
<td></td>
<td>Six-day Soak</td>
<td>75 g/ft² (807 g/m²) Max</td>
</tr>
<tr>
<td>ISSA TB-102</td>
<td>Water Resistance, 30 Min</td>
<td>No Discoloration</td>
</tr>
<tr>
<td>ISSA TB-109</td>
<td>Excess Asphalt by LWT Sand Adhesion</td>
<td>50 g/ft² Max (538 g/m² Max)</td>
</tr>
<tr>
<td>ISSA TB-113</td>
<td>Mix Time @ 77°F (25°C)</td>
<td>Controllable to 120 Seconds Min</td>
</tr>
<tr>
<td>ISSA TB-114</td>
<td>Wet Stripping</td>
<td>Pass (90% Min)</td>
</tr>
<tr>
<td>ISSA TB-115</td>
<td>System Compatibility</td>
<td>Pass</td>
</tr>
<tr>
<td>ISSA TB-139</td>
<td>Wet Cohesion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>@ 30 Minutes Min (Set)</td>
<td>12 Kg-cm Min</td>
</tr>
<tr>
<td></td>
<td>@ 60 Minutes Min (Traffic)</td>
<td>20 Kg-cm Min or Near SPin</td>
</tr>
<tr>
<td>ISSA TB-144</td>
<td>System Compatibility, Min Grade</td>
<td>11 points</td>
</tr>
<tr>
<td>ISSA TB-147A</td>
<td>Vertical Displacement</td>
<td>10% Max</td>
</tr>
</tbody>
</table>

The Wet Track Abrasion test is performed under laboratory conditions as a component of the mix design process. The purpose of this test is to determine the minimum asphalt content of a micro surface system. The Wet Track Abrasion Test is not recommended as a field quality control or acceptance test.

The mixing test is used to predict how long the material can be mixed in the machines before it begins to break. It is more for information to be used by the contractor than for quality of the end product.

The mixing test and set-time test should be checked at the highest temperatures expected during construction.

The mix design should report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effect). The report must clearly show the proportions of aggregate, mineral filler (minimum and maximum), water (minimum and maximum), additive usage, and polymer-modified asphalt emulsion based on the dry weight of the aggregate.

All the component materials used in the mix design shall be representative of the materials proposed by the contractor to be used on the project. The percentages of each individual material required shall be shown in the laboratory report.

<table>
<thead>
<tr>
<th>Component Materials</th>
<th>Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual Asphalt</td>
<td>6% to 9% by dry weight of aggregate</td>
</tr>
<tr>
<td>Mineral Filler</td>
<td>0.5 to 3% by dry weight of aggregate</td>
</tr>
<tr>
<td>Polymer-Based Modifier</td>
<td>Min 6% solids based on bitumen weight content</td>
</tr>
<tr>
<td>Additives</td>
<td>As needed</td>
</tr>
<tr>
<td>Water</td>
<td>As required to produce proper mix consistency</td>
</tr>
</tbody>
</table>
After the mix design has been approved, no substitutions to the mix design will be permitted, unless approved by the City. The City will consider inadequate field performance of a mix as sufficient evidence that the properties of the mix related to the mix design have changed. The project will be stopped until it is demonstrated that those properties, or issues, have been sufficiently addressed. The City may require the material represented by the inadequate field performance to be removed and replaced at the sole expense of the contractor or left in place at no pay.

The materials (aggregates, emulsion, mineral filler, and additives) must be from the same source, grade, and type used to develop the approved mix design. Any substitutions or alternate supplies must be preapproved by the City. Changes in the aggregate source or emulsion source requires a new mix design. Blending, co-mingling and otherwise combining materials from two or more sources, grades, or types not noted in the approved mix design is strictly prohibited. Aggregate stockpiles and emulsion material should be located at or near the job site in sufficient quantity for the job or designated parts of the job.

**Equipment:**

**Mixing Equipment:** The machine shall be specifically designed and manufactured to lay Micro Surfacing. The material shall be mixed by an automatic-sequenced, self-propelled Micro Surfacing mixing machine, which shall be able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral filler, control setting additive, and water to a revolving multi-blade, double-shafted mixer and to discharge the mixed product on a continuous-flow basis.

The machine shall have sufficient storage capacity for aggregate, emulsified asphalt, mineral filler, control additive and water to maintain an adequate supply to the proportioning controls.

If continuous mix paving machines are required for the project, the machine shall be equipped to allow the operator to have full control, from the rear of the machine, of the forward and reverse speeds during applications of the Micro Surfacing material and be equipped with opposite-side driver stations to assist in alignment. The self-loading device, opposite-side driver stations, and forward and reverse speed controls shall be original equipment manufacturer design.

**Proportioning Devices:** Individual volume or weight controls for proportioning each material to be added to the mix (i.e. aggregate, mineral filler, emulsified asphalt, additive, and water) shall be provided and properly marked. These proportioning devices are used in material calibration and determining the material output at any time.

**Spreading Device:** The mixture shall be agitated and spread uniformly in the surfacing box by means of twin-shafted paddles or spiral augers fixed in the spreader box. A front seal shall be provided to insure no loss of the mixture at the road contact point. The rear seal shall act as a final strike-off and shall be adjustable. The spreader box and rear strike-off shall be so designed and operated that a uniform consistency is achieved to produce a free flow of material to the rear strike-off. The spreader box shall have suitable means provided to side shift the box to compensate for variations in the pavement geometry.

**Secondary Strike-off:** A secondary strike-off shall be provided to improve surface texture. The secondary strike-off shall have the same adjustments as the spreader box. No burlap drags will be permitted on the final applications.
Rut-Filling Box: When required, before the final surface course is placed, preliminary Micro Surfacing material may be required to fill ruts, utility cuts, depressions in the existing surface, etc. Ruts of one-half (½) inch or greater in depth shall be filled independently with a rut-filling spreader box, either five-foot (5) or six-foot (6) width. For irregular or shallow rutting of less than one-half (½) inch depth, a full-width scratch-coat pass may be used as directed by the City. Ruts that are in excess of one and one-half (1 1/2) inches in depth may require multiple placements with the rut-filling spreader box to restore the cross-section. All rut-filling level-up material should cure under traffic for at least a twenty-four (24) hour period before additional material is placed on top of the level-up.

Auxiliary Equipment: Suitable surface preparation equipment, traffic control equipment, hand tools, and any other support and safety equipment shall be provided by the contractor as necessary, (or as the City requires) to perform the work.

General: Each mixing unit to be used in the performance of the work shall be calibrated in the presence of the City prior to construction. Previous calibration documentation covering the exact materials to be used may be acceptable, provided that no more than sixty (60) days have lapsed. The documentation shall include an individual calibration of each material at various settings, which can be related to the machine metering devices. No machine will be allowed to work on the project until the calibration has been completed and/or accepted.

All equipment, tools, and machines used in the performance of this work shall be maintained in satisfactory working condition at all times to ensure a high-quality product. Availability of quality assurance devices (such as a 15’ straight edge) shall be the responsibility of the Contractor.

Construction:

Weather Limitations: Micro Surfacing shall not be applied if either the pavement or air temperature is below 50°F and falling but may be applied when both pavement and air temperatures are above 45°F and rising. No Micro Surfacing shall be applied when there is the possibility that the finished product will freeze within 24 hours. The mixture shall not be applied when weather conditions prolong opening to traffic beyond a reasonable time or as directed by the City.

Surface Preparation: Immediately prior to applying the Micro Surfacing, the surface shall be cleared of all loose material, silt spots, vegetation, and other objectionable material. Any standard cleaning method will be acceptable. If water is used, cracks shall be allowed to dry thoroughly before applying Micro Surfacing. Manholes, valve boxes, drop inlets and other service entrances shall be protected from the Micro Surfacing by a suitable method. The City shall approve the surface preparation prior to surfacing. No dry aggregate either spilled from the lay-down machine or existing on the road, will be permitted. Remove any thermoplastic traffic striping or reflective pavement markers in the areas to be Micro Surfaced.

Tack Coat: The City may require placement of a tack coat prior to paving. If required, the tack coat shall consist of one-part emulsified asphalt to three parts water and shall be applied with a standard distributor. The emulsified asphalt should be CQS or CSS grade, or the Micro Surface emulsion. The distributor shall be capable of applying the dilution evenly at a rate of 0.05 to 0.15 gal/yard². The tack coat shall be allowed to cure sufficiently before the application of micro surfacing.

Cracks: Unless otherwise instructed by the City, treat cracks wider than 0.25” in the pavement surface with an approved crack sealer prior to application of the Micro Surface.
Application: A 500 ft minimum test strip shall be placed in conditions similar to those expected to be encountered during the project unless specifically waived by the City. The test strip shall demonstrate that the equipment used, crew selected and materials to be incorporated into the product are performing as required to meet specifications.

The surface shall be pre-wetted ahead of the spreader box. The rate of application of the spray shall be adjusted during the day to suit temperatures, surface texture, humidity, and dryness of the pavement.

The Micro Surfacing shall be of the desired consistency upon leaving the mixer. A sufficient amount of material shall be carried in all parts of the spreader at all times so that a complete coverage is obtained. Overloading of the spreader shall be avoided. No lumping, balling, or unmixed aggregate shall be permitted.

No streaks, such as those caused by oversized aggregate, shall be left in the finished surface. If excess streaking develops, the job will be stopped until the contractor proves to the Project Manager or his/her designee that the situation has been corrected. Excessive streaking is defined as more than four marks greater than one-half (1/2) inch wide and four inches (4) long, or one-inch (1) wide and three (3) inches long, in any 29.9 yd² area. No transverse ripples or longitudinal streaks of one-fourth (¼) inch in depth will be permitted, when measured by placing a ten (10) foot straight edge over the surface.

The Micro Surfacing mixture shall be of the proper consistency at all times, so as to provide the application rate required by the surface condition. The average application rate, as measured by the Project Manager, shall be in accordance with the following table:

<table>
<thead>
<tr>
<th>Aggregate Type</th>
<th>Location</th>
<th>Suggested Application Rates</th>
</tr>
</thead>
</table>
| Single application| Urban and Residential Streets | Type II - 18 - 22 lb/yd²  
Type III - 22 - 26 lb/yd²         |
| Double application| Urban, Residential, and Primary Routes | Type II - 32 - 40 lb/yd²  
Type III - 42 - 50 lb/yd²         |
| Rut Fill          | Wheel Ruts                | Tonnage As Required and Approved by City |

Application rates are based upon the weight of dry aggregate in the mixture. Application rates are affected by the unit weight of the aggregate. The contractor shall calculate the yield of the course placed at least three times per day. The City shall randomly determine the timing for the readings used to calculate application rate.

Single applications shall be applied in single passes, and Double applications in two, full width passes. When two passes are used, the first pass (scratch course) is made using a metal or stiff rubber strike-off and applying only what the surface demands for leveling. The second course is applied at 15 – 30 lb/yd².

Opening to Traffic: Micro Surfacing shall be capable of producing an emulsified asphalt paving mixture that will cure at a rate which will permit straight rolling traffic on the pavement within one hour after application without damaging the pavement surface. Any damage done by traffic to the Micro Surfacing shall be repaired by the contractor at his expense.

Joints: No excess buildup, uncovered areas, or unsightly appearance shall be permitted on longitudinal or transverse joints. The contractor shall provide suitable-width spreading equipment to produce a minimum number of longitudinal joints throughout the project. When possible, longitudinal joints shall be placed on lane lines. Half passes and odd-width passes will be used only in minimum amounts. If half passes are
used, they shall not be the last pass of any paved area. A maximum of three (3) inches shall be allowed for overlap of longitudinal lane line joints. Also, the joint shall have no more than a one-fourth (¼) inch difference in elevation when measured by placing a ten (10) foot straight edge over the joint and measuring the elevation drop-off.

**Mix Stability:** The Micro Surfacing shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and spreading. It shall be free of excess water or emulsion and free of segregation of the emulsion and aggregate fines from the coarser aggregate. Under no circumstances shall water be sprayed directly into the lay-down box while laying Micro Surfacing material.

**Handwork:** Areas which cannot be reached with the machine shall be surfaced using hand squeegees to provide uniform coverage. If necessary, the area to be hand worked shall be lightly dampened prior to mix placement. Care shall be exercised to leave no unsightly appearance from hand work. The same type of finish as applied by the spreader box shall be required.

**Edge lines:** Care shall be taken to ensure straight lines along curbs and shoulders. No runoff on these areas will be permitted. Lines at intersections will be kept straight to provide a good appearance. If necessary, a suitable material will be used to mask off the end of streets to provide straight lines. Edge lines shall not vary by more than ±2 inches horizontal variance in any 100 feet of length.

**Clean-up:** All areas, such as man-ways, gutters, and intersections, shall have the Micro Surfacing mix removed as specified by the City. The contractor shall, on a daily basis, remove any debris associated with the performance of the work, completely and thoroughly to the satisfaction of the City. In addition, the contractor shall, at the request of the City pressure wash any area such as, curb and gutter, private driveways, etc. removing any and all stains associated with the placement of the Micro Surfacing.

**General Performance:** Provide completed pavement which performs to the satisfaction of the City without bleeding, rutting, shoving, raveling, stripping, or showing other types of pavement distress or unsatisfactory performance.

**Contractor’s Quality Control Plan:** Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the City with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:

- Source materials used on the project.
- Sampling and testing methods used to determine compliance with material specifications.
- Equipment to be used on the project.
- Calibration method used to determine compliance with the mix design.
- Pavement cleaning and preparation procedure.
- Plan for protecting Micro Surface mixture from damage by traffic.
- Procedure for monitoring initial acceptance requirements.
- An action plan demonstrating adjustment of the Micro Surface operation for adverse environmental conditions.

**Testing:** The City may obtain one or more samples of Micro Surfacing mixture for each day of production. Tests samples shall be collected and performed in accordance with AASHTO T308 and AASHTO T30 to determine the residual asphalt content and the gradation of the sample. Evaporate all water from the sample prior to testing. Determine the deviation of the test results for each sample from the mix design target values. Compare the deviation from the mix design to the mixture control tolerances shown here:
### Aggregate and Emulsified Asphalt - Acceptance Limits

<table>
<thead>
<tr>
<th>Aggregate</th>
<th>Tolerance from Mix Design Target Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Passing No. 4 Sieve</td>
<td>+6%</td>
</tr>
<tr>
<td>Percent Passing No. 8 Sieve</td>
<td>+7%</td>
</tr>
<tr>
<td>Percent Passing No. 50 Sieve</td>
<td>+6%</td>
</tr>
<tr>
<td>Percent Passing No. 200 Sieve</td>
<td>+3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emulsified Asphalt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual Asphalt Content of (single test)</td>
</tr>
<tr>
<td>Residual Asphalt Content of (daily average)</td>
</tr>
<tr>
<td>Application Rate (1,000 ft yield checks)</td>
</tr>
<tr>
<td>Sand Equivalent Test (ASTM D2419)</td>
</tr>
</tbody>
</table>

**Documentation:** Complete a daily report that includes the following information:

- Job number
- Route/Street Name(s)
- Owner’s On-Site Representative Name
- Date
- Air temperature – Min/Max (during application)
- Unit weight of emulsified asphalt (pounds per gallon)
- Beginning and ending application locations
- Counter readings (beginning, ending, and total difference)
- Length and width in feet
- Total area (square yards)
- Aggregate weight
- Gallons of emulsified asphalt
- Application rate (pounds per square yard)
- Contractor’s authorized signature
- QC aggregate properties (if required)
- Emulsified asphalt bill of lading(s)

**Traffic Control:** The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh mix until all operations have been completed and the micro surface is sufficiently dry to keep vehicular traffic from marking the mat. The Contractor shall submit a MOT plan indicating all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. MOT and associated devices shall be checked daily and periodically throughout the project for compliance; and where adjustments or corrections are needed, prompt revisions shall be made. The Contractor shall construct a two (2) foot apron at all driveways.

**Acceptance:** Allow the City access to in-progress work for quality assurance review and testing. Upon completion of work, schedule an inspection with the City. The City will note deficiencies. Any deficiencies identified during this process will be addressed by the Contractor at no additional cost.

**Method of Measurement:** If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for High Polymer Micro Surfacing, and not specifically listed in another item in the Bid Form, shall be included in this item.
Basis of Payment: The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for High Polymer Micro Surfacing (Single application), High Polymer Micro Surfacing (Double application), Tack Coat, and the per Ton price for High Polymer Micro Surfacing (Rut filling) or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to High Polymer Micro Surfacing, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.

TECHNICAL PROVISION

TP-318a

Highly Modified Slurry Seal

The work specified in this section consists of placement of a highly polymer modified Slurry Seal on a prepared existing paved road, placed within the lines, grades, and thickness established by the City.

Description: Highly Modified Slurry Seal is a polymer-modified cold-mix paving system that begins as a mixture of dense-graded aggregate, polymer modified asphalt emulsion, water, and mineral fillers placed in a slurry state to extend the service life of both urban and rural roads within the City. Highly Modified Slurry Seal as specified herein contains modified asphalt emulsion at a rate of 6% minimum.

Materials:

Emulsified Asphalt: Quick-set cationic type CSS or CQS emulsion with natural or synthetic polymer modifiers conforming to the requirements specified below:

<table>
<thead>
<tr>
<th>Property</th>
<th>AASHTO Test Method</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt Base Properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Original DSR, kPa (G°/sin δ, 10 rad./sec) @ 76°C</td>
<td>T315</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Emulsion Properties</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity, Saybolt Furol @ 122° F, SFS</td>
<td>T59</td>
<td>15.0</td>
<td>150.0</td>
</tr>
<tr>
<td>Particle Charge</td>
<td>Positive</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sieve Test</td>
<td>T59</td>
<td>----</td>
<td>0.1</td>
</tr>
<tr>
<td>Residue by Evaporation</td>
<td>T59</td>
<td>62.0</td>
<td></td>
</tr>
<tr>
<td>Residue Properties from Low Temperature Evaporation</td>
<td>PP72-11, Procedure B</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Original DSR, kPa (G°/sin δ, 10 rad./sec) @ 76°C</td>
<td>T315</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Original DSR, deg (phase angle δ, 10 rad./sec) @ 76°C</td>
<td>T315</td>
<td>60.0</td>
<td></td>
</tr>
</tbody>
</table>

It shall pass all applicable storage and settlement tests. The cement mixing test shall be waived for this emulsion. The polymer material shall be milled or blended into the asphalt or emulsifier solution prior to the emulsification process.

The minimum amount and type of polymer modifier shall be determined by the laboratory performing the mix design. The minimum amount required will be based on asphalt weight content and will be certified by the emulsion supplier. A six percent (6%) polymer solids, based on asphalt weight, pre blended prior to emulsification is considered minimum.

The five-day (5) settlement test may be waived, provided job stored emulsion is used within thirty-six (36) hours from the time of the shipment, or the stored material has had additional emulsion blended into it prior to use.
Each load of emulsified asphalt shall be accompanied with a Certificate of Analysis/Compliance to assure that it is the same as that used in the mix design.

For the first load of emulsified asphalt produced for the project, the supplier shall submit a sample to the City for testing before use. At any time during application, the City may sample and test all subsequent loads of emulsified asphalt delivered to the project to verify and determine compliance with specification requirements. The cost of testing shall be paid by the contractor. Where these tests identify material outside specification requirements, the City shall require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the City. Further, the material placed containing the emulsified asphalt outside of specification requirements shall be removed and replaced at the sole expense of the contractor or his supplier.

**Aggregate:** Use an aggregate consisting of 100% crushed granite. To assure the material is totally crushed, one-hundred percent (100%) of the parent aggregate will be larger than the largest stone in the gradation to be used.

In addition to the requirements of FDOT Standard Specification Sections 901 and 902, when aggregate is tested according to the following test, it should meet these minimum requirements:

<table>
<thead>
<tr>
<th>AASHTO Test No.</th>
<th>ASTM Test No.</th>
<th>Quality</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>AASHTO T176</td>
<td>ASTM D2419</td>
<td>Sand Equivalent</td>
<td>55 Min</td>
</tr>
<tr>
<td>AASHTO T104</td>
<td>ASTM C88</td>
<td>Soundness</td>
<td>15% Max w/ Na₂SO₄</td>
</tr>
<tr>
<td>AASHTO T96</td>
<td>ASTM C131</td>
<td>Abrasion Resistance</td>
<td>25% Max w/ MgSO₄</td>
</tr>
<tr>
<td>AASHTO T278, T279</td>
<td></td>
<td>Polish Value</td>
<td>30% Max</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31 Min</td>
</tr>
</tbody>
</table>

The abrasion test is to be run on the parent aggregate. The aggregate shall meet state-approved polishing values. Proven performance may justify the use of aggregates that may not pass all of the above tests, subject to approval by the City.

When tested in accordance with AASHTO T27 (ASTM C136) and AASHTO T11 (ASTM C117), the target (mix design) aggregate gradation (including the mineral filler) shall be within one of the following bands.

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Type I Percent Passing</th>
<th>Type II Percent Passing</th>
<th>Type III Percent Passing</th>
<th>Stockpile Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>% (9.5 mm)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>± 5 %</td>
</tr>
<tr>
<td>#4 (4.75 mm)</td>
<td>100</td>
<td>90 - 100</td>
<td>70 - 90</td>
<td>± 5 %</td>
</tr>
<tr>
<td>#8 (2.36 mm)</td>
<td>90 - 100</td>
<td>65 - 90</td>
<td>45 - 70</td>
<td>± 5 %</td>
</tr>
<tr>
<td>#16 (1.18 mm)</td>
<td>65 - 90</td>
<td>45 - 70</td>
<td>28 - 50</td>
<td>± 5 %</td>
</tr>
<tr>
<td>#30 (600 um)</td>
<td>40 - 65</td>
<td>30 - 50</td>
<td>19 - 34</td>
<td>± 5 %</td>
</tr>
<tr>
<td>#50 (330 um)</td>
<td>25 - 42</td>
<td>18 - 30</td>
<td>12 - 25</td>
<td>± 4 %</td>
</tr>
<tr>
<td>#100 (150 um)</td>
<td>15 - 30</td>
<td>10 - 21</td>
<td>7 - 18</td>
<td>± 3 %</td>
</tr>
<tr>
<td>#200 (75 um)</td>
<td>10 - 20</td>
<td>5 - 15</td>
<td>5 - 15</td>
<td>± 2 %</td>
</tr>
</tbody>
</table>
The job mix (target) gradation shall be within the gradation band for the desired type. After the target gradation has been submitted (this should be the gradation that the mix design is based on), then the percent passing each sieve shall not vary by more than the stockpile tolerance shown in the above table for each individual sieve, and still remain within the gradation band. It is recommended that the percent passing shall not go from the high end to the low end of the range for any two consecutive screens.

The aggregate will be accepted at the job location stockpile or when loading into the support units for delivery to the lay-down machine. The stockpile shall be accepted based on five gradation tests according to AASHTO T2 (ASTM D75). If the average of the five tests is within the gradation tolerances and one sand equivalent test meets the requirements the materials will be accepted. If the tests show the material to be out, the contractor will be given the choice to either remove the material or blend other aggregate with the stockpiled material to bring it into specification. Materials used in blending must meet the quality tests before blending and must be blended in a manner to produce a consistent gradation. If blending is used, it will require that a new mix design be performed. The contractor shall supply copies of the aggregate tickets to the customer within 24 hours of delivery to the job site. The cost of the testing shall be paid by the contractor. Screening shall be required at the stockpile prior to delivery to the paving machine if there are any problems created by having oversize material in the mix.

Mineral filler: (if required) shall be any recognized brand of non-air entrained Portland cement or hydrated lime that is free from lumps. It may be accepted upon visual inspection. The type and amount of mineral filler needed shall be determined by a laboratory mix design and will be considered as part of the aggregate gradation. An increase or decrease of less than one percent (1%) may be permitted when the Slurry is being placed if it is found to be necessary for better consistency or set times.

Water: Potable and free of harmful or deleterious materials.

Additives: Additives may be added to the emulsion mix or any of the component materials to accelerate or retard the break of the Slurry Seal. They must be included as part of the mix design and be compatible with the other components of the mix.

Mix Design: The Contractor shall submit to the City for approval a complete mix design prepared and certified by a laboratory which has experience in designing Slurry Seal Systems and signed and sealed by a professional engineer. After the mix design has been approved, no substitution will be permitted, unless approved by the City. Compatibility of the aggregate, polymer-modified emulsion, mineral filler, and other additives shall be verified by the mix design. The mix design shall be made with the same aggregate gradation that the contractor will provide on the project. Required tests and values are as follows:

<table>
<thead>
<tr>
<th>ISSA Test No.</th>
<th>Description</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISSA TB-100</td>
<td>Wet-Track Abrasion Loss One-hour Soak</td>
<td>38 g/ft² Max</td>
</tr>
<tr>
<td>ISSA TB-102</td>
<td>Water Resistance, 30 Minutes</td>
<td>No Discoloration</td>
</tr>
<tr>
<td>ISSA TB-109</td>
<td>Excess Asphalt by LWT Sand Adhesion</td>
<td>50 g/ft² Max</td>
</tr>
<tr>
<td>ISSA TB-113</td>
<td>Mix Time @ 77°F (25°C)</td>
<td>Controllable to 180 Seconds Min</td>
</tr>
<tr>
<td>ISSA TB-114</td>
<td>Wet Stripping</td>
<td>Pass (90% Min)</td>
</tr>
<tr>
<td>ISSA TB-115</td>
<td>System Compatibility</td>
<td>Pass</td>
</tr>
<tr>
<td>ISSA TB-139</td>
<td>Set Time, 30 Minutes, Min</td>
<td>12 kg/cm</td>
</tr>
<tr>
<td>ISSA TB-139</td>
<td>Early Rolling Traffic Times, 60 Minutes</td>
<td>20 kg/cm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>To be conducted at Recommended Job Mix Formula</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TX-245-F</td>
<td>Cantabro Mass Loss - %</td>
</tr>
<tr>
<td>EN-12697-26 (c)</td>
<td>Indirect Tensile Stiffness Modulus – MPa</td>
</tr>
<tr>
<td>AASHTO T166</td>
<td>Bulk Specific Gravity</td>
</tr>
</tbody>
</table>
The Wet Track Abrasion test is performed under laboratory conditions as a component of the mix design process. The purpose of this test is to determine the minimum asphalt content of a slurry seal system. The Wet Track Abrasion Test is not recommended as a field quality control or acceptance test.

The mixing test is used to predict how long the material can be mixed in the machines before it begins to break. It is more for information to be used by the contractor than for quality of the end product.

The mixing test and set-time test should be checked at the highest temperatures expected during construction.

The Indirect Tensile Stiffness Modulus and the Cantabro Mass Loss samples are to be prepared by ISSA TB-148 Martial Compaction only (30 blows per side) and tested in dry condition at 25°C.

The mix design should report the quantitative effects of moisture content on the unit weight of the aggregate (bulking effect). The report must clearly show the proportions of aggregate, mineral filler (minimum and maximum), water (minimum and maximum), additive usage, and polymer-modified asphalt emulsion based on the dry weight of the aggregate.

All the component materials used in the mix design shall be representative of the materials proposed by the contractor to be used on the project. The percentages of each individual material required shall be shown in the laboratory report.

<table>
<thead>
<tr>
<th>Component Materials</th>
<th>Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual Asphalt</td>
<td>Type I – 10% to 16%</td>
</tr>
<tr>
<td>(% dry weight of aggregate)</td>
<td>Type II – 7.5% to 13.5%</td>
</tr>
<tr>
<td></td>
<td>Type III – 6.5% to 12%</td>
</tr>
<tr>
<td>Mineral Filler</td>
<td>0.0 to 3% (Based on dry weight of aggregate)</td>
</tr>
<tr>
<td>Polymer-Based Modifier</td>
<td>Minimum of 6% solids based on bitumen weight content</td>
</tr>
<tr>
<td>Additives</td>
<td>As needed</td>
</tr>
<tr>
<td>Water</td>
<td>As required to produce proper mix consistency</td>
</tr>
</tbody>
</table>

**MIX TOLERANCES**

Tolerances for the slurry seal mixture are as follows:

a. After the residual asphalt content is determined, a variation ±0.5% by weight of dry aggregate will be permitted.

b. The rate of application shall not vary more than ± 2 lb/yd² when the surface texture does not vary significantly.

After the mix design has been approved, no substitutions to the mix design will be permitted, unless approved by the City. The City will consider inadequate field performance of a mix as sufficient evidence that the properties of the mix related to the mix design have changed, and the City will no longer allow the use of the mix design. The project will be stopped until it is demonstrated that those properties, or issues, have been sufficiently addressed. The material represented by the inadequate field performance will be removed and replaced at no cost to the City.

The materials (aggregates, emulsion, mineral filler, and additives) must be from the same source, grade, and type used to develop the approved mix design. Any substitutions or alternate supplies must
be preapproved by the City. Changes in the aggregate source or emulsion source requires re-validating the mix design and the performance properties. Blending, co-mingling and otherwise combining materials from two or more sources, grades, or types not noted in the approved Mix Design is strictly prohibited. Aggregate stockpiles and emulsion material should be located at or near the job site in sufficient quantity for the job or designated parts of the job.

**Equipment:**

**Mixing Equipment:** The machine shall be specifically designed and manufactured to apply slurry systems. The material shall be mixed by an automatic-sequenced, self-propelled slurry mixing machine of either truck-mounted or continuous-run design, which shall be able to accurately deliver and proportion the aggregate, emulsified asphalt, mineral filler, control setting additive, and water to a revolving multi-blade, double-shafted mixer and to discharge the mixed product on a continuous-flow basis.

The machine shall have sufficient storage capacity for aggregate, emulsified asphalt, mineral filler, control additive and water to maintain an adequate supply to the proportioning controls.

If continuous-run equipment is used, the machine shall be equipped to allow the operator to have full control, from the rear of the machine, of the forward and reverse speeds during applications of the slurry material and be equipped with opposite-side driver stations to assist in alignment. The self-loading device, opposite-side driver stations, and forward and reverse speed controls shall be original equipment manufacturer design.

The city shall decide which type of equipment best suits the specific project. In some cases, truck-mounted machines may be more suited, i.e. cul-de-sacs, small narrow roadways, parking lots, etc. On some projects, continuous-run equipment may be chosen due to the continuity of mix and the reduction of start-up joints.

**Proportioning Devices:** Individual volume or weight controls for proportioning each material to be added to the mix (i.e. aggregate, mineral filler, emulsified asphalt, additive, and water) shall be provided and properly marked. These proportioning devices are used in material calibration and determining the material output at any time.

**Spreading Device:** The mixture shall be agitated and spread uniformly in the surfacing box by means of twin-shafted paddles or spiral augers fixed in the spreader box. A front seal shall be provided to insure no loss of the mixture at the road contact point. The rear seal shall act as a final strike-off and shall be adjustable. The spreader box and rear strike-off shall be so designed and operated that a uniform consistency is achieved to produce a free flow of material to the rear strike-off. The spreader box shall have suitable means provided to side shift the box to compensate for variations in the pavement geometry.

A burlap drag or other approved screed may be attached to the rear of the spreader box to provide a highly textured uniform surface. A drag stiffened by hardened slurry is ineffective and should be replaced immediately.

**Auxiliary Equipment:** Suitable surface preparation equipment, traffic control equipment, hand tools, and any other support and safety equipment shall be provided by the contractor as necessary, (or as the City requires) to perform the work.

**General:** Each mixing unit to be used in the performance of the work shall be calibrated in the presence
of the City prior to construction. Previous calibration documentation covering the exact materials to be used may be acceptable, provided that no more than sixty (60) days have lapsed. The documentation shall include an individual calibration of each material at various settings, which can be related to the machine metering devices. No machine will be allowed to work on the project until the calibration has been completed and/or accepted.

All equipment, tools, and machines used in the performance of this work shall be maintained in satisfactory working condition at all times to ensure a high-quality product. Availability of quality assurance devices (such as a 15' straight edge) shall be the responsibility of the Contractor.

Construction:

Weather Limitations: Slurry paving shall not be applied if either the pavement or air temperature is below 50°F and falling but may be applied when both pavement and air temperatures are above 45°F and rising. No slurry seal shall be applied when there is the possibility that the finished product will freeze within 24 hours. The mixture shall not be applied when weather conditions prolong opening to traffic beyond a reasonable time or as directed by the City.

Surface Preparation: Immediately prior to applying the slurry seal, the surface shall be cleared of all loose material, silt spots, oil spots, vegetation, and other objectionable material. Any standard cleaning method will be acceptable. If water is used, cracks shall be allowed to dry thoroughly before applying slurry seal. Manholes, valve boxes, drop inlets and other service entrances shall be protected from the slurry by a suitable method. The City shall approve the surface preparation prior to surfacing. No dry aggregate either spilled from the lay-down machine or existing on the road, will be permitted. Remove any thermoplastic traffic striping or reflective pavement markers in the areas to be slurry sealed.

Tack Coat: The City may require placement of a tack coat prior to paving. If required, the tack coat shall consist of one-part emulsified asphalt to three parts water and shall be applied with a standard distributor. The emulsified asphalt should be SS or CSS grade, or the slurry seal emulsion. The distributor shall be capable of applying the dilution evenly at a rate of 0.05 to 0.15 gal/yd². The tack coat shall be allowed to cure sufficiently before the application of slurry seal.

Cracks: Unless otherwise instructed by the City, treat cracks wider than 0.25" in the pavement surface with an approved crack sealer prior to application of the slurry seal.

Application: A 500 ft minimum test strip shall be placed in conditions similar to those expected to be encountered during the project unless specifically waived by the City. The test strip shall demonstrate that the equipment used, crew selected and materials to be incorporated into the product are performing as required to meet specifications.

The surface shall be pre-wetted ahead of the spreader box. The rate of application of the spray shall be adjusted during the day to suit temperatures, surface texture, humidity, and dryness of the pavement. No pooling or standing water shall be paved over.

The slurry seal shall be of the desired consistency upon leaving the mixer. A sufficient amount of material shall be carried in all parts of the spreader at all times so that a complete coverage is obtained. Overloading of the spreader shall be avoided. No lumping, balling, or unmixed aggregate shall be permitted.

No streaks, such as those caused by oversized aggregate or broken mix shall be left in the finished surface. If excess streaking develops, the job will be stopped until the contractor proves to the City that the situation has been corrected. Excessive streaking is defined as more than four drag marks greater
than one- half (½) inch wide and four inches (4) long, or one-inch (1) wide and three (3) inches long, in any 30 yd² area. No transverse ripples or longitudinal streaks of one-fourth (¼) inch in depth will be permitted, when measured by placing a ten (10) foot straight edge over the surface.

The slurry mixture shall be of the proper consistency at all times, so as to provide the application rate required by the surface condition. The average application rate shall be in accordance with the following table:

<table>
<thead>
<tr>
<th>Aggregate Type</th>
<th>Location</th>
<th>Application Rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE I</td>
<td>Parking Areas, Urban and Residential Streets</td>
<td>8 – 12 lb/sy²</td>
</tr>
<tr>
<td>TYPE II</td>
<td>Urban and Residential Streets</td>
<td>10 - 18 lb/yd²</td>
</tr>
<tr>
<td>TYPE III</td>
<td>Urban, Residential, and Primary Routes</td>
<td>15 - 22 lb/yd²</td>
</tr>
</tbody>
</table>

Application rates are based upon the weight of dry aggregate in the mixture. Application rates are affected by the unit weight of the aggregate. The contractor shall calculate the yield of the course placed at least three times per day. The city shall randomly determine the timing for the readings used to calculate application rate.

**Opening to Traffic:** Slurry Seal shall be capable of producing an emulsified asphalt paving mixture that will cure at a rate which will permit straight rolling traffic on the pavement within two (2) hours after application without damaging the pavement surface. Any damage done by traffic to the Slurry shall be repaired by the contractor at his/her expense.

**Joints:** No excess buildup, uncovered areas, or unsightly appearance shall be permitted on longitudinal or transverse joints. The contractor shall provide suitable-width spreading equipment to produce a minimum number of longitudinal joints throughout the project. When possible, longitudinal joints shall be placed on lane lines. Half passes and odd-width passes will be used only in minimum amounts. If half passes are used, they shall not be the last pass of any paved area. A maximum of three (3) inches shall be allowed for overlap of longitudinal lane line joints. Also, the joint shall have no more than a one-fourth (¼) inch difference in elevation when measured by placing a ten (10) foot straight edge over the joint and measuring the elevation drop-off.

**Mix Stability:** The slurry seal shall possess sufficient stability so that premature breaking of the material in the spreader box does not occur. The mixture shall be homogeneous during and following mixing and spreading. It shall be free of excess water or emulsion and free of segregation of the emulsion and aggregate fines from the coarser aggregate. Under no circumstances shall water be sprayed directly into the lay-down box while laying slurry material.

**Handwork:** Areas which cannot be reached with the machine shall be surfaced using hand squeegees to provide uniform coverage. If necessary, the area to be hand worked shall be lightly dampened prior to mix placement. Care shall be exercised to leave no unsightly appearance from hand work. The same type of finish as applied by the spreader box shall be required.

**Edgelines:** Care shall be taken to ensure straight lines along curbs and shoulders. No runoff on these areas will be permitted. Lines at intersections will be kept straight to provide a good appearance. If necessary, a suitable material will be used to mask off the end of streets to provide straight lines. Edge lines shall not vary by more than ± 2 inches horizontal variance in any 100 feet of length.
Clean-up: All areas, such as man-ways, gutters, and intersections, shall have the slurry mix removed as specified by the City. The contractor shall, on a daily basis, remove any debris associated with the performance of the work, completely and thoroughly to the satisfaction of the City. In addition, the contractor shall, at the request of the City pressure wash any area such as, curb and gutter, private driveways, etc. removing any and all stains associated with the placement of the Slurry Seal.

General Performance: Provide completed pavement which performs to the satisfaction of the City without bleeding, rutting, shoving, raveling, stripping, or showing other types of pavement distress or unsatisfactory performance.

Contractor's Quality Control Plan: Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the City with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:

- Source materials used on the project.
- Sampling and testing methods used to determine compliance with material specifications.
- Equipment to be used on the project.
- Calibration method used to determine compliance with the mix design.
- Pavement cleaning and preparation procedure.
- Plan for protecting slurry seal mixture from damage by traffic.
- Procedure for monitoring initial acceptance requirements.
- An action plan demonstrating adjustment of the slurry seal operation for adverse environmental conditions.

Testing: The City may obtain one or more samples of slurry mixture for each day of production. Tests samples shall be collected and performed in accordance with AASHTO T308 and AASHTO T30 to determine the residual asphalt content and the gradation of the sample. Evaporate all water from the sample prior to testing. Determine the deviation of the test results for each sample from the mix design target values. Compare the deviation from the mix design to the mixture control tolerances shown here:

<table>
<thead>
<tr>
<th>Aggregate and Emulsified Asphalt - Acceptance Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate</td>
</tr>
<tr>
<td>Percent Passing No. 4 Sieve</td>
</tr>
<tr>
<td>Percent Passing No. 8 Sieve</td>
</tr>
<tr>
<td>Percent Passing No. 50 Sieve</td>
</tr>
<tr>
<td>Percent Passing No. 200 Sieve</td>
</tr>
<tr>
<td>Emulsified Asphalt</td>
</tr>
<tr>
<td>Residual Asphalt Content of (single test)</td>
</tr>
<tr>
<td>Residual Asphalt Content of (daily average)</td>
</tr>
<tr>
<td>Application Rate (1,000 ft yield checks)</td>
</tr>
<tr>
<td>Sand Equivalent Test (ASTM D2419)</td>
</tr>
</tbody>
</table>
Documentation: Complete a daily report that includes the following information:

- Job number
- Route/Street Name(s)
- Owner’s On-Site Representative Name
- Date
- Air temperature – Min/Max (during application)
- Unit weight of emulsified asphalt (pounds per gallon)
- Beginning and ending application locations
- Counter readings (beginning, ending, and total difference)
- Length and width in feet
- Total area (square yards)
- Aggregate weight
- Gallons of emulsified asphalt
- Application rate (pounds per square yard)
- Contractor’s authorized signature
- QC aggregate properties (if required)
- Asphalt emulsified asphalt bill of lading(s)

Traffic Control: The Contractor shall furnish all necessary traffic control, barricades, signs and flagmen, to ensure the safety of the traveling public and to all working personnel. Traffic shall not travel on fresh mix until all operations have been completed and the slurry surface is sufficiently dry to keep vehicular traffic from marking the mat. The Contractor shall submit a MOT plan indicating all facets of traffic control for the project area. The MOT plan must be approved in writing by the City prior to commencing any work. All traffic control shall be in accordance with the FDOT Roadway Design Standards, most current edition and TP-102. MOT and associated devices shall be checked daily and periodically throughout the project for compliance; and where adjustments or corrections are needed, prompt revisions shall be made. The Contractor shall construct a two (2) foot apron at all driveways.

Acceptance: Allow the City access to in-progress work for quality assurance review and testing. Upon completion of work, schedule an inspection with the City. The City will note deficiencies. Any deficiencies identified during this process will be addressed by the Contractor at no additional cost.

Method of Measurement: If a pay item is listed on the Bid Form for work required in this Technical Provision, the quantity to be paid shall be as specified in the Bid Form including all items of work described herein. Any item necessary for Slurry Seal, and not specifically listed in another item in the Bid Form, shall be included in this item.

Basis of Payment: The quantities to be paid for under this Technical Provision shall be included in the Square Yard price for High Polymer Slurry Seal and Tack Coat, or as listed in the Bid Form. The Unit price includes all items listed in the contract, including all General Conditions, Special Conditions and Technical Provisions pertaining to Slurry Seal, including all items of work described herein. No additional payment will be provided for any item necessary for the completion of this contract as detailed in the specifications.
SECTION 327
MILLING OF EXISTING ASPHALT PAVEMENT

For work related to this specification, utilize the Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction (Standard Specs), Dated 2014, except as amended herein. The purpose of this Technical Special Provision (TSP) is generally to remove those references to adjusted pay factors as may be present, and certain aspects of contractor quality control and relate the contractual obligations to between contractor and City as opposed to between contractor and FDOT. Other technical changes may also be included herein. When a section is included in this specification, only those sentences included shall be deemed changed. If a sentence is not included in this TSP, no change has been made. In places where additions are made, or sentences are stricken, this TSP will note that.

Where reference is made to “Engineer” or “Department”, the word “City” or “City Representative” as applicable shall be substituted. Where reference is made to specifications within Division I of the FDOT Standard Specs, this contract and its appropriate sections shall be the target.

327-1 Description.

Take ownership of milled material, unless otherwise noted in the plans or in the bid form.

327-3 Construction.
327-3.1 General: When milling to improve rideability or cross slope, remove the existing pavement to the average depth specified in the Plans or in the bid form, in a manner that will restore the pavement surface to a uniform cross-section and longitudinal profile. The City representative may require the use of a string-line, straight edge or other proofing tool to ensure maintaining the proper alignment.

(Append to paragraph three)

In the absence of plans for this project or any portion thereof, longitudinal and cross slope shall match the original slope, or conform to the slopes directed by the City Representative in the field.

327-3.2 Quality Control Requirements:
(Append to end)
The City Representative may waive any or all portions of this section for any portion of the project. This does not prohibit the City Representative from requiring individual measurements as may be deemed necessary at any location, or from requiring the entire procedure for portions of the project.

327-3.3 Verification:
(Append to end)
Technical Special Provisions

The City Representative may waive any or all portions of this section for any portion of the project if verification is not deemed necessary. This does not relieve the contractor of repairs necessary from any area not meeting the minimum requirements of this specification. The contractor may request verification as may be needed to ensure accuracy of contractor’s equipment or methods.

327-5 Method of Measurement.

The quantity to be paid for will be the field measured quantity area, in square yards, over which milling is completed and accepted.

327-6 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section, including hauling off and stockpiling or otherwise disposing of the milled material.

Payment will be made under:

Item No. 327-70- Milling Existing Asphalt Pavement - per square yard.

[Remainder of this page left intentionally blank]
TECHNICAL PROVISION TP-710

PAINTED TRAFFIC STRIPES AND MARKINGS

The work under this Technical Provision consists of painting reflectorized traffic stripes, including edge stripes and traffic guide.

The placing of painted traffic stripes and markings as shown on the plans shall conform to the requirements of Section 710 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction latest edition, and in accordance with Florida Department of Transportation, Roadway and Traffic Design Standards (index appropriate for proposed work) latest edition except as amended herein.

It shall be the responsibility of the contractor to perform precise measurements and drawings prior to beginning work such that pavement markings can be replaced in their exact locations. Unless otherwise directed by the engineer, replace all markings in their respective locations at the lengths and widths in place prior to beginning work within the same day the markings are removed.

**Method of Measurement:** The quantity to be paid for under this Technical Provision shall be number of per each or per lineal foot of the payment items, completed and accepted.

No measurement as a part of this technical provision will be provided for temporary traffic stripes or messages needed for temporary control of traffic prior to final striping.

Measurement for Skip Traffic Striping and Guidelines will be the Net Lineal Feet for the color and width placed as listed in the bid form.

**Basis of Payment:** If a payment item is listed on the Bid Form for work required under this Technical Provision, payment shall as specified in the Bid Form.

The Contract price of the various payment items shall be full compensation for all work specified in this Technical Provision including: cleaning and preparing surfaces, materials, application, curing/protecting all items, protection from traffic, furnishing tools, machines and equipment, and all incidentals needed to complete the work.

When the work described as included in the work of this Technical Provision is not specifically listed on the Bid Form the cost of performing that work shall be included in the contract unit prices for the various items of work to which it is incidental.

No compensation as a part of this technical provision will be provided for temporary traffic stripes needed for temporary control of traffic prior to final striping.

End of TP-101
SECTION 4 – STANDARD PURCHASE DEFINITIONS

The City will use the following definitions in instructions to bidders, terms and conditions, special provisions, technical specifications and any other solicitation documents.

1. **Addendum** is a formal written document, released prior to the public opening that modifies any aspect of a Solicitation. Plural: Addenda
2. **Alternate Bid** means multiple Bids with substantive variations from the same Bidder in response to a Solicitation.
3. **Amendment** is a formal written agreement, signed by both parties, that modifies an existing contractual agreement.
4. **Appropriate, Appropriated, or Appropriation** means the adoption by the City Council of the City of a budget for a fiscal year that includes payments to be made under the Contract during the respective fiscal year.
5. **Best Value** means the highest overall value to the City based on factors that include, but are not limited to, price, quality, design, and workmanship.
6. **Bid** is a complete, properly signed response to an Invitation to Bid, which if accepted, would bind the Bidder to perform the resultant Contract.
7. **Bid Guaranty (Bid Bond)** guarantees that the Bidder (a) will not withdraw the Bid within the period specified for acceptance, and (b) will execute a Contract and furnish required bonds and any necessary insurance within the time specified in the Solicitation, unless a longer time is allowed by the City. The guarantee will be returned to the Bidder upon execution of a Contract.
8. **Bidder or Proposer** is a person, firm, or entity that that submits a Response to a Solicitation. Any Bidder/Proposer may be represented by an agent after submitting evidence demonstrating the agent’s authority. The agent cannot certify as to his own agency status. (See also “Vendor”)
9. **City** means the City of Port Orange.
10. **Competitive Negotiation** means a method for acquiring goods, services, and construction for public use in which discussions or negotiations may be conducted with responsible offerers who submit Responses through a Request for Proposals, Request for Statements of Qualifications, or Invitation to Negotiate.
11. **Competitive (Formal) Solicitation** is the process of requesting and receiving two or more sealed bids, proposals, statements of qualifications or replies submitted by responsive vendors in accordance with the terms of a competitive process, regardless of the method of procurement.
12. **Competitive Range** means the responsive submissions that meet the evaluation criteria and are considered to be reasonably susceptible of award.
13. **Construction** means the process of building, repairing, improving, and alterations, conversion or extension of building, parks, utilities, streets or other improvements or alterations to real property.
14. **Contract** is a written agreement or purchase order issued for the purchase of goods or services.
15. **Contractor** means the person, firm or entity selling goods or services to the City under a Contract.
16. **Deliverables** means the goods, products, materials, and/or services to be provided to the City by a Bidder.
17. **Due Date** means the date and time specified for receipt of Responses to a Solicitation.
18. **End User** is a person, program, agency, or other eligible user who uses a contract to purchase a commodity or contractual service.
19. **Evaluation Committee/Team** is a temporary group of City personnel who are responsible for the evaluation of proposals, statements of qualifications or replies as part of a Request for Proposals (RFP), Request for Submission of Qualifications (RFSQ), or Invitation to Negotiate (ITN), or competitive grant process.
20. **Evaluator** is a member of the evaluation committee/team.
21. **Goods** are supplies, materials, or equipment.
22. **Intent to Award** is a document, published on DemandStar, that informs the public and respondents of the City’s decision to award a contract pursuant to a previously issued competitive solicitation.

23. **Invitation to Bid (ITB) or Bid** means a formal request to prospective vendors requesting pricing for a specified Good or Service which has been advertised for Bid in a newspaper.

24. **Invitation to Negotiate (ITN)** means a formal request to prospective vendors requesting proposed specifications and pricing of a Product and/or service which has been advertised for replies in a newspaper.

25. **Issues** means points, matters, or concerns to be addressed during negotiations.

26. **Lead Negotiator** is the negotiator responsible for leading and facilitating the formal negotiation discussions and selecting other required negotiation team members. Is often the “driver of change” and seeks alternatives/options.

27. **Lowest Responsible Bid means the responsive Bid** meeting all requirements of the specifications, terms, and conditions of the Invitation to Bid resulting in the lowest cost to the City in a total cost concept or based solely on price, taking into consideration the financial and practical ability of the Bidder to perform the Contract, past performance of the Bidder, and compliance with all City ordinances concerning the purchasing process.

28. **Lowest Responsible Bidder** means the Bidder submitting Lowest Responsible Bid.

29. **Negotiation Team** is a temporary group of City personnel who are responsible for negotiations as part of an Invitation to Negotiate (ITN).

30. **Negotiator** is a member of the negotiation team.

31. **Non-Professional Services** are services performed that are not of a professional nature such as lawn care, security, janitorial, etc.

32. **Offer** means a complete signed Response submitted to the City in response to a Solicitation including, but not limited to, a Bid submitted in response to an Invitation to Bid, a Proposal submitted in response to a Request for Proposal, a Quote submitted in response to a Request for Quotation, a Statement of Qualifications and interest submitted in response to a Request for Statements of Qualifications, or a Reply submitted in response to an Invitation to Negotiate.

33. **Onvia/DemandStar** is the official online repository for all City competitive solicitations.

34. **Outlier** is a bid, offer, or proposal which is determined by the Purchasing Director or Manager to be significantly dissimilar to or inconsistent with, competing bids or offers.

35. **Owner** is the City of Port Orange.

36. **Proposal/Statement/Reply Conference** means a meeting conducted by the Purchasing Office, held in order to allow Vendors to ask questions about the proposed Contract and particularly the Contract specifications with the City department requesting the goods/services.

37. **Price Analysis** is an evaluation of the total cost of a contract in order to determine if the price is reasonable.

38. **Procurement (Process)** is a term used in the governmental sector for the combined functions of acquiring (purchasing) needed goods and/or services, receiving and inspection, inventory management, contract administration, and disposal/surplus.

39. **Professional Services** means those services within the scope of the practice of architecture, professional engineering, landscape architecture, or registered surveying and mapping, as defined by the laws of the state, or those performed by any architect, professional engineer, landscape architect, or registered surveyor and mapper in connection with his or her professional employment or practice.

40. **Protest** is a formalized process by which respondents have an opportunity to challenge a procurement practice or contract award.

41. **Proposal** is a complete, properly signed Response to a Request for Proposal, based on performance that is offered rather than on that of price alone, which if accepted, would bind the Vendor to perform the resultant Contract.
42. **Purchase Order** is an order placed by the Purchasing Division for the purchase of Goods or Services written on the City’s standard Purchase Order form and which, when accepted by the Bidder, becomes a contract. The Purchase Order is the Bidder’s authority to deliver and invoice the City for Goods or Services specified, and the City’s commitment to accept the Goods or Services for an agreed upon price.

43. **Request for Proposal (RFP)** means a formal request to prospective vendors requesting qualifications of the vendor and pricing for a specified Good or Service which has been advertised for Proposal in a newspaper.

44. **Request for Statement of Qualifications (RFSQ)** means a formal request to prospective vendors requesting statements of qualifications pursuant to Florida Statute 287.055 “Consultant’s Competitive Negotiation Act” which has been advertised for Statement in a newspaper.

45. **Respondent** means an entity that has (or will, i.e. “prospective respondents”) submitted a response to a competitive solicitation conducted to create a contractual relationship for the provision of commodities or services.

46. **Response/Submission** means all materials submitted to the City by a respondent as part of a solicitation. A response may be called a bid, proposal, statement of qualifications, or a reply, depending on the type of competitive solicitation being issued.

47. **Responsible (Vendor)** is a vendor who has the capability in all respects to fully perform the contract requirements and the integrity and reliability that will assure good faith performance.

48. **Responsive (Vendor)** is a vendor that has submitted a bid, proposal, statement of qualifications, or reply that conforms in all material respects to the solicitation.

49. **Scope** means the extent of the area or subject matter that something deals with or to which it is relevant.

50. **Scope of Work** means a description of the work activities, deliverables, and/or timeline that a vendor must execute in terms of delivering specific commodities or in performance of contractual services.

51. **Services** include all work or labor performed for the City on an independent contractor basis other than construction.

52. **Solicitation** means a formal request, as applicable, for prospective vendors to submit responses to an Invitation to Bid, Request for Proposal, Request for Qualifications, Invitation to Negotiate, or a Request for Quotation.

53. **Solicitation Document** means a document, or collection of documents, either paper or electronic, that contains all information required to conduct a competitive procurement project according to § 287.057, Florida Statutes.

54. **Stakeholder** means an individual, who is not likely to become a vendor, who has an interest in the commodities/contractual services needed.

55. **Subcontractor** means a person, firm or entity providing goods or services to a Vendor to be used in the performance of the Vendor’s obligations under the Contract.

56. **Subject Matter Expert** means a person who has working or expert knowledge about a particular topic or field.

57. **Unbalanced Bid** means a Bid that is based on prices which are significantly less than cost for some bid items and significantly more than cost for others.

58. **Vendor** is a person, firm, or entity that provides commodities or services and submits a Response to a Solicitation. Any Vendor may be represented by an agent after submitting evidence demonstrating the agent’s authority. The agent cannot certify as to his own agency status. (Also called “Bidder” or “Proposer”.)

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SECTION 5 – GENERAL TERMS AND CONDITIONS

These instructions are standard for all contracts for commodities or services issued through the City of Port Orange Purchasing Division. General Requirements apply to all advertised Solicitations; however, these may be superseded, in whole or in part, by the SPECIAL REQUIREMENTS/INSTRUCTIONS OR OTHER DATA CONTAINED HEREIN.

READ THIS ENTIRE DOCUMENT CAREFULLY. FOLLOW ALL INSTRUCTIONS. YOU ARE RESPONSIBLE FOR FULFILLING ALL REQUIREMENTS AND SPECIFICATIONS. BE SURE YOU UNDERSTAND THEM.

1. ACCEPTANCE BY CITY

The City shall have a reasonable time (but not less than 30 days) after receipt to inspect the goods and services tendered by vendor. The City at its option may reject all or any portion of such goods or services which do not, in City's sole discretion, comply in every respect with all terms and conditions of the contract. The City may elect to reject the entire goods and services tendered even if only a portion thereof is nonconforming. If the City elects to accept nonconforming goods and services, the City, in addition to its other remedies, shall be entitled to deduct a reasonable amount from the price thereof to compensate the City for the nonconformity. Any acceptance by the City, even if non-conditional, shall not be deemed a waiver or settlement of any defect in such goods and services. The material delivered as a result of this solicitation shall remain the property of the seller until a physical inspection and actual usage of the item(s) is made and thereafter deemed acceptable to the satisfaction of the City, in compliance with the terms and specifications contained herein. In the event that the item(s) supplied to the City is/are found to be defective, or does/do not conform to specifications, the City reserves the right to cancel the order upon written notice to the seller and return the item(s) to the seller at the seller's expense.

2. ADDENDUM

When specifications are revised, the City of Port Orange Purchasing Division will issue an addendum addressing the nature of the change. Vendors should acknowledge all addenda by circling the number of addenda received on the “Vendor Acknowledgment Form” and include it in the returned Response package. Failure to acknowledge the correct number of addenda issued may result in rejection of the Response. It is the responsibility of the Vendor to ensure all addenda have been received prior to submitting a bid. All Addenda shall be posted by the CITY on www.demandstar.com.

The City shall issue responses to inquiries and any other corrections or amendments it deems necessary in written addenda issued prior to the Solicitation Response Due Date. Vendors should not rely on any representations, statements or explanations other than those made in this Solicitation or in any addendum to the Solicitation. Where there appears to be a conflict between the Solicitation and any addenda issued, the last addendum issued shall prevail.

3. ADDITIONAL GOODS

Products, Materials and Goods not specifically identified in this bid request may be added to any resultant contract upon mutual consent of the contracting parties. The City reserves the right to add or delete products or materials of similar nature, within the family of products of “ITB Item(s)” and their commodity codes, to those items requested in this bid.
4. **ANTI-COLLUSION STATEMENT**

By submitting this Response to a Formal Solicitation, the Vendor affirms that this Response is without previous understanding, agreement, or connection with any person, business, or corporation submitting a Response for the same materials, supplies, or equipment, and that this Response is in all respects fair, and without collusion or fraud. Additionally, Vendor agrees to abide by all conditions of this Solicitation and certifies that they are authorized to sign this Response for the Vendor. In submitting a Response to the City of Port Orange, the Vendor offers and agrees that if the Response is accepted, the Vendor shall convey, sell, assign or transfer to the City of Port Orange all rights, title and interest in and to all causes of action it may now or hereafter acquire under the Anti-trust laws of the United States and the State of Florida for price fixing relating to the particular commodities or services purchased or acquired by the City of Port Orange. At the City's discretion, such assignment shall be made and become effective at the time the City tenders final payment to the Vendor.

5. **APPLICABLE LAWS**

In connection with the furnishing of supplies or performance of work under the Contract, the Vendor agrees to comply with the Fair Labor Standards Act, Equal Opportunity Employment Act, and all other applicable federal and state laws, regulations and executive orders to the extent that the same may be applicable.

6. **ASSIGNMENT**

The successful Vendor shall not sell, assign, transfer or convey this contract in whole or in part, without the prior written consent of the City of Port Orange. Any such assignment or transfer shall not release Vendor from all contractual obligations.

7. **AUTHORITY TO CONDUCT BUSINESS IN FLORIDA:**

A Florida corporation or partnership is required to provide evidence with its response that the Vendor is authorized to transact business in Florida and is in good standing with the Florida Department of State. If not with its response, such evidence must be submitted to the City no later than five (5) business days from request of the Purchasing Manager.

A foreign (out-of-state) corporation or partnership is required to provide evidence with its response that the Vendor is authorized to transact business in Florida and is in good standing with the Florida Department of State. If not with its response, such evidence must be submitted to the City no later than five (5) business days from request of the Purchasing Manager.

A joint venture is required to provide evidence with its response that the joint venture, or at least one of the joint venture partners, is authorized to transact business in Florida and is in good standing with the Florida Department of State. If not with its response, such evidence must be submitted to the City no later than five (5) business days from request of the Purchasing Manager. However, the joint venture is required to provide evidence prior to contract execution that the joint venture is authorized to transact business in Florida and provide the City with a copy of the joint venture Agreement.

A joint venture is also required to provide with its response a Statement of Authority indicating that the individual submitting the joint venture's proposal has the legal authority to bind the joint venture. If not with its response, such evidence must be submitted to the City no later than five (5) business days from the request of the Purchasing Manager.
8. **AWARDS**

Results from the evaluation committee will be considered by the City of Port Orange City Council at the earliest possible regular meeting subsequent to the evaluation process. This ITB is issued in accordance with and shall be governed by the provisions of the City’s Purchasing Policy. The City of Port Orange City Council reserves the right to make award(s) by individual sections, groups, all or none, or a combination thereof, with one or more Vendors; to reject any and all proposals, or to waive any informality or technicality in proposals received as deemed to be in the best interest of the City.

The City does not award publicly funded contracts to those who knowingly employ unauthorized alien workers in violation of section 274A(e) of the Immigration and Naturalization Act, 8 United States Code s1324a(e). Such employment deprives legal workers of job opportunities. Violation of section 274A(e) shall be grounds for unilateral cancellation of the contract, Contract, proposal or quote for purchase of services and goods by the City of Port Orange.

9. **AWARD AND EXECUTION OF CONTRACT:**

When a bid received has been determined to be satisfactory, a Contract will be awarded, or Purchase Order issued to the LOWEST Responsible Bidder within the time designated in the Contract Documents.

The Bidder(s) to whom the award is made shall execute the Contract(s) and return it, together with the properly executed bonds and insurance certificates to the office of the Owner, within the time specified.

10. **BID RETURNS**

Vendors shall return all completed Responses to the City of Port Orange at the address set forth in Section 2 of this document on the date and at the time specified. Late submissions will not be accepted and shall be returned to Vendors unopened.

11. **BID PROTEST**

Any person who is adversely affected by the City’s decision or intended decision shall file with the City Purchasing Manager a notice of protest in writing within 72 hours after the posting of the notice of decision or intended decision. With respect to a protest of the terms, conditions, and specifications contained in a solicitation, including any provisions governing the methods for ranking Bids, Proposals, Statements, or Replies, awarding contracts, reserving rights of further negotiation, or modifying or amending any contract, the notice of protest shall be filed in writing within 72 hours after the posting of the Solicitation. Saturdays, Sundays, and state holidays shall be excluded in the computation of the 72-hour time established herein. The formal written protest shall be filed with the Purchasing Manager in writing within ten (10) days after the date the notice of protest is filed. The formal written protest shall state with particularity the facts and law upon which the protest is based. Failure to file a notice of protest or failure to file a formal written protest shall constitute a waiver of proceedings. Upon receipt of the formal written protest that has been timely filed, the City shall stop the solicitation or contract award process until the subject of the protest is resolved by final City action. However, the City may continue the solicitation or award process, provided the City Manager sets forth in writing particular facts and circumstances which require the continuance of the solicitation or contract award process without delay in order to avoid an immediate and serious danger to the public health, safety, or welfare. The City shall provide an opportunity to resolve the protest by mutual agreement between the parties. The policy this City has established is as follows:
a. As soon as possible after receipt, the Purchasing Manager shall provide written bid protest to City Manager, City Attorney, Department Head involved, and Supervisor directly involved in the acquisition.

b. Purchasing Manager shall schedule within seven (7) business days, excluding weekends and holidays, a meeting with the above-mentioned individuals or designee and protester. The intent of the meeting is to provide a review and/or solution prior to going before Council. After reviewing all relevant information, the City Manager shall render a decision.

c. If the protester disagrees, he may appeal to the City Council at a formal council meeting. After reviewing the evidence, the City Council will issue their decision. The City Council’s decision is final; however, the protester can appeal the decision to the Circuit Court in Volusia County, Florida within thirty (30) days of the City Council’s final decision. Decisions at all levels shall be in writing to the protester.

12. **BID/PROPOSAL TABULATION**

Vendors who wish to receive a copy of the bid/proposal tabulation may obtain it via [www.demandstar.com](http://www.demandstar.com) or on the City of Port Orange website, Bid opportunities page at [www.port-orange.org/bids.aspx](http://www.port-orange.org/bids.aspx) or by email [purchdiv@port-orange.org](mailto:purchdiv@port-orange.org).

13. **BONDS**

If this Solicitation requires submission of bid guarantee and performance bonds, there will be a separate page explaining those requirements. Responses submitted without the required bid bond or certified check shall be deemed non-responsive. When the Purchasing Manager deems it necessary, bid bonds/deposits shall be prescribed and are advertised in the public notices inviting bids. Normally, if a bid bond/deposit is requested, it is in the amount of five percent (5%) of the bid amount. Payment and Performance Bonds requested for construction projects shall be in an amount equal to one hundred percent (100%) of the total contract amount. Upon award, the successful Vendor may also be required to furnish and pay for a satisfactory contract one hundred percent (100%) Payment and Performance Bond which will be recorded by the City, at the Vendor’s sole cost and expense, with the Clerk of the Circuit Court, Volusia County, Florida, and to enter into a written contract with the City of Port Orange. After recording, the City will furnish to the contractor the recording information for the bond to evidence that the contractor has met the requirements of Florida law. The City will bill the cost of recording to the contractor. Payment and Performance Bonds shall also be recorded at the Vendor’s expense in the Office of the Clerk of the Circuit Court, Volusia County, Florida. All bonds no matter which kind, are advertised in the Solicitation which appears in the newspaper. Unsuccessful Vendors are entitled to the return of their surety where the Purchasing Manager has required such. A successful Vendor shall forfeit any surety required by the Purchasing Manager upon failure on the part of the Vendor to enter into a contract within the time specified after the award of bid.

14. **CERTIFICATE OF INSURANCE**

If required upon notice of intent to award contract resulting from this solicitation, the selected Vendor will be required to submit a Certificate of Insurance showing proof of adequate coverage for professional general liability, errors and omissions and workers’ compensation as identified under the insurance requirements of this solicitation and listing the City of Port Orange as a Certificate Holder prior to execution of the contract.
15. **CHANGE ORDERS**

No oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All change order requests shall be made in writing by the Contractor for review by the Contract Administrator for the City of Port Orange. No work shall be performed as set forth in the change order until the Contractor receives an executed Purchase Order for the requested change.

16. **CHANGE ORDER REQUEST NOTIFICATION**

The Successful Contractor is responsible for giving the City of Port Orange, prior to the Contract expiration date, at least forty-five (45) calendar day’s advance notice for any anticipated changes in price greater than $25,000.00, time and/or scope of the awarded Contract. The Contractor shall not continue to provide services past the Contract expiration date unless approved by a written Change Order Notice from the City.

17. **CLEAN UP**

Upon completion of the delivery of materials, the Contractor shall restore any/all public and private property which was damaged during delivery. Restoration is meant to include removal of any spillage or restoring damage to the edge of pavement, sidewalks, driveways, landscaped areas, etc. Contractor shall make repairs consistent with or better than what existed prior to delivery. This shall be understood to include the use of sod or seed and mulch to replace (if necessary) existing grass that has been damaged.

If sod is used it shall match the sod present on the effected property. Contractor shall make all repairs and restorations at his expense.

18. **CONDUCT OF VENDORS**

All Vendors or individuals acting on behalf of a Vendor are hereby prohibited from lobbying or otherwise attempting to persuade or influence any member of the Evaluation Committee, City Council members, or City staff at any time during the course of the solicitation process. The solicitation process shall end upon issuance of the written City Manager and staff recommendation for selection of a Vendor. All Vendors or individuals acting on behalf of a Vendor are further prohibited from contacting or otherwise attempting to communicate with any member of the staff, Evaluation Committee or City Council members regarding the pending solicitation or its outcome until after the issuance of the written recommendation of the most qualified Vendor. Until such recommendation is issued in writing, any questions regarding the pending solicitation shall be submitted to the Purchasing Manager. Failure to comply with this procedure shall result in rejection/disqualification of said submittal without exception. Contact with staff, City Council members and the Evaluation Committee during a public meeting shall not be considered a violation of this requirement.

19. **CONE OF SILENCE**

The Cone of Silence is designed to protect the integrity of the procurement process by shielding it from undue influences prior to the execution of the award.

The Cone of Silence is defined as the period beginning with the issuance of the solicitation document and continues through the execution of the award document. During this time vendors, service providers and the like are prohibited from all communications regarding the solicitation with City staff, City consultants, City legal counsel, City Agents, or elected officials. Any
vendor who initiates any discussions or attempts to influence a member or members of the aforementioned shall be disqualified from continued participation in the procurement process with regard to that particular solicitation.

Exceptions to the Cone of Silence:

- Written communication directed to the Procurement Officer;
- All communications occurring at Pre-Proposal Conferences;
- Oral presentations before publicly notice committee meetings;
- Procurement of goods and services for Emergency situations; and
- Contractors already on contract with the City to perform services for the City are allowed discussions necessary for the completion of an existing contract.

20. CONFLICT OF INTEREST

For purposes of determining any possible conflict of interest, all Vendors must disclose if any City of Port Orange employee is also an owner, corporate officer, or employee of Vendor’s business. No official or employee of the City who exercises any functions or responsibilities in the review or approval of the undertaking or carrying out of the Scope of Work covered by the Contract shall voluntarily acquire any personal interest, directly or indirectly, in the contract or proposed Contract.

21. CONFLICT OF INSTRUCTIONS

If a conflict exists between the General Terms and Conditions and instructions contained herein, and the Special Terms and Conditions and instructions contained herein, the Special Terms and Conditions shall govern.

22. CONTRACT

Any acquisition above the $25,000 level shall be done through one of the formal competitive methods except upon City Council waiver and/or shall have City Council approval. Only the Purchasing Manager and/or City Manager, have the authority to obligate the City by entering into a written contract to purchase goods and/or services up to $25,000.00. The City of Port Orange, Florida reserves the right to reject any and all Responses or to waive any and all non-substantial irregularity in Responses received, whenever such waiver or rejection is in the best interest of the City.

23. CONTRACT OBLIGATION

The City of Port Orange City Council shall approve the contract if greater than $25,000.00 annually. The Mayor or other person authorized by the Mayor must sign the contract before it becomes binding on the City of Port Orange or the Vendor. Department heads are NOT authorized to sign contracts for the City of Port Orange. Binding agreements shall remain in effect until all products and/or services covered by this purchase have been satisfactorily delivered and accepted.

24. CONTRACT RENEWALS

Renewals may be made ONLY by written agreement between the City of Port Orange and the Vendor. Any price escalations are limited to those stated by the Vendor on the original Response.
25. **COOPERATIVE PURCHASING**
The City Manager may elect to purchase through or join with other governmental units in cooperative purchasing ventures when the best interest of the City would be served thereby, provided the same is in accordance with all applicable laws. In the event the City Manager should elect to purchase through or join with other governmental agencies in cooperative purchasing ventures, all purchases in excess of twenty-five thousand dollars ($25,000.00) shall require council approval before the purchasing contracts are entered into.

26. **COPYRIGHT AND PATENT RIGHTS**
Vendor warrants that there has been no violation of copyrights or patent rights in manufacturing, producing and/or selling the item(s) ordered or shipped as a result of this Response, and successful Vendor agrees to hold the City harmless from any and all liability, loss or expense by any such violation.

27. **COST INCURRED BY VENDOR**
All expenses, including costs for required bonds, involved with the preparation and submission of Responses to the City, or any work performed in connection therewith shall be borne by the Vendor. No payment shall be made for any response received, nor for any other effort required of or made by the Vendor prior to commencement of work as defined by the contract approved by the City Council.

28. **DAMAGE**
Any damage to driveways, irrigation systems, sidewalks, pavement, or landscaping will be evaluated by the City’s representative and the Contractor. If the Contractor is found to be at fault, all repairs, restitution, or reimbursements to the City must be completed within one week of discovery.

29. **DEBARMENT HISTORY**
The City will consider a Vendor’s debarment history information in its review and determination of responsibility. All Vendors are required to disclose to the City all cases of debarment filed, pending, or resolved by the City or other public entity during the last five (5) years prior to the solicitation response due date, whether such actions were brought by or against the Vendor, any parent or subsidiary of the Vendor, or any predecessor organization. If the Vendor is a joint venture, the information provided should encompass the joint venture (if it is not newly-formed for purposes of responding to the solicitation) and each of the entities forming the joint venture. Although the review of a Vendor’s debarment history is an issue of responsibility, the failure to provide debarment history as required in the Proposal Submittal and Requirements Section may result in a recommendation of non-responsive by the Purchasing Manager.

30. **DEFAULT PROVISIONS**
In the event of default by the Vendor, the City reserves the right to procure the item(s) bid from other sources and hold the Vendor responsible for excess costs incurred as a result. If a contractor defaults on a City contract the City Council may elect to refrain from doing business with the Vendor for a period of 36 months from the date of default.
31. **DELIVERY OF GOODS/SERVICES**

All materials are to be delivered F.O.B.; City of Port Orange designated facility.

Delivery dates pertaining to this invitation must be clearly stated in the bid form where required and include weekends and holidays. Failure to comply with this requirement may be a cause for disqualification of bid. Unless otherwise specified, delivery at the earliest date is required. The Vendor shall clearly state in the Response the time required for delivery upon receipt of contract or purchase order. Proposed delivery time must be specific and such phrases “as required,” “as soon as possible” or “prompt” may result in disqualification of the bid. Delivery time will be a factor for any orders placed as a result of this Response. The City reserves the right to cancel such order(s) or any part thereof, without obligation, if delivery is not made within the time(s) specified herein and hold the vendor in default.

Upon approval of a contract, the vendor is obligated to deliver the goods to the destination specified in the Solicitation or the Purchase Order and bears the risk of loss until delivery. If this Solicitation or Purchase Order does not contain delivery instructions, Vendor shall request instructions in writing from the Purchasing Manager. If the delivery instructions contained in the Solicitation allocate delivery costs and risks in a manner contrary to this section, the provisions of this Competitive Solicitation shall prevail.

When delivery is not met as provided for in the contract, the Purchasing Division reserves the right to make the purchase on the open market, with any cost in excess of the contract price paid by the Vendor, in addition to any other damages, direct or consequential, incurred by the City as a result thereof. In addition, failure of the Vendor to meet the contract delivery dates will be cause for removal of the Vendor from the City’s list of eligible Bidders/Proposers as determined by the Purchasing Division.

32. **DETERMINATION OF LOWEST AND BEST RESPONSIBLE BIDDER / PROPOSER**

In determining the lowest and best responsible Bidder/Proposer, in addition to price, there will be considered the following:

a. The ability, capacity and skill of the Bidder/Proposer to perform the contract.

b. Whether the Bidder/Proposer can perform the contract within the time specified, without delay or interference.

c. The character, integrity, reputation, judgment, experience, and efficiency of the Bidder/Proposer.

d. The quality of performance of previous contracts.

e. The previous and existing compliance by the Bidder/Proposer with laws and ordinances relating to the contract.

f. The sufficiency of the financial resources and ability of the Bidder/Proposer to perform the contract or provide the service.

g. The quality, availability and adaptability of the supplies or contractual services to the particular use required.
h. The ability of the Bidder/Proposer to provide further maintenance and service for the use of the subject of the contract.

i. The number and scope of conditions attached to the bid.

j. Such other factors as appear to the city council to be pertinent to the bid or the contract under all of the circumstances involved.

33. DISCLOSURE OF CONFLICTS

The award is subject to the provisions of Chapter 112.313, Florida Statutes. All Vendors must disclose with their Response the name of any officer, director, or agent who is also an employee of the City. Further, all Vendors must disclose the name of any employee who owns, directly or indirectly, an interest in the Vendor’s firm or any of its branches. The Vendor shall not compensate, in any manner, directly or indirectly, any officer, agent, or employee of the City for any act or service that he/she may do, or perform for, or on behalf of any officer, agent or employee of the Vendor. No officer, agent, or employee of the City shall have any interest, directly or indirectly, in any contract or purchase made, or authorized to be made by anyone for, or on behalf of the City. The Vendor shall have no interest and shall not acquire any interest that shall conflict in any manner or degree with the performance of the services required under the Solicitation.

34. DISQUALIFICATION OF BIDDER/PROPOSER

The Purchasing Manager shall maintain a current listing of qualified Bidders. The Purchasing Manager may, from time to time, remove any vendor’s name from the list of qualified Bidders. Normally the removal of a vendor from the vendor list is done after nonresponse from that vendor for three (3) consecutive Solicitations. Such action may also arise out of breach of contract, default, or irregular business practice, based on the Finance Director and City Attorney's recommendation. Any or all Responses may be rejected if the City believes that collusion exists among the Bidders/Proposers. Responses in which the prices are obviously unbalanced may be rejected. If multiple Responses are submitted by a Bidder/Proposer and after the Responses are opened one of the Responses is withdrawn, the result will be that all of the Responses submitted by that Bidder/Proposer will be withdrawn; however, nothing herein prohibits a vendor from submitting multiple Responses for different products or services.

35. EVALUATION

Evaluation shall be used as a determinant as to which Response items or services are the most efficient and/or most economical for the City. It shall be based on all factors which have a bearing on price and performance of the items in the user environment. All Responses are subject to tabulation by the City of Port Orange Purchasing Division and recommendation to the governing body. Compliance with all Solicitation requirements, delivery and needs of the using department are considerations in evaluating Responses. Pricing is NOT the only criteria for making a recommendation. The City of Port Orange Purchasing Division reserves the right to contact any Bidder/Proposer, at any time, to clarify, verify or request information with regard to any Response.

36. EXCEPTIONS TO SPECIFICATIONS

For purposes of evaluation, the Vendor must indicate any exception to the specifications, terms, and/or conditions, no matter how minor. This includes any agreement or contract forms supplied by the Vendor that are required to be signed by the City. If exceptions are not stated by the Vendor, in his bid, it will be understood that the item(s)/services fully comply with the specifications, terms and/or conditions stated by the City. Exceptions are to be listed by the Vendor on an attachment included with the bid. The City will not determine exceptions based on a review of any attached sales or manufacturer's literature.
37. **E-VERIFY**

Vendors shall utilize the U.S. Department of Homeland Security’s E-Verify system to verify the employment eligibility of all new employees hired by the Vendor during the term of contract and shall expressly require any subcontractor performing services pursuant to the contract to likewise utilize the U.S. Department of Homeland Security’s E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the term of contract.

38. **FACILITIES**

The City reserves the right to inspect the Vendor’s facilities at any time.

39. **FAILURE TO RESPOND**

If the vendor elects not to bid, please return the enclosed "Bidder Acknowledgement Form" by the bid due date and state the reason(s) for not bidding. Failure to respond, either by submitting a bid, or by submitting a "Statement of No Bid", three (3) times, shall result in the vendor’s name being removed from the City’s mailing list.

40. **FINANCIAL STABILITY**

Vendors shall be prepared to supply a financial statement upon request, preferably a certified audit of the last available fiscal year. A third party prepared financial statement and the latest Dunn & Bradstreet report will be accepted in lieu thereof.

41. **FORCE MAJEURE**

Neither party shall be liable for any delay in performance or failure to perform any obligation hereunder if, and to the extent that, such failure or delay is caused by an event of Force Majeure. Force majeure shall mean any act, event or condition that is beyond the party’s reasonable control, that materially and adversely affects the party’s ability to perform its obligations hereunder, and that is not the result of the party’s willful neglect, error, omission or failure to exercise reasonable due diligence.

42. **GOVERNING FORMS**

In the event of any conflict between the terms and provisions of these requirements and the specifications, the specifications shall govern. In the event of any conflict of interpretation of any part of this overall document, the City’s interpretation shall govern.

43. **GOVERNING LAW**

Vendors shall comply with all applicable federal, state and local laws and regulations. All Responses are solicited and shall be made pursuant to the Code of Ordinances, City of Port Orange, Chapter 2, Article VI, Division 2, Section 2-263, and all Responses will be evaluated in accordance with the provisions thereof. Code of Ordinances, City of Port Orange is on file in the Office of the City Clerk, City Hall, 1000 City Center Circle, Port Orange, Florida and at [www.municode.com](http://www.municode.com).

The City of Port Orange is also governed by the Consultants’ Competitive Negotiation Act, Section 287.055, Florida Statutes, as the method of selecting architects, engineers and land surveyors. The City has utilized the procedures in the Act for Professional counselors, environmentalists,
planners, general contractors, computer systems, designers, telecommunications consultants, maintenance technicians, financial services and other professional services.

Every acquisition equal to or greater than $10,000.00 must have a signed, notarized “Public Entity Crimes Form” to comply with Section 287.133(3)(a), Florida Statutes. Also required is the “Drug-Free Preference Form” to comply with Section 287.087, Florida Statutes. Each form is included in the Solicitation.

44. **GRANT FUNDING**

Any contract entered into by the City that is to be paid from grant funds shall be limited to payment from the grant funding and the vendor/provider understands that the City has not set aside any City funds for the payment of obligations under a grant contract. If grant funding should become unavailable at any time for the continuation of services paid for by the grant, and further funding cannot be obtained for the contract, then the sole recourse of the provider shall be to terminate any further services under the contract and the contract shall be null and void.

45. **HIPAA COMPLIANCE**

The Vendor agrees to comply with the Standards for Privacy of Individually Identifiable Health Information of the Health Insurance Portability and Accountability Act of 1996, PL 104-191, 45 CFR Parts 160-164, as amended, referred to as “HIPAA,” to the extent that the Vendor uses, discloses or has access to protected health information as defined by HIPAA.

46. **IDENTICAL TIE BIDS**

In accordance with Section 287.087, Florida Statutes, preference shall be given to businesses with Drug-Free Workplace Programs. Whenever two or more Responses that are equal with respect to price, quality, and service are received for the procurement of commodities or contractual service, a Response received from a business that certifies that it has implemented a Drug-Free Workplace Program shall be given preference in the award process.

47. **INDEMNIFICATION/HOLD HARMLESS**

Contractor covenants and agrees that it will indemnify and hold harmless the City and all of the City's officers, agents, and employees from any claim, loss, damage, costs, charge or expense arising out of any act, action, neglect or omission by contractor during the performance of the contract, whether direct, or indirect, and whether to any person or property to which the City of said parties may be subject, except that neither the contractor nor any of its sub-contractors will be liable under this section for damages arising out of injury or damage to persons or property directly caused or resulting from the sole negligence of City or any of its officers, agents, or employees.

48. **INDEPENDENT CONTRACTOR**

It is expressly understood and agreed by both parties hereto that the City is contracting with the successful vendor as an independent contractor. The parties hereto understand and agree that the City shall not be liable for any claims which may be asserted by any third party occurring in connection with the services to be performed by the successful vendor under this contract and that the successful vendor has no authority to bind the City.

The Vendor represents itself to be an independent contractor offering such services to the public and shall not represent himself or his employees to be an employee of the City. Therefore, the Vendor shall assume all legal and financial responsibility for taxes, FICA, employee fringe benefits,
worker's compensation, employee insurance, minimum wage requirements, overtime, etc., and
agrees to indemnify, save, and hold the City, its officers, agents, and employees, harmless from
and against, any and all loss; cost (including attorney's fees); and damage of any kind related to
such matters. The Vendor shall further understand that the City cannot save and hold harmless
and or indemnify the Vendor and/or the Vendor's employees against any liability incurred or
arising as a result of any activity of the Bidder/Proposer or any activity of the Vendor's employees
performed in connection with the Contract.

49. INSPECTIONS AND TESTING

City of Port Orange reserves the right to inspect any item(s) or service location for compliance
with specifications and requirements and needs of the using department. If a Vendor cannot
furnish a sample of a Response item, where applicable, for review, or fails to satisfactorily show
an ability to perform, the City can reject the Response as inadequate and non-responsive.

50. INSURANCE

If required upon execution of a contract, the Vendor shall maintain insurance during the life of
this agreement, and the City of Port Orange shall be listed as additional insured on that insurance
document. A waiver of subrogation must be added in all areas and shall suffice in lieu of additional
insured on workers' compensation, in an amount and a form set forth herein, to insure against
risks, which are identified herein. Insurance providers must be rated “A” or better accordingly to
the A.M. Best Company.

51. INSURANCE CANCELLATION

No change or cancellation in insurance shall be made without thirty (30) days' written notice by
the Vendor to the City. Insurance coverage required in these specifications shall be in force
throughout the contract term. Should any awardee fail to maintain or to provide acceptable
evidence of current insurance within five (5) days after receipt of written notice at any time during
the contract term, the City shall have the right to consider the Contract breached which shall
justify the termination thereof.

52. INSURANCE REQUIREMENTS

If required, the Vendor shall provide to the City a certificate of insurance identifying the City of
Port Orange as an additional insured. For workers' compensation coverage, the Vendor’s
insurance certificate shall include the insurer’s waiver of subrogation in lieu of naming the city as
an additional insured for workers’ compensation.

Policies other than Workers’ Compensation shall be issued by insurers licensed and/or duly
authorized under Florida Law to do business in the State of Florida and all Insuring companies are
required to have a minimum rating of “A” in the “Best Key Rating Guide” published by A.M. Best
& Company, Inc. Policies for Workers’ Compensation may be issued by companies authorized as
a group self-insurer by F.S. 440.572. The Vendor shall not commence work under the contract
until the City has received a certificate or certificates of insurance and endorsement evidencing
the required insurance. The Vendor shall provide the City written notice of cancellation,
nonrenewal or any other changes in coverage no later than ten (10) days prior to the effective
date of the change.

The City reserves the right to increase insurance coverage as determined for higher risk contracts
and shall reimburse the Contractor for the reasonable additional costs of increased coverage.
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<thead>
<tr>
<th>Insurance</th>
<th>Limits: Standards</th>
<th>Comments</th>
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<tbody>
<tr>
<td>Workers’ Compensation</td>
<td>Coverage A - Statutory</td>
<td>If the contract requires work on or about navigable waters, require Longshoreman’s and Harbor Workers’ Coverage. If vessels involved, require Jones Act coverage with limits of $500,000.</td>
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<tr>
<td>Additional Coverage:</td>
<td>Coverage B - $100,000</td>
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<td></td>
<td>All States (Broad Form)</td>
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<td>Voluntary Compensation</td>
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<tr>
<td>Comprehensive General Liability</td>
<td>Combined Single Limit Bodily</td>
<td>When the Contract work on or under Railroad rights of way or properties, the Contractor shall take out and maintain during the life of the Contract, Railroad protective liability and property damage insurance in amounts as requested by the Railroad.</td>
</tr>
<tr>
<td>(including Completed Operations and Contractual</td>
<td>Injury and Property damage</td>
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<td>Liability)</td>
<td>$500,000 occurrence</td>
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<td>Comprehensive</td>
<td>Auto Liability Body Injury:</td>
<td>Or $500,000 Combined Single Limit for Bodily Injury and Property Damage</td>
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<tr>
<td>Business, Automobile</td>
<td>$100,000 each person,</td>
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<td>Liability to include all automobiles.</td>
<td>$300,000 each occurrence.</td>
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<td>Property Damage Liability</td>
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<td>$100,000 each occurrence.</td>
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<tr>
<td>Additional Coverage:</td>
<td>Non-Owned, Hired Car</td>
<td></td>
</tr>
<tr>
<td>Property Insurance</td>
<td>Buildings - Completed value of contract.</td>
<td>If the Contract requires handling or installation of Owner’s equipment, coverage should be furnished on “All Risk” form, including transit and Owner shall be named.</td>
</tr>
<tr>
<td>Builders Risk.</td>
<td>“All Risk” coverage on latest ISO form or its equivalent.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permission granted to occupy.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Owner named as insured AIMA</td>
<td></td>
</tr>
<tr>
<td>Additional Coverage:</td>
<td>Coverage- $1,000,000 minimum</td>
<td></td>
</tr>
<tr>
<td>Professional Liability (Errors &amp; Omissions)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 53. INVOICES AND PAYMENTS

All invoices shall be sent to: City of Port Orange, Accounts Payable, P.O. Box 291759, Port Orange, Florida, 32129. In accordance with Florida Statutes, Chapter 218, payment will be made within 45 days after receipt of merchandise and a proper invoice. The City will attempt to pay within fewer days if Vendor offers a payment discount. The City cannot make advance payments, make deposits in advance of receipt of goods, or pay C.O.D. Vendors should state any payment discount in the space provided on the bid form for construction services.
54. **IREVOCABILITY OF RESPONSES**

Each Vendor agrees that Responses shall remain open until the effective date not to exceed 90 days after selection, shall not be subject to revocation or withdrawal, and shall be subject to the City Council’s acceptance of a contract with the Vendor.

55. **LATE SUBMISSIONS, LATE MODIFICATIONS AND LATE WITHDRAWALS**

Responses received after the Response Due Date and time are late and shall not be considered. Modifications received after the Response Due Date are also late and shall not be considered. Letters of withdrawal received after the Response Due Date are late and shall not be considered. Letters of withdraw received after contract award shall be deemed a breach of contract, subject to penalties as set forth in the contract and Solicitation.

56. **LEGAL REQUIREMENTS**

Applicable provision of all federal, state, county and local laws, and all ordinances, rules, and regulations shall govern development, submittal and evaluation of all Responses received in response hereto and shall govern any and all claims and disputes which may arise between person(s) submitting a response to a Solicitation hereto and the City by and through its officers, employees and authorized representatives, or any other person, natural or otherwise; and lack of knowledge by any Vendor shall not constitute a cognizable defense against the legal effect thereof.

Upon execution of a contract, the successful Vendor shall hold harmless, indemnify and defend the City of Port Orange, its members, officials, officers and employees against any claim, action, loss, damage, injury, liability, cost and expense of whatsoever kind or nature (including, but not by way of limitation, attorneys' fees and court costs) arising out of or incidental to the performance of the Contract, whether or not due to or caused by negligence of the City of Port Orange, its members, officials, officers or employees. This Contract requirement shall be reflected in the insurance coverage certificate.

57. **LICENSES, PERMITS AND TAXES**

The Vendor shall comply with all rules, regulations, laws and permitting requirements of the City, Volusia County, the State of Florida, and the United States Government now in force or hereafter to be adopted. The Vendor shall abide by all ordinances and laws pertaining to his operations and shall secure, at his expense, all licenses and permits necessary for construction and operation.

58. **LITERATURE (if applicable):**

If no brand, model or make is specified, Vendors shall submit descriptive literature and technical data, fully detailing all features, designs, construction, appointments, finishes and the like not covered in the specifications, necessary to fully describe the equipment, material, and/or services he proposes to furnish.

59. **LOCAL PREFERENCE**

In accordance with City of Port Orange City Code 2-275, except where federal or state law, or any other funding source, mandates to the contrary, the City shall give preference to local businesses in the following manner:

(a) **Competitive Bids**

   (1) Port Orange Business: In any competitive bidding process where a bid submitted by a Port Orange business is within eight percent (8%) of the lowest and best responsible bid
submitted by a non-Port-Orange business, then the Port Orange business shall have the opportunity to submit, within five (5) working days of the bid opening, a best and final bid equal to or lower than the amount of the original low bid. The bid shall then be awarded to the lowest and best responsible bidder.

(2) Volusia County business: In any competitive bidding process where a Volusia County business is within five percent (5%) of the lowest and best responsible bid submitted by a business other than a Port Orange business or Volusia County business, then the Volusia County business shall have the opportunity to submit, within five (5) working days of the bid opening, a best and final bid equal to or lower than the amount of the original low bid. The bid shall then be awarded to the lowest and best responsible bidder.

(3) Florida Business: In any competitive bidding process where a State of Florida business is within three percent (3%) of the lowest and best responsible bid submitted by a non-local business, then the Florida business shall have the opportunity to submit, within five (5) working days of the bid opening, a best and final bid equal to or lower than the amount of the original low bid. The bid shall then be awarded to the lowest and best responsible bidder.

(4) Tied Bid Preference: In case of a tie bid between a local business and a non-local business, the local business shall prevail. In case of a tie between two or more local businesses, the following order of preference shall control: first priority to Port Orange business, second priority to Volusia County business, and third priority to Florida business.

(b) Definitions. The following words, terms and phrases, when used in this section, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

**Port Orange Business** means a business having its headquarters and principal place of business within the City of Port Orange at least twelve (12) months prior to the bid or proposal opening date, as evidenced by a valid business tax receipt or such other documentation, to the City’s satisfaction, demonstrating the physical business presence of the firm within the limits of the City of Port Orange.

**Volusia County Business** means a business having its headquarters and principal place of business within the County of Volusia, and not within the City of Port Orange, at least twelve (12) months prior to the bid or proposal opening date, as evidenced by a valid business tax receipt or such other documentation, to the City’s satisfaction, demonstrating the physical business presence of the firm within the limits of Volusia County.

**Florida Business** means a business having its headquarters and principal place of business within the State of Florida, and not within Volusia County, at least twelve (12) months prior to the bid or proposal opening date, as evidenced by a valid business tax receipt or such other documentation, to the city’s satisfaction, demonstrating the physical business presence of the firm within the limits of the State of Florida.

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**60. MAINTENANCE**

Maintenance required for equipment Solicitation is preferred to be available in the City of Port Orange by a manufacturer-authorized maintenance facility. Costs for this service shall be shown on the Pricing/Delivery Information form. If the City of Port Orange opts to include maintenance, it shall be so stated in the purchase order and said cost will be included. Service will commence only upon expiration of applicable warranties and shall be priced accordingly.
61. **NAME BRANDS**

Specifications may reference name brands and model numbers. It is not the intent of the City of Port Orange to restrict these bids in such cases, but to establish a desired quality level of merchandise or to meet a pre-established standard due to like existing items. Vendors may offer items of equal stature and the burden of proof of such stature rests with the Vendor, unless otherwise specified by the City. The City of Port Orange shall act as sole judge in determining equality and acceptability of products offered.

62. **NON-DISCRIMINATION**

There shall be no discrimination as to race, color, religion, gender, age, marital status, national origin, ancestry, and physical or mental disability in the operations conducted under this contract. Included as applicable activities by the contractor under this section are the solicitation for or purchase of goods or services, or the subcontracting of work in performance of this contract.

63. **NON-EXCLUSIVITY OF CONTRACT**

The selected Vendor understands and agrees that any resulting contractual relationship is non-exclusive, and the City of Port Orange reserves the right to seek similar or identical services elsewhere if deemed in the best interest of the City of Port Orange.

64. **NON-PERFORMANCE:**

Failure to meet the expected quality of workmanship, schedule, or other criteria agreed upon, shall be considered a default.

In case of default, the City may procure the required services from other sources and hold the Consultant responsible for any excess costs occasioned thereby and may immediately cancel the contract.

65. **NOTICE TO CONTRACTOR**

The employment of unauthorized aliens by any contractor is considered a violation of Section 274A (e) of the Immigration and Nationality Act. If the contractor knowingly employs unauthorized aliens, such violation shall be cause for unilateral cancellation of the contract.

66. **OPTIONAL CONTRACT USAGE**

As provided in Section 287.042(16), Florida Statutes, State of Florida agencies may purchase from a contract resulting from this solicitation, provided the Department of Management Services, Division of Purchasing, has certified its use to be cost effective and in the best interest of the State. Contractor(s) may sell such commodities or services certified by the Division to State of Florida agencies at the contractor’s option.

67. **OTHER AGENCIES**

(a) All Vendors awarded contracts from this Bid may, upon mutual agreement, permit any municipality or other governmental agency to participate in the contract under the same prices, terms, and conditions, if agreed to by both parties.

(b) It is understood that at no time will any city, municipality, or other agency be obligated for placing an order for any other city, municipality, or agency; nor will any city, municipality, or agency be obligated for any bills incurred by any other city, municipality, or agency. Further, it is understood that each agency will issue its own purchase order to the awarded Vendor(s).
68. **PATENTS/COPYRIGHTS**

The successful vendor agrees to indemnify and hold the City harmless from any claim involving patent infringement or copyrights on goods supplied.

69. **PRE-BID CONFERENCE OR PRE-PROPOSAL CONFERENCE**

The Purchasing Manager shall determine if a pre-bid conference is required and provide the date, time and location in the Solicitation legal advertisement and Solicitation specifications. The conference shall normally be held in the Council Chambers, located on the first floor of City Hall, 1000 City Center Circle, Port Orange, Florida. A site visit may be included and shall immediately follow. Attendance to the pre-bid and pre-proposal conference is normally non-mandatory. Only Vendors attending a mandatory pre-bid conference will be eligible to submit a Response. The representative of each Vendor shall be an authorized employee of the Vendor and shall sign in accordingly.

70. **PREPARATION OF RESPONSES**

In preparing Responses, the Proposal Form, the Bid Form (when a Bid Bond is permitted as proposal security), Certificate as to Corporate Principal, Public Entity Crimes Statement, Anti-Collusion Statement, and Drug Free Preference Statement must be properly executed in ink.

Upon the prescribed Schedule of Unit Prices, all bid prices shall be typewritten or written in ink, or electronically imputed in the blank spaces for each item, with the amounts extended if a unit price bid, and all amounts totaled. The sum of the Total Bid as calculated from the individual items, Schedule of Unit Prices, shall equal the Total Price. Except as provided below, bids containing substitutions or combinations of alternates will not be considered unless such substitutions or combinations are specifically authorized by the Proposal. The Vendor shall sign his/her name and give his/her business address in the spaces provided therefore. If the Proposal is made as a partnership, it shall be signed by all partners; if made by a corporation, it shall be signed in the name of the corporation by one of the officers thereof and shall have affixed the seal of the corporation.

71. **POSTPONEMENT / CANCELLATION / WAIVER OF IRREGULARITIES**

The City may, at its sole and absolute discretion, reject any and all, or parts of, Responses; re-advertise the Solicitation for new Responses; postpone or cancel, at any time, the Solicitation process; or waive any irregularities in the Solicitation or in the Responses received as a result of the Solicitation, or to accept that Response which best serves the interest of the City.

72. **PRICING**

The Vendor certifies that prices, terms and conditions in the Response will be firm for acceptance for a period of ninety (90) days from the date of Response opening unless otherwise stated by the City. Responses may not be withdrawn before the expiration of ninety (90) days. Prices shall be firm, with no escalator clauses unless specified by the City. Responses may be withdrawn after ninety (90) days only upon written notification to the City. Prices for all goods and/or services shall be firm for the duration of this contract and shall be stated on the Pricing/Delivery Information form.
Prices shall be all inclusive: no price changes, additions, or subsequent qualifications will be honored during the course of the contract. All prices must be written in ink or typewritten. Pricing on all transportation, freight, drayage and other charges are to be prepaid by the contractor and included in the bid prices. If there are any additional charges of any kind, other than those mentioned above, specified or unspecified, the Vendor shall indicate the items required and attendant costs or forfeit the right to payment for such items. Where unit pricing and extended pricing differ, unit pricing prevails. In the event of any discrepancy between the written amounts and the numerals, the written amounts shall govern and will be considered as the price bid.

When submitting Bids/Proposals based on a Lump Sum basis, Vendors shall be required to submit a Schedule of Unit Pricing for each line item listed on the Bid Proposal in order to be considered for award.

73. **PRODUCTS/ESTIMATES:**

Items included on the Bid Form represent the needs of various departments within the City. This is in no way to be construed as the entire or complete list of products to be purchased from the resulting contract.

There is no anticipated dollar volume for this contract and cannot be guaranteed. Items shall be ordered on an as needed, when needed basis. Exact quantities or estimated quantities cannot be predetermined.

74. **PROPRIETY INFORMATION**

Upon receipt by the City, responses to Solicitations, become public records subject to the provisions Florida’s state policy on public records, Section 119, Florida Statutes. If you believe that any portion of your response is exempt, you should clearly identify the specific documents for which confidentiality is claimed and provide specific legal authority of the asserted exemption. Any financial statement that an agency requires a prospective Vendor to submit in order to prequalify for bidding or for responding to a proposal for a road or any other public works project is exempt from Section 119.07, Florida Statutes, and Article I, 24(a), Florida Constitution.

75. **PROTECTION**

Precaution shall be exercised at all times for the protection of persons, (including employees) and property. All existing structures, utilities, services, roads, trees, shrubbery, etc. shall be protected against damage or interrupted service at all times by the Vendor during the term of contract, and the Vendor shall be held responsible for any damage to the property occurring by reason of his operation on the property.

76. **PUBLIC ENTITY CRIMES**

In accordance Section 287.133 (2)(a), Florida Statutes: A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided Section 287.017, Florida Statutes, for CATEGORY TWO for a period of 36 Months from the date of being placed on the convicted vendor list.
**77. PUBLIC RECORDS COMPLIANCE**

Contractor shall comply with public records laws as set forth in Section 119, Florida Statutes, and shall specifically:

a. Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service.

b. Provide the public with access to public records on the same terms and conditions that the City would provide the records and at a cost that does not exceed the cost provided in Section 119, Florida Statutes, or as otherwise provided by law.

c. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law.

d. Meet all requirements for retaining public records and transfer to the City, at no cost, all public records in possession of the Contractor upon termination of the Contract and destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the City in a format that is compatible with the information technology systems of the City.

The failure of Contractor to comply with a public records request shall constitute a material breach of the contract.

**78. PUBLIC RECORDS/PUBLIC MEETINGS EXEMPTION STATEMENT**

Section 119.071(1)(c), Florida Statutes: Any financial statement that an agency requires a prospective Vendor to submit in order to prequalify for bidding or for responding to a proposal for a road or any other public works project is exempt from s. 119.07(1) and s. 24(a), Art. I of the State Constitution. On June 2, 2011, Governor Scott signed HB 7223 into law. This new legislation amends Florida’s Public Records and Sunshine Laws, by expanding “exemptions” applicable to bids, proposals and replies to sealed competitive solicitations, and closes evaluation meetings from the public in certain instances. First, Section 119.071, Florida Statutes was amended to provide that sealed bids, proposals, or replies received by a Florida public agency shall remain exempt from disclosure until an intended decision is announced or until 30 days from the opening, whichever is earlier. This means that Vendors will not be able to procure a copy of their competitor’s bids until an intended decision is reached or 30 days has elapsed since the time of the bid opening. The prior version of the law provided for a 10-day exemption. Next, Section 286.0113, Florida Statutes was amended to provide that meetings of persons appointed to evaluate bids or proposals and negotiate contracts shall be closed in certain circumstances. Specifically, portions of such meetings may now be closed to the public during oral presentations made by a vendor, or where a vendor answers questions. In other words, neither Vendors, nor the public will be permitted to sit in on meetings, unless this exemption is waived by the City Council, wherein their competitors are making presentations or discussing their bid or proposal with the committee members. The portions of these meetings must still be recorded and are subject to disclosure at the time of an intended award decision or within 30 days of the bid or proposal opening, whichever is earlier. Portions of the meetings that do not involve presentations, questions and answers, or negotiation strategy or negotiation sessions are still open to the public and competing Vendors, but the new law limits public attendance to portions of such meetings.
79. **PURCHASE ORDER AND DELIVERY**

The successful Vendor shall not deliver products or provide services without a City of Port Orange Purchase Order, signed by an authorized agent of the City of Port Orange. The fastest, most reasonable delivery time shall be indicated by the Vendor. Any special information concerning delivery should also be included, on a separate sheet, if necessary. All items shall be shipped F.O.B. INSIDE DELIVERY unless otherwise stated in the specifications. This shall be understood to include bringing merchandise to the appropriate room or place designated by the using department. Every tender or delivery of goods must fully comply with all provisions of these requirements and the specifications including time, delivery and quality. Nonconformance shall constitute a breach which shall be rectified prior to expiration of the time for performance. Failure to rectify within the performance period shall be considered cause to reject future deliveries and cancellation of the contract by City of Port Orange without prejudice to other remedies provided by law. Where delivery times are critical, the City of Port Orange reserves the right to award accordingly.

80. **QUALITY**

All materials used for the manufacture or construction of any supplies, materials or equipment covered by this bid shall be new. The items bid must be new, the latest model, of the best quality and highest-grade workmanship unless otherwise specified in this bid by the City.

81. **QUESTIONS, INTERPRETATIONS**

Questions regarding interpretation of Responses, Solicitation results or Solicitation awards shall be directed in writing to the Purchasing Division and referenced by the Solicitation number no later than the last day for questions as specified in the Solicitation documents. The City of Port Orange shall not be responsible for oral interpretations given by any City personnel or representative or others. The issuance of a written addendum is the only official method whereby interpretation, clarification or additional information can be given.

82. **RECORDS/AUDIT**

The Vendor shall maintain records sufficient to document their completion of the scope of services as a public record and as a requirement of the Contract. At all reasonable times, these records, unless exempt or confidential, shall be subject to review, inspection, copy and audit by persons duly authorized by the City. These records shall be kept for a minimum of three (3) years after completion of the Contract and in accordance with the requirements of public records retention as prescribed by general law. Records which relate to any litigation, appeals or settlements of claims arising from performance under this requirement shall be made available until a final disposition has been made of such litigation, appeals, or claims.

83. **RECYCLED MATERIALS**

City of Port Orange encourages the use of products made of recycled materials.

84. **REJECTING OF RESPONSES, REBIDDING**

The City reserves the right to accept or reject any or all Responses or parts of Responses, to waive irregularities and technicalities, and to request re-bids. The City also reserves the right to award the contract on such items the City deems will best serve the interests of the City. The City further reserves the right to award the contract on a "split order" basis, or such combination as shall best serve the interests of the City unless otherwise specified. The City Council shall have the authority to reject any and all Responses. If the lowest and best Response exceeds the budgeted amount.
and the City Council does not make additional funds available, the purchasing agent with the help of the department head shall have the authority to re-advertise the article or articles for bidding after making sufficient changes in the plans or specifications to bring the cost within the limit of the money available. (Code 1981, § 8-28.)

85. REQUEST FOR ADDITIONAL INFORMATION

Prior to the final Solicitation selection, Vendors may be required to submit additional information which the City may deem necessary to further evaluate the Vendor’s qualifications to perform under the terms of the Solicitation and subsequent Contract.

86. REVIEW OF RESPONSES/SUBMISSIONS

Each Response will be reviewed to determine if the Response is responsive to the submission requirements outlined in the Solicitation. A responsive Response is one which follows the requirements of the Solicitation, includes all required documentation, is submitted in the format outlined in the Solicitation, is of timely submission, and has the appropriate signatures as required on each document. Failure to comply with these requirements may deem your Response non-responsive.

87. RIGHT OF NEGOTIATION RFP/RFSQ/ITN

The City reserves the right to negotiate with the selected Vendor the exact terms and conditions of the Contract.

88. RIGHT OF WITHDRAWAL

A bid, proposal, statement, or reply may not be withdrawn before the expiration of ninety (90) days from the Response due date.

89. RIGHTS TO SOLICITATION SUBMITTED MATERIAL

All Responses, inquiries, or correspondence relating to or in reference to a Solicitation, and all reports, charts, and other documentation submitted by Vendors shall become the property of the City when received.

90. RULES, REGULATIONS AND LICENSING REQUIREMENT

The Vendor shall comply with all laws, ordinances and regulations applicable to the services contemplated herein, including those applicable to conflict of interest and collusion. Vendors are presumed to be familiar with all federal, state and local laws, ordinances, codes and regulations that may in any way affect the services offered.

91. SAMPLES

Samples, when requested, must be furnished at, or before, Response opening, (unless otherwise specified), and will be delivered at no charge to the City. If not used and/or destroyed in testing, said sample(s) will, at the Vendor’s request, be returned within thirty (30) days after bid award at the Vendor’s expense. If requested by the City, samples and/or inspection of like items are to be made available in the central Florida area.

92. SEPARATION AND DISTRIBUTION

The Solicitation has been designed for transmittal as a complete document to interested parties. It is recommended that it not be separated; however, it may be reproduced in its entirety as additional distribution might dictate.
SEVERABILITY
If any section, subsection, paragraph, sentence, clause, phrase or word of these requirements or the specifications shall be held invalid, such holding shall not affect the remaining portions of these requirements and the specifications and it is hereby declared that such remaining portions would have been included in these requirements and the specifications as though the invalid portion had been omitted.

SIGNATURE REQUIRED
All Responses must show the company name and be signed by a company officer or employee who has the authority to bind the company or firm by their signature. UNSIGNED RESPONSES WILL BE REJECTED. All manual signatures must be original - no rubber stamp, photocopy, etc.

SIGNED RESPONSE CONSIDERED AN OFFER
The signed Response is considered an offer on the part of the Vendor, which offer shall be considered accepted upon approval by the City of Port Orange City Council (if required). The City of Port Orange will issue a purchase order or a letter of authorization to the successful Vendor, as authorization for delivery of the items awarded subject to requirements of detailed specifications and those contained herein. In the event of default on the part of the Vendor after such acceptance, the City may take such action as it deems appropriate including legal action for damages or specific performance.

SILENCE OF SPECIFICATIONS
The apparent silence of specifications as to any detail, or the apparent omission from it of a detailed description concerning any point, shall be regarded as meaning that only the best commercial practice is to prevail and that only material and workmanship of the finest quality are to be used. All interpretations of specifications shall be made on the basis of this statement. The items furnished under this contract shall be new, unused of the latest product in production to commercial trade and shall be of the highest quality as to materials used and workmanship. Manufacturer furnishing these items shall be experienced in design and construction of such items and shall be an established supplier of the item bid.

SOLICITATION FORM COMPLETION, SUBMISSION AND RECEIPT OF RESPONSES
Unless otherwise specified, Vendors shall use the Solicitation forms supplied by the Purchasing Division. Responses shall be typewritten or handwritten in ink and shall bear the original signature of the Vendor's authorized representative. Responses containing erasures or corrections must be initialed by the Vendor in ink. Responses shall be submitted by mail or hand delivery only. No Response will be accepted by facsimile transmission, e-mail or other electronic delivery. Responses submitted by mail shall be addressed to: Michael Hall, Buyer, Purchasing Office, a division of the Finance Department, Port Orange City Hall, 1000 City Center, Port Orange, Florida 32129. Responses submitted by hand delivery shall be delivered to: City Clerk, Port Orange City Hall, 1000 City Center Circle, Port Orange, Florida 32129. Responses will be accepted until 2:30 p.m. on the date indicated in the Solicitation documents or as addenda issued by the City. One (1) sealed envelope or package shall be submitted. The sealed envelope/package must contain the required forms and price proposals, where applicable, and will be evaluated and deemed responsive or non-responsive. All Responses deemed non-responsive will be returned to the Vendor and will not be opened.
Bids (Envelope/Package) shall contain one (1) original and one (1) digital (CD or flash drive) version unless otherwise indicated in the legal advertisement and shall be mailed or delivered as set forth in the preceding paragraph in one (1) SEALED ENVELOPE/PACKAGE. The envelope/package shall be clearly marked on the outside to include the bid project name, bid number and name of the Vendor.

98. STATE LICENSING REQUIREMENTS

All entities defined under Chapters 607, 608, 617 or 620, Florida Statutes, seeking to do business with the City shall be on file and in good standing with the State of Florida’s Department of State. Prior to making an offer, the Vendor shall have met the license, certification, and any other requirements of the state, county, city and/or other agency of authority with jurisdiction in such matters and should provide copies of documentation that evidence such qualifications with the response to the Solicitation; and, that the Vendor shall provide follow-up evidence that the Vendor maintains such credentials throughout the period of the agreement. A copy of a current certificate of authority from the Secretary of State authorizing the Bidder/Responder to do business in the State of Florida, or other evidence of legal authority to do business in the state, county, city and/or any other agency of authority should be provided with your response to the Solicitation. Information concerning certification with the Secretary of State may be obtained at http://ccfcorp.dos.state.fl.us/index.html. Contract documents shall be executed by the entity’s duly authorized officer as evidence by entity records.

99. SUBCONTRACTING

The Vendor will not sub-contract or enter into any subcontracting agreements pertaining to this contract, without obtaining written approval from the City of Port Orange.

100. SUPPLEMENTAL MATERIALS

Vendors are responsible for including all pertinent product data in the returned bid package. Literature, brochures, data sheets, specification information, completed forms requested as part of the bid package and any other facts which may affect the evaluation and subsequent contract award should be included. Materials such as legal documents and contractual agreements that the Vendor wishes to include as a condition of the bid must also be in the returned bid package. Failure to include all necessary and proper supplemental materials may be cause to reject the entire bid.

101. TAXES

The City of Port Orange is exempt from all federal excise, state and local taxes unless otherwise stated in this document. A Tax Exemption Certificate will be furnished upon written request to the City of Port Orange Purchasing Division.

102. TERM CONTRACTS

Acceptance by the City of Port Orange of Vendor’s offer shall be limited to the terms herein unless expressly agreed in writing by the City. If the contract is intended to cover a specific time period, the term will be given in the bid specifications.

103. TERMINATION

The City of Port Orange reserves the right to terminate the contract for default if the Vendor breaches any of the terms therein, including warranties of the Vendor or if the Vendor becomes insolvent or commits acts of bankruptcy. Such right of termination is in addition to and not in lieu
of any other remedies which the City of Port Orange may have in law or equity. Default may be construed as, but not limited to, failure to deliver the proper goods and/or services within the proper amount of time, and/or to properly perform any and all services required to the City's satisfaction and/or to meet all other obligations and requirements. The City may cancel the Contract at any time for breach of contractual obligations by providing the Vendor with a written notice of such cancellation. Should the City exercise its right to cancel the contract for such reasons, the cancellation shall become effective on the date as specified in the notice of cancellation sent to the Vendor.

104. TERMINATION - NOTICE

Either party may cancel the contract at any time after award, unless otherwise specified. The City shall be required to give the vendor notice thirty days prior to the date of cancellation of the contract. The vendor shall be required to give the City written notice (60) sixty days prior to the date of cancellation of the contract. The City of Port Orange may terminate the contract without cause upon thirty (30) days written notice.

105. TITLE TRANSFER

Title and Risk of Loss of goods shall not pass to City of Port Orange until City of Port Orange actually receives and takes possession of the goods at the point or points of delivery. Receiving times may vary with the using department. Generally, deliveries may be made between 8:30 a.m. and 3:00 p.m., Monday through Friday. The Vendor is advised to consult the using department for instructions. The place of delivery shall be specified in the bid specification and/or on the Purchase Order as a “Deliver To:” address.

106. UNBALANCED BID

A mathematically unbalanced bid is where a bidder places a high price on some items and a low price on other items in a unit price contract. A bid is materially unbalanced when there is reasonable doubt that acceptance of a mathematically unbalanced bid will result in the lowest overall cost to the City. Unbalanced Bids will be rejected if the prices are deemed materially unbalanced.

107. USE OF SOLICITATION FORMS

The Vendor shall complete the appropriate Solicitation Form(s) included in the Solicitation. All blanks on the Solicitation Forms shall be completed. If a question or confirmation is not applicable, it should be answered with an "N/A."

Supplemental information may be attached to the Solicitation Forms. Failure to fully complete the appropriate Solicitation Forms may result in disqualification of the Response. If additional space for a response is required, attach an additional page to the page on which the question is stated. Clearly identify the number of the question to which the response is attached. Further, if additional Solicitation Form pages are needed, photocopy or replicate as appropriate, and attach such additional pages to the page on which the question or chart is stated. The signature of the Authorized Person or Entity must be that of an officer, partner or a sole proprietor of the entity making the Response. The original Response, and each copy submitted shall contain an original signature on the Vendor’s Acknowledgement Form contained in each Solicitation.
108. **VARIANCES**

For purposes of Response evaluation, Vendors must indicate any variances, no matter how slight, contained in the Response. No variations or exceptions by a Vendor will be considered or deemed a part of the Response submitted unless such variances or exceptions are listed in the Response and referenced in the space provided on the Response pages. If variances are not stated, or referenced as required, it will be assumed that the product or service complies with the City's terms, conditions and specifications. By receiving a Response, the City does not necessarily accept any variances contained in the Response. All variances submitted are subject to review and approval by the City. If any Response contains material variances that, in the City's sole opinion, make that Response conditional in nature, the City reserves the right to reject the Response or part of the Response that is declared, by the City, as conditional.

109. **VENDOR'S PRODUCT OR SERVICES**

The Vendor's product (if applicable) delivered to the City shall be free of all liens, claims or encumbrances, and the vendor warrants that it has a clear title to the product being delivered.

a. If the Vendor is contracted to provide services, such services shall be fully satisfactory to the City as determined by the City.

b. The Vendor shall provide the City with any data, reports or other information as required and requested by the City to enable it to utilize the product or service furnished by the Vendor.

c. In furnishing the service or product to the City, the Vendor shall comply with all federal, state, county laws, and city rules, regulations and codes and their successors or amendments. Violation of such laws, rules, regulations and codes may be grounds for delaying or reducing the amount due, or in rescinding the contract, Contract, proposal or quote.

110. **WAIVER OF IRREGULARITIES**

The City of Port Orange reserves the right to waive and/or reject any non-substantial irregularity in Responses received whenever such waiver or rejection is in the best interest of the City and/or it does not meet the minimum requirements set forth. All reasonably responsive Responses will be considered. However, the City reserves the right to waive formalities or informalities in Responses, to reject, with or without cause, any or all Responses or portions of Responses, or to interview or not interview individual Vendors, and to accept any Responses or portions of Responses deemed to be in the best interest of the City. The city council shall grant the City Manager to waive any and all non-substantial irregularities in any and all formal Solicitations. (Code 1981, § 8-29; Ord. No. 2015-17, § 1, 5-19-2015)

111. **WARRANTIES**

Vendors shall furnish all data pertinent to warranties or guarantees which may apply to items in the Response. Vendors may not limit or exclude any implied warranties. The Vendor warrants that product sold to the City shall conform to the standards established by the U.S. Department of Labor under the Occupational Safety and Health Act of 1970. In the event product does not conform to OSHA Standards, where applicable, City of Port Orange may return the product for correction or replacement at the Vendor's expense. If the Vendor fails to make the appropriate correction within a reasonable time, City of Port Orange may correct at the Vendor's expense.
SECTION 6 – SPECIAL CONDITIONS

PERIOD OF OFFER VALIDITY:
Bids offered in this ITB must remain firm for a period of ninety (90) Days from the ITB opening date.

CONTRACT TERM:
The term of the contract shall be two (2) years with two (2) one (1) year renewal options agreed upon by both parties.

ELIGIBILITY OF VENDOR:
To be eligible to respond to this ITB, the Vendors must have prior experience working with the services described in this ITB. Please provide eligibility experience with your submittal.

NOTICE:
The City reserves the right to consider cooperative contracts, federal, state municipal etc.; in the evaluation process. If in the City's best interest, the City may utilize a cooperative contract in lieu of making an award.

PAYMENT & PERFORMANCE BONDS:
Upon award, the successful bidder will also be required to furnish and pay for a satisfactory contract one hundred percent (100%) Payment and Performance Bond to be recorded by the City, with the Clerk of the Circuit Court, Volusia County, Florida and to enter into a contract for services with the City of Port Orange. After recording, the City will furnish to the contractor the recording information for the bond to evidence that the contractor has met the requirement of Florida law. The City will bill the cost of recording to the contractor.

ESCALATION / DE-ESCALATION:
Bid prices shall remain firm for a period of one-year (1) year from the date of award. The contract prices may be changed after the first year for the following reasons:

An increase or decrease in the supplier’s cost of materials may be justification for price change; however, this shall not be construed in any way to increase vendor’s margin of profit. All written request for a price increase must include backup documentation as to the nature of the increase and shall be submitted to the City Purchasing Manager at least 30 days prior to the scheduled price increase/decrease or renewal of contract. Approval of each request shall be by written confirmation from the City Purchasing Manager. If the City should consider said increase unwarranted or unreasonable, the City reserves the right to terminate the contract with the vendor. Any price decline at the manufacturer’s level shall be reflected in an immediate reduction of the contract prices and the vendor shall notify the buyer of said decline.

LICENSES AND PERMITS:
Contractor is responsible for all applicable local and state licenses, permits and fees.

[Remainder of this page left intentionally blank]
SECTION 7 – REQUIRED FORMS

FORM 7.1 – BID SUBMITTAL CHECKLIST

[ ] Form 7.2 – Vendor’s Acknowledgement
[ ] Form 7.3 – Addendum and Change Order Procedure Acknowledgement
[ ] Form 7.4 – Drug Free/Tobacco Preference Statement
[ ] Form 7.5 – Public Entity Crimes Statement
[ ] Form 7.6 – Affidavit of Anti-Collusion
[ ] Form 7.7 – Statement of Vendor’s Qualifications
[ ] Form 7.8 – Professional References for Previous Experience
[ ] Form 7.9 – Listing of Subcontractors
[ ] Form 7.10 – Local Business Affidavit of Eligibility

[ ] Attachment 1 – Bid Proposal
[ ] Copy of License (Sunbiz, etc.)

[ ] Submission of one (1) original marked “ORIGINAL” and one (1) digital (CD or flash drive) version in PDF format.

BY:

[ ] Name of Business

[ ] Authorized Signature

[ ] Date

This document must be completed and returned with your Submittal.
FORM 7.2 – VENDOR’S ACKNOWLEDGEMENT FORM

I have carefully examined the Invitation to Bid (ITB), Instructions to Vendors, General and/or Special Conditions, Specifications, and any other documents accompanying or made a part of this invitation.

I hereby propose to furnish the goods or services specified in the Invitation to Bid at the prices or rates as finally negotiated. I agree that my bid will remain firm for a period of up to ninety (90) days in order to allow the City of Port Orange adequate time to evaluate the proposed bid. Furthermore, I agree to abide by all conditions of the Invitation to Bid.

I certify that all information contained in this Bid is truthful to the best of my knowledge and belief. I further certify that I am a duly authorized to submit this Bid on behalf of the Vendor / Contractor as its act and deed and that the Vendor / Contractor is ready, willing and able to perform if awarded the contract.

I further certify that this Bid is made without prior understanding, Contract, connection, discussion, or collusion with any person, firm or corporation submitting a Bid for the same product or service; no officer, employee or agent of the City of Port Orange City Council or of any other Vendor interested in said ITB; and that the undersigned executed this Vendor’s Acknowledgement with full knowledge and understanding of the matters therein contained and was duly authorized to do so.

I further certify that having read and examined the specifications and documents for the designated services and understanding the general conditions for contract under which services will be performed, does hereby propose to furnish all labor, equipment, and material to provide the services set forth in the ITB.

I hereby declare that the following listing states any clarifications, any and all variations from and exceptions to the requirements of the specifications and documents. The undersigned further declares that the “work” will be performed in strict accordance with such requirements and understands that any exceptions to the requirements of the specifications and documents may render the Bid non-responsive.

NO EXCEPTIONS ALLOWED AFTER THE BID IS SUBMITTED:
Please check one: □ I take NO exceptions. □ Exceptions (list below; add additional pages if necessary):

________________________________________________________________________
________________________________________________________________________

NAME OF BUSINESS

AUTHORIZED SIGNATURE

NAME, TITLE, TYPED

FEDERAL IDENTIFICATION #

STATE OF_________________________ COUNTY OF_________________________

MAILING ADDRESS

CITY, STATE & ZIP CODE

TELEPHONE NUMBER / FAX NUMBER

E-MAIL ADDRESS

The foregoing instrument was acknowledged before me this day of_________________________ 20________by
_________________________, who is personally known to me or who has produced ad identification and
who did take an oath.

My Commission Expires:

Notary Public

This document must be completed and returned with your Submittal

ITB 19-35 CITYWIDE PAVING PROGRAM Page 113 of 140
FORM 7.3 – ADDENDUM and CHANGE ORDER PROCEDURE ACKNOWLEDGEMENT

ADDENDUM ACKNOWLEDGEMENT
I have carefully examined the Invitation to Bid (ITB), Instructions to Vendors, General and/or Special Conditions, Specifications, and any other documents accompanying or made a part of this invitation to Bid.

I acknowledge receipt and incorporation of the following addenda, and the cost, if any, of such revisions has been included in the price of the bid proposal.

Addendum #_________ Date: ___________ Addendum #_________ Date: ___________
Addendum #_________ Date: ___________ Addendum #_________ Date: ___________

CHANGE ORDER PROCEDURE ACKNOWLEDGEMENT
If awarded the Contract for this Solicitation, I acknowledge that no oral statement of any person shall modify or otherwise change, or affect the terms, conditions or specifications stated in the resulting contract. All change orders requests shall be made in writing by the Contractor for review by the Contract Administrator for the City of Port Orange. No work shall be performed as set forth in the change order until the Contractor receives an executed Purchase Order for the requested change.

I acknowledge the following statement regarding Change Orders to the awarded Contract:

“The Successful Contractor is responsible for giving the City of Port Orange, prior to the Contract expiration date, at least forty-five (45) calendar days’ advance notice for any anticipated changes in price greater than $25,000.00, time and/or scope of the awarded Contract. The Contractor shall not continue to provide services past the Contract expiration date unless approved by a written Change Order Notice from the City.”

*******************************************************

Name of Business

By: ________________________________
Printed Name: ________________________________
Title: ________________________________

STATE OF ________________________________
COUNTY OF ________________________________

Sworn to (or affirmed) and subscribed before me this day of ________________, 20__, by ________________________________ as ________________________________ of ________________________________ (NAME) ________________ as ___________________________________________ (TITLE)
______________________________ (NAME OF ORGANIZATION)

[Notary: Please select one]
☐ is personally known to me; or
☐ has produced ________________________________ as identification.

Notary Public, State of ________________________________
Printed, typed or stamped name, commission and expiration:

This document must be completed and returned with your Submittal
FORM 7.4 – DRUG-FREE PREFERENCE STATEMENT

IDENTICAL TIE BIDS - Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids, proposals, statements, or replies that are equal with respect to price, quality, and service are received by the city for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. Established procedures for processing tie bids will be followed if none of the tied vendors have a drug-free workplace program.

In order to have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Section 287.087, Florida Statutes.

As an authorized representative of the firm, I certify that this firm complies fully with the above requirements.

________________________________________
Name of Business

By: ______________________________________
Printed Name: ____________________________
Title: ________________________________

STATE OF ____________________________
COUNTY OF ____________________________

Sworn to (or affirmed) and subscribed before me this____day of____________________, 20____, by
________________________________________, as __________________________ of
________________________________________, and who:
________________________________________(NAME)
________________________________________(TITLE)
________________________________________(NAME OF ORGANIZATION)

[Notary: Please select one]
☐ is personally known to me; or
☐ has produced ______________________ as identification.

________________________________________
Notary Public, State of ________________

This document must be completed and returned with your Submittal

Printed, typed or stamped name, commission and expiration:
FORM 7.5 – SWORN STATEMENT UNDER SECTION 287.133(3)(A), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

(To be signed in the presence of notary public or other officer authorized to administer oaths.)

Before me, the undersigned Authority, personally appeared affiant ____________________, who, being by me first duly sworn, made the following statement:

1. The business address of ____________________________ (name of Offeror or business) is ________________________________ .

2. My relationship to ____________________________ (name of Offeror or business) is ____________________________ (relationship such as sole proprietor, partner, president, vice president).

3. I understand that a public entity crime as defined in Section 287.133 of the Florida Statutes includes a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity in Florida or with an agency or political subdivision of any other state or with the United States, including, but not limited to, any proposal or contract for goods or services to be provided to any public entity or such an agency or political subdivision and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy or material misrepresentation.

4. I understand that "convicted" or "conviction" is defined by the Florida Statutes to mean a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, non-jury trial, or entry of a plea of guilt or nolo contendere.

5. I understand that "affiliate" is defined by the Florida Statutes to mean (1) a predecessor or successor of a person or a corporation convicted of a public entity crime, or (2) an entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime, or (3) those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate, or (4) a person or corporation who knowingly entered into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months.

6. Neither the Offeror or contractor, nor any officer, director, executive, partner, shareholder, employee, member or agent who is active in the management of the Offeror or contractor, nor any affiliate of the Offeror or contractor has been convicted of a public entity crime subsequent to July 1, 1989. (Draw a line through paragraph 6 if paragraph 7 below applies.)

7. There has been a conviction of a public entity crime by the Offeror or contractor, or an officer, director, executive, partner, shareholder, employee, member or agent of the Offeror or contractor who is active in the management of the Offeror or contractor or an affiliate of the Offeror or contractor. A determination has been made pursuant to Section 287.133(3) by order of the Division of Administrative Hearings that it is not in the public interest for the name of the convicted person or affiliate to appear on the convicted vendor list. The name of the convicted person or affiliate is ____________________________ . A copy of the order of the Division of Administrative Hearings is attached to this statement. (Draw a line through paragraph 7 if paragraph 6 above applies.)

Name of Business

By: ____________________________

Printed Name: ____________________________

Title: ____________________________

STATE OF ____________________________

COUNTY OF ____________________________

Sworn to (or affirmed) and subscribed before me this __________ day of ____________________, 20__ by ____________________________ , as ____________________________ of ____________________________ and who:

[Notary: Please select one]

☐ is personally known to me; or

☐ has produced ____________________________ as identification.

Notary Public, State of ____________________________

Printed, typed or stamped name, commission and expiration:

This document must be completed and returned with your Submittal.

ITB 19-35 CITYWIDE PAVING PROGRAM
FORM 7.6 - ANTI-COLLUSION FORM

ANTI-COLLUSION STATEMENT BID FORM:

By signing this form, the Proposer agrees that this Bid is made without any other understanding, agreement, or connection with any person, corporation, or firm submitting a bid for the same purpose and that the bid is in all respects fair and without collusion or fraud.

SIGN in ink in the space provided below. Unsigned Bids will be considered incomplete, and will be disqualified, and rejected.


NAME OF FIRM: __________________________________________

SIGNED BY: __________________________________________
(MUST BE SIGNED BY A COMPANY OFFICER OR AUTHORIZED AGENT)

PRINTED SIGNATURE: __________________________________

TITLE: ________________________________________________

ADDRESS: ____________________________________________

CITY: STATE: ZIP CODE: _____________________________

TELEPHONE: FAX: ________________________________

COMPLETION TIME: __________________________________

F.E.I.N. NUMBER: __________________________________

NO Bid may be withdrawn for a period of ninety (90) days subsequent to the submittal of the Bids, without the consent of the City of Port Orange.

NO BID (REASON): ____________________________________

This document must be completed and returned with your Submittal
FORM 7.7 – STATEMENT OF VENDOR’S QUALIFICATIONS

The undersigned warrants that he or she is duly authorized to complete this document, and hereby affirms that the information contained in Form 7.7 is complete, true, and correct to the best of their knowledge and belief. If necessary, questions may be answered on separate paper and attached, with any additional information that may be pertinent.

A. Name of Vendor.
B. Permanent main office address.
C. Date organized.
D. If a corporation, where incorporated.
E. How many years have you been engaged in the contracting business under your present firm or trade name?
F. Contracts on hand: (Schedule these, showing amount of each contract and the appropriate anticipated dates of completion.)
G. General character of work performed by your company.
H. Have you ever failed to complete any work awarded to you? If so, where and why?
I. Have you ever defaulted on a contract? If so, where and why?
J. List the more important projects recently completed by your company, stating the approximate cost for each and the month and year completed.
K. List your major equipment currently owned or leased.
L. Experience in work similar to this type of project.
M. Background and experience of the principal members of your organization, including the officers.
N. Credit currently available: $ __________________________
O. Give bank reference: __________________________

P. Will you, upon request, fill out a detailed financial statement and furnish any other information that may be required by the Owner?

Q. The undersigned hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the Owner in verification of the recitals comprising this Statement of Vendor’s Qualifications.

Name of Business
By: __________________________
Printed Name: __________________________
Title: __________________________

STATE OF __________________________
COUNTY OF __________________________

Sworn to (or affirmed) and subscribed before me this _______ day of ______________, 20____, by __________________________, as __________________________ and who:

[Notary: Please select one]
☐ is personally known to me; or
☐ has produced __________________________ as identification.

This document must be completed and returned with your Submittal

Notary Public, State of __________________________
Printed, typed or stamped name, commission and expiration:

ITB 19-35 CITYWIDE PAVING PROGRAM
FORM 7.8 – PROFESSIONAL REFERENCES FOR PREVIOUS EXPERIENCE

The Vendor proposes that he/she is qualified to perform the referenced work and has successfully done so on recent projects similar in nature and size. The City reserves the right to check references and confirm information provided herein.

Please provide three (3) current and correct references from clients for similar services.  
(Do not include the City of Port Orange)

<table>
<thead>
<tr>
<th></th>
<th>Company Name:</th>
<th>Contact Person:</th>
<th>City, State:</th>
<th>Telephone Number:</th>
<th>Email Address:</th>
<th>Description of goods or Services provided:</th>
<th>Contract Amount:</th>
<th>Start/End Date of Contract:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

This document must be completed and returned with your Submittal.
LISTING OF PREVIOUS EXPERIENCE

Commercial Client List

The bidder proposes that he/she is qualified to perform the referenced work and has successfully done so on recent projects similar in nature and size. A minimum of three (3) projects must be listed below. The Owner reserves the right to check references and confirm information provided herein.

List all clients to whom you currently provide or have in the past provided **Paving Services** equal or similar to those required under the City's contract and as outlined in this bid package. A minimum of three (3) projects shall be listed below in order to bid on this contract. The Owner reserves the right to check references and confirm information provided herein.

<table>
<thead>
<tr>
<th></th>
<th>Contact Name</th>
<th>Phone</th>
<th>Current Client? Y or N</th>
<th>Number of years service provided</th>
<th>Description of service</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
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</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*This document must be completed and returned with your Submittal.*
FORM 7.9 – LISTING OF SUBCONTRACTORS

The Vendor proposes that the following subcontractors are qualified to perform the referenced work and have successfully done so on recent projects similar in nature and size. All subcontractors whose work product accounts for 5% or more of the total contract value shall be listed. Upon approval of subcontractors listed, the successful Vendor shall not substitute subcontractors without approval from Public Works Management. Vendor shall attach additional sheets as necessary.

Subcontractor No. 1
Name: ____________________________
Description of Work: ____________________________
Percent of Contract Price: ____________________________
Previous Experience Together: Yes/No ____________________________

Subcontractor No. 2
Name: ____________________________
Description of Work: ____________________________
Percent of Contract Price: ____________________________
Previous Experience Together: Yes/No ____________________________

Subcontractor No. 3
Name: ____________________________
Description of Work: ____________________________
Percent of Contract Price: ____________________________
Previous Experience Together: Yes/No ____________________________

Subcontractor No. 4
Name: ____________________________
Description of Work: ____________________________
Percent of Contract Price: ____________________________
Previous Experience Together: Yes/No ____________________________

Subcontractor No. 5
Name: ____________________________
Description of Work: ____________________________
Percent of Contract Price: ____________________________
Previous Experience Together: Yes/No ____________________________

This document must be completed and returned with your Submittal
FORM 7.10 – LOCAL BUSINESS AFFIDAVIT OF ELIGIBILITY

City of Port Orange

This declaration is executed under penalty of perjury of the laws to the United States and State of Florida

THIS AFFIDAVIT IS SUBMITTED IN REFERENCE TO THE FOLLOWING SOLICITATION:
RFSQ/RFP/ITN/BID/CONTRACT/PROJECT # (as applicable): ________________

BUSINESS NAME: ________________

CONTACT PERSON/TITLE: ________________

MAILING ADDRESS: ________________

CITY-STATE-ZIP: ________________

Length of Time at Address Provided: ________________

Physical Presence of Business: □ Headquarters, □ Manufacturing Facility, or □ Locally Owned Franchise

And within Legal Boundaries: □ The City of Port Orange □ Volusia County □ The State of Florida

FEIN (Federal Employer Identification Number): ________________

BUSINESS STRUCTURE: □ Corporation □ LLC □ Partnership □ Sole Proprietorship

□ Other (Specify): ________________

PHONE NUMBER: ________________ FAX: ________________

EMAIL: ________________

ATTESTATION – I understand that:

• In accordance with City Of Port Orange City Code 2-275, local businesses shall have five (5) business days from bid/proposal opening to submit a best and final bid for evaluation. To qualify: A Port Orange business initial bid must be within (8%) of the lowest and best responsible bid from a non-Port Orange business; A Volusia County business initial bid must be within (5%) of the lowest and best responsible bid from a non-Volusia County business; A State of Florida business initial bid must be within (3%) of the lowest and best responsible bid from a non-State of Florida business.

• A local business must have its headquarters, manufacturing facility, or locally owned franchise located within the legal boundaries of the City of Port Orange, Volusia County, or the State of Florida, as indicated herein, for at least twelve (12) months prior to the bid or proposal opening date and a valid business license, issued by the corresponding government agency. Post office boxes are not verifiable and shall not be used for the purpose of establishing said physical address. Bidders shall attach to this affidavit of eligibility with a bid or proposal, a copy of a valid business tax receipt or such other documentation, to the city’s satisfaction, demonstrating the physical business presence of the firm within corresponding local limits.

• The preference does not apply to goods or services exempted by statute or prohibited by Federal law, State law, or other funding source restrictions.

• The preference established in this policy does not prohibit the right of the City, or other authorized purchasing authority, to compare quality or fitness for use of supplies, materials, equipment and services proposed for purchase and compare qualifications, character, responsibility and fitness of all persons, firms or corporations submitting bids or proposals.

• The information contained herein may be subject to verification.

• A vendor who misrepresents the local preference status of its firm in a proposal or bid submitted to the City of Port Orange will lose the privilege to claim local preference status, and shall lose eligibility to claim local preference for a period of one (1) year. The City Manager may also recommend that the firm be referred for debarment.

**Please attach a valid business tax receipt, or other such documentation**

BEFORE ME; the undersigned authority, in and for the State of Florida and the City of Port Orange personally appeared ___________________________ who, after being sworn according to law, stated that he or she was authorized to represent ___________________________ and to execute this affidavit on behalf of the said Business Entity and attests, under penalty of perjury, to the above.

SWORN AND SUBSCRIBED BEFORE ME

______________________________

SIGNATURE OF NOTARY PUBLIC

THIS ________DAY OF ________, 20________

My Commission Expires: __________________________

______________________________

SIGNATURE OF AFFIANT DATE

______________________________

PRINTED NAME OF AFFIANT/TITLE

______________________________

COMPANY

This document must be completed and returned with your Submittal

ITB 10-35 CITYWIDE PAVING PROGRAM  Page 122 of 140
<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Unit of Measure</th>
<th>Estimated Quantity</th>
<th>Unit Price</th>
<th>Extended Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 1</td>
<td>Asphaltic Concrete</td>
<td>TN</td>
<td>50</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>A.001 Type SP 9.5 Asphaltic Concrete</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Price per ton, FOB Plant</td>
<td>TN</td>
<td>3000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>3</td>
<td>Price per ton, In Place Less than 200 Tons, delivered within 24 hours</td>
<td>TN</td>
<td>500</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>4</td>
<td>Price per ton, In Place More than 200 Tons</td>
<td>TN</td>
<td>3000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>5</td>
<td>Price per ton, In Place More than 200 Tons, delivered within 24 hours</td>
<td>TN</td>
<td>500</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>A.002 Type SP 12.5 Asphaltic Concrete</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Price per ton, FOB Plant</td>
<td>TN</td>
<td>10</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>7</td>
<td>Price per ton, In Place Less than 200 Tons</td>
<td>TN</td>
<td>1000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>8</td>
<td>Price per ton, In Place Less than 200 Tons, delivered within 24 hours</td>
<td>TN</td>
<td>30</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>9</td>
<td>Price per ton, In Place More than 200 Tons</td>
<td>TN</td>
<td>1000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>10</td>
<td>Price per ton, In Place More than 200 Tons, delivered within 24 hours</td>
<td>TN</td>
<td>30</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>B 1</td>
<td>Milling of existing surface (Average Thickness at 1.5&quot;)</td>
<td>SY</td>
<td>33,000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>2</td>
<td>Price per Sq. Yard- Less than 2000 Sq. Yards</td>
<td>SY</td>
<td>33,000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>C 1</td>
<td>Price per Linear Foot - Paved, temporary Traffic Stripe (all widths)</td>
<td>LF</td>
<td>1</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>D 1</td>
<td>Price per Sq. Yard (6&quot; Maximum) To include excavation and all work required</td>
<td>SY</td>
<td>10,000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>for placement of Asphalt Base Course, including existing material removal</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>and disposal otherwise specified</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E 1</td>
<td>Price per Ton Delivered to Job Site</td>
<td>TN</td>
<td>1000</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>2</td>
<td>Price per Ton Picked up from Contractors Yard</td>
<td>TN</td>
<td>1000</td>
<td>$</td>
<td>$</td>
</tr>
</tbody>
</table>

This document must be completed and returned with your Submittal
BID BOND

Bond No.:

KNOW ALL MEN BY THESE PRESENTS that ______________________, as Contractor, duly authorized to conduct business in the State of Florida, whose principal place of business is located at ______________________, Tel.: _______________ (hereinafter called "PRINCIPAL"), and ______________________, as SURETY, duly authorized to conduct business in the State of Florida, whose principal place of business is located at ______________________, Tel.: _______________ (hereinafter called "SURETY"), are held and firmly bound unto the City of Port Orange, Florida, as CITY, a Florida municipal corporation, whose address is City of Port Orange, 1000 City Center Circle, Port Orange, Florida 32129, Tel.: (386) 506-5501, (hereinafter called "OBLIGEE" or "CITY"), in the penal sum of ________________________ dollars and (____) /100 ($________), lawful money of the United States, for the payment of which sum shall and truly be made, whereof PRINCIPAL and SURETY bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that, whereas the Principal has submitted the accompanying bid, dated ______________________, 20____, for:

Project Name / Bid No.:

Project Address:

Legal Description:

Description of Work:

NOW, THEREFORE,

A. If the principal shall not withdraw said bid within one hundred twenty (120) days after date of opening of the same, and shall within ten (10) days after the prescribed forms are presented to it for signature, enter into a written contract with the City in accordance with the bid as accepted, and give bonds with good and sufficient surety or sureties, as may be required, for the faithful performance and proper fulfillment of such contract, then the above obligations shall be void and of no effect, otherwise to remain in full force and virtue.

B. In the event of the withdrawal of said bid within the period specified, or the failure to enter into such contract and give such bonds within the time specified, if the principal shall pay the City the difference between the amount specified in said bid and the amount for which the City may procure the required work and supplies, if the latter amount be in excess of the former, then the above obligations shall be void and of no effect, otherwise to remain in full force and virtue.
IN WITNESS WHEREOF, the above parties have executed this instrument under their several seals, this ____ day of __________, A.D. 20__, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Note: if the firm is a sole ownership or partnership including limited liability company, two (2) witnesses are required to attest the signature. If the firm is a corporation, then the corporate secretary shall attest and affix the corporate seal (Attach power of attorney to original bid bond and financial statement of Surety Company).

PRINCIPAL:

Signature

Corporate Officer & Title

ATTEST:

Signature

Corporate Secretary (Affix Corporate Seal)

WITNESSESS:


ATTEST:

Signature

Corporate Secretary (Affix Corporate Seal)

SURETY:

Attorney-in-Fact (signature)

Name & Title

Name of Local Resident Agent

City, State, Zip

Telephone: __________ NAIC No. : __________

STATE OF ____________________________

COUNTY OF ____________________________

Before me this day personally appeared ____________________________, (affiant), who, being duly sworn, deposes and says that he/she is the Attorney-in-Fact for the ____________________________ (corporate surety) and that this person has been authorized by ____________________________ (corporate surety) to execute the foregoing bond on behalf of the Contractor named therein in favor of the City of Port Orange, Florida.

______________________________
Signature of Affiant

Sworn to / Affirmed and subscribed before me this ____ day of ___________, 20__, by ____________________________, who is personally known to me or who produced ____________________________, as identification.

______________________________
NOTARY PUBLIC – STATE OF
Type or print name: ____________________________
Commission No.: ____________________________
Commission Expires: ____________________________
(Seal)

END OF BID BOND

This document must be completed and returned with your Submittal
PERFORMANCE & PAYMENT BOND

RETURNRecorded DOcument TO:
City Clerk
1000 City Center Circle
Port Orange, Florida 32129-4144

FRoNT PaGE FOR BoND REQUIREd BY SECTION 255.05, F.S.
PAYMENT AND PERFORMANCE BoND
(Public Works)
Notice and Time Limitations Must Be In accordance
With Section 255.05(2), (8) and (10), Florida Statutes

BoND NO. __________________________

PRINCIPAL:
Developer or Contractor: __________________________
Principal Business Address: __________________________
Contact Person: __________________________
Phone Number: __________________________

SURETY:
Address: __________________________
Contact Person: __________________________
Phone Number: __________________________

OWNER:
City of Port Orange, Florida, a chartered municipal corporation
1000 City Center Circle
Port Orange, Florida 32129-4144
Contact Person: City Manager
Phone Number: (386) 566-5501

Amount $ __________________________
City Case/Project No. __________________________

Description of Work: __________________________
Project Location: Port Orange, Volusia County, Florida
Legal Description: __________________________

Front Page

All other pages are subsequent to this page regardless of any numbers that may be printed thereon.
COMBINATION PAYMENT AND PERFORMANCE BOND
FOR
PUBLIC CONSTRUCTION
per Section 255.05, Florida Statutes
Guaranty for Construction of Public Improvements

BY THIS BOND, we, __________________________________________, a corporation, as Surety, are bound to CITY OF ORANGE, FLORIDA, a Florida municipal corporation, herein called "Owner" or sometimes referred to as "City," in the sum of ___________________ DOLLARS ($_________________), for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the terms of the certain ___________________ having an effective date of ___________________, hereinafter referred to as the "Contract," being made a part of this bond by reference, at the times and in the manner prescribed in the Contract; and

2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the Contract (the "Work") and

3. Pays Owner all losses, damages, delay damages (including contractually authorized liquidated damages), expenses, costs, and attorney’s fees, including appellate proceedings, that Owner sustains because of a breach or material breach by Principal under the Contract documents; and

4. Performs the guarantee of all work and materials furnished under the Contract for the time specified in the Contract, then this bond is void; otherwise it remains in full force.

Notice of Nonpayment and Time Limitations

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Sections 255.02(2), (8) and (10), Florida Statutes.

Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes does not affect Surety’s obligation under this bond.
IN WITNESS WHEREOF, this performance and payment bond is executed in duplicate originals, each of which shall be deemed an original, this ___ day of ____________, 20__.

Attest: ____________________________________
(Name of Principal)

____________________________
(As to Corporate Principal) Secretary
By: ____________________________
Name/Title: ______________________

____________________________
(Witness to Principal)
By: ____________________________
Name: __________________________

____________________________
(Surety)
By: ____________________________
Name: __________________________

____________________________
(Witness to Surety)
By: ____________________________
Name: __________________________

____________________________
(Corporate Seal)

____________________________
(Attorney-in-Fact)
By: ____________________________
Name: __________________________

(Corporate Seal)

NOTE: Date of BOND must not be prior to date of Contract. If Developer/Principal is Partnership, all partners should execute BOND. All BOND's signed by an agent must be accompanied by a certified copy of the authority to act.

IMPORTANT: Surety companies executing BOND must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Florida.
This Standard Contract for Services ("Contract") is entered into this ___ day of ____________, 2016, by and between the City of Port Orange, a Florida municipal corporation, whose principal address is 1000 City Center Circle, Port Orange, Florida 32129 (the "City"), and ________________________ ("Contractor"), a corporation whose principal address is ________________________. The City and Contractor are collectively referred to herein as the "Parties."

1. Provision of Services
   (a) The Contractor hereby agrees to provide the following equipment, materials, labor and other such related services to the City of Port Orange:
      (i) __________________________________
      (ii) __________________________________
   (b) The time, manner and place for performance of such services shall be:
      Term: This Contract shall become effective on the last date the Contract is signed by the Parties. Work shall be substantially completed within ___ calendar days from issuance of a Notice to Proceed and final completion ___ days thereafter (the "Term").
      Manner and Place: The work shall be performed as outlined in Exhibit "__" in accordance with Standard Construction Details as required on all City owned facilities and properties (i.e. rights-of-way) and in a manner as required by all current federal, state, county, fire, building and land development codes, laws, ordinances and regulations, and with applicable permits and licenses per the City Code of Ordinances. Contractor shall not deliver goods or services without a written Purchase Order or Notice to Proceed(s), signed by an authorized agent of the City of Port Orange.
      Time and Essence: Contractor acknowledges that time is of the essence for this Contract.

2. Authorization for Services: This Contract standing alone does not authorize the purchase of any work or services or require the City to place any orders for work or service. Authorization for performance of services by the Contractor under this Contract shall be in the form of a written Notice to Proceed issued and executed by the City. The City reserves the right to contract with other parties for work and services contemplated by this Contract, as determined in the City's sole and absolute discretion.

2. Liquidated Damages: Contractor shall pay $_________ for each day that expires after the date the Work is required to be Substantially Completed until the Contractor achieves Substantial Completion with the work. Contractor and City agree and recognize that the liquidated damages set forth herein shall not be treated as a penalty and are just damages that are proportionate to any damages that might reasonably be expected to follow from a delay to Substantial Completion.
2. **City Obligations.** In return for the services identified above, the City agrees to compensate the Contractor at the prices set forth in Exhibit "__" attached hereto, subject to a limit up to but not to exceed $____ for the term of this Contract. The City's obligation to pay Contractor under this Contract is limited to the budgeted amount for the fiscal year approved by the Port Orange City Council for the then current fiscal year. All payments shall be governed by the Local Government Prompt Payment Act as set forth in Sections 218.70 through 218.79, Florida Statutes, as amended.

3. **Contract Documents.** The following forms are attached as Exhibit "__" and must be completed, signed, witnessed and notarized as indicated, and returned to the City prior to the commencement of any services by Contractor under this Contract:
   a. Front Page for Bond (F.S. § 255.05)
   b. Combination Payment and Performance Bond (F.S. § 255.05)

4. **Liens.** Contractor acknowledges that Contractor shall not be entitled to lien the City or other public property.

5. **Contract Administration.** The Contractor shall perform contract administration of this Contract. For notice provisions, see the paragraph below entitled "Notice."

6. **Termination for Convenience of the City.**
   
   (a) The parties agree that the City may terminate this Contract, or any work or delivery required hereunder, from time to time, in whole or part, whenever the City Manager of Port Orange shall determine that such termination is in the best interest of the City.
   
   (b) Termination, in whole or in part, shall be effected by delivery of a Notice of Termination signed by the City Manager or his designee, mailed or delivered to the Contractor, and specifically setting forth the effective date of termination.
   
   (c) Upon receipt of such Notice, the Contractor shall:
      (i) cease any further deliveries or work due under this Contract, on the date, and to the extent, which may be specified in the Notice;
      (ii) place no further orders with any subcontractors except as may be necessary to perform that portion of this Contract not subject to the Notice;
      (iii) terminate all subcontracts except those made with respect to contract performance not subject to the Notice;
      (iv) settle all outstanding liabilities and claims which may arise out of such termination, with the ratification of the Finance Director of Port Orange; and
      (v) use best efforts to mitigate any damages which may be sustained by the Contractor as a consequence of termination under this clause.
   
   (d) After complying with the provisions of subparagraph (c), above, the Contractor shall submit a termination claim, in no event later than six (6) months after the effective date of termination, unless one or more extensions of three (3) months each are granted by the Finance Director.
   
   (e) The Finance Director, with the approval of the City Manager, shall pay from the using department's budget, reasonable costs of termination, including a reasonable amount for profit on supplies or services delivered or work completed. In no event shall this amount be greater than the original contract price, reduced by any payments made prior to Notice of Termination, and further reduced by the price of the supplies not delivered or the services not provided. This Contract shall be amended accordingly, and the Contractor shall be paid the agreed amount.
(f) In the event that the parties cannot agree on the whole amount to be paid to the Contractor by reason of termination under this clause, the Finance Director shall pay the Contractor the amounts determined as follows, without duplicating any amounts which may have already been paid under the preceding paragraph of this clause:

(i) With respect to all Contract performance prior to the effective date of Notice of Termination, the total of:

1. the cost of work performed or supplies delivered;
2. the cost of settling and paying any reasonable claims as provided in paragraph (c) (iv), above;
3. a sum as profit on (a) determined by the Finance Director to be fair and reasonable.

(ii) The total sum to be paid under (i) above shall not exceed the contract price, as further reduced by the contract price of work or supplies not terminated.

(g) In the event that the Contractor is not satisfied with any payments which the Finance Director shall determine to be due under this clause, the Contractor may appeal any claim to the City Council in accordance with Paragraph 20 of this contract concerning disputes.

7. **Termination for Convenience for Subcontractors.** In accordance with the termination for the convenience of the City provision of this contract, the Contractor shall include similar provisions in any subcontract, and shall specifically include a requirement that subcontractors make all reasonable efforts to mitigate damages which may be suffered. Failure to include such provisions shall bar the Contractor from any recovery from the City whatsoever of loss or damage sustained by a subcontractor as a consequence of termination for convenience.

8. **Termination for Default.** Either party may terminate this Contract, without further obligation, for the default of the other party or its agents or employees with respect to any agreement or provision contained herein.

9. **Examination of Records.**

   (a) The Contractor agrees that the City, or any duly authorized representative, shall, until the expiration of five (5) years after final payment hereunder, have access to and the right to examine and copy any pertinent books, documents, papers and records of the Contractor involved in transactions related to this Contract.

   (b) The Contractor further agrees to include in any subcontract for more than $10,000 entered into as a result of this Contract, a provision to the effect that the subcontractor agrees that the City or any duly authorized representative shall, until the expiration of five (5) years after final payment under the subcontract, have access to and the right to examine and copy any pertinent books, documents, papers and records of such subcontractor involved in transactions related to such subcontract, or this Contract. The form subcontract as used herein shall exclude purchase orders for public utility services at rates established for uniform applicability to the general public.

   (c) The period of access provided in subparagraphs (a) and (b) above for records, books, documents and papers which may relate to any arbitration, litigation, or the settlement of claims arising out of the performance of this contract or any subcontract shall continue until any appeals, arbitration, litigation or claims shall have been finally disposed of.

10. **Public Records Compliance.** Contractor shall comply with public records laws as set forth in Chapter 119, Florida Statutes, and shall specifically:

   (a) Keep and maintain public records that ordinarily and necessarily would be required by the City in order to perform the service.
(c) Provide the public with access to public records on the same terms and conditions that the City would
provide the records and at a cost that does not exceed the cost provided in Section 119, Florida Statutes, or as
otherwise provided by law.

(c) Ensure that public records that are exempt or confidential and exempt from public records disclosure
requirements are not disclosed except as authorized by law for the duration of the Contract term.

(d) Upon completion of the Contract, Contractor shall transfer to the City, at no cost, all public records
in possession of the Contractor and destroy any duplicate public records that are exempt or confidential and exempt
from public records disclosure requirements. All records stored electronically must be provided to the City in a format
that is compatible with the information technology systems of the City.

If Contractor does not comply with a public records request, the City shall enforce the contract provisions in
accordance with the contract.

CONTRACTOR QUESTIONS RELATING TO CONTRACTOR'S DUTIES TO PROVIDE PUBLIC
RECORDS RELATING TO THIS CONTRACT MUST BE FORWARD TO THE OFFICE OF THE
CITY CLERK, CITY HALL, 1000 CITY CENTER CIRCLE, PORT ORANGE, FLORIDA 32129
TELEPHONE: (386) 566-5563 E-MAIL: CITYCLERK@PORT-ORANGE.ORG

11. Termination for Non-Appropriation of Funds

(a) If funds are not appropriated for any succeeding fiscal years subsequent to the one in which this
contract is entered into, for the purpose of this Contract, then the City may terminate this Contract upon thirty (30)
days prior written notice to the Contractor. Should termination be accomplished in accordance with this Section, the
City shall be liable only for payments due through the date of termination.

(b) The City agrees that should it terminate in accordance with this Section, it shall not obtain services
which are substantially equal to or similar to those for which this contract was entered into. This provision shall
survive any termination of the Contract.

12. Insurance. Contractor shall maintain insurance during the lifetime of this Contract. Contractor shall provide to
the City a certificate of insurance identifying the City of Port Orange as an additional insured. For workers' compensation
coverage, the bidder's insurance certificate shall include the insurer's waiver of subrogation in lieu of
naming the City as an additional insured for workers' compensation.

Policies other than Workers' Compensation shall be issued by insurers licensed and/or duly authorized under
Florida Law to do business in the State of Florida and all insurance companies are required to have a minimum rating
of "A" in the "Best Key Rating Guide" published by A.M. Best & Company, Inc. Policies for Workers' Compensation
may be issued by companies authorized as a group self-insurer by F.S. 440.572. Contractor shall not commence
work under this Agreement until the City has received a certificate or certificates of insurance and endorsement
evidencing the required insurances. Contractor shall provide the City written notice of cancellation, nonrenewal or any
other changes in coverage no later than ten (10) days prior to the effective date of the change.

The City reserves the right to increase insurance coverage as determined for higher risk contracts and shall
reimburse the Contractor for the reasonable additional costs of increased coverage.
<table>
<thead>
<tr>
<th>Insurance</th>
<th>Standards</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers’ Compensation</td>
<td>Limits: Coverage A - Statutory</td>
<td>If the contract requires work on or about navigable waters, require Longshoreman’s and Harbor Workers’ Coverage. If vessels involved, require Jones Act coverage with limits of $500,000.</td>
</tr>
<tr>
<td></td>
<td>Coverage B - $100,000</td>
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<tr>
<td></td>
<td>All States (Broad Form)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Voluntary Compensation</td>
<td></td>
</tr>
<tr>
<td>Comprehensive General Liability (Including Completed Operations and Contractual Liability)</td>
<td>Limits: Combined Single Limit Bodily Injury and Property damage $500,000 occurrence $1,000,000 Aggregate</td>
<td>When the Contract work on or under Railroad right of way or properties, the Contractor shall take out and maintain during the life of the Contract, Railroad protective liability and property damage insurance in amounts as requested by the Railroad.</td>
</tr>
<tr>
<td>Comprehensive Business, Automobile Liability to include all automobiles.</td>
<td>Limits: Auto Liability Body injury: $100,000 each person $300,000 each occurrence. Property Damage Liability $100,000 each occurrence. Non-Owned, Hired Car</td>
<td>Or $500,000 Combined Single Limit for Bodily Injury and Property Damage</td>
</tr>
<tr>
<td></td>
<td>Additional Coverage:</td>
<td></td>
</tr>
<tr>
<td>Property Insurance Builders Risk</td>
<td>Limits: Buildings - Completed value of contract</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Additional Coverage:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>“All Risk” coverage on latest ISO form or its equivalent. Permission granted to occupy. Owner named as Inured AIMA</td>
<td>If the Contract requires handling or installation of Owner’s equipment, coverage should be furnished on “All Risk” form, including transit and Owner shall be named.</td>
</tr>
<tr>
<td>Professional Liability Limits (Errors &amp; Omissions)</td>
<td>Coverage $1,000,000 minimum</td>
<td></td>
</tr>
</tbody>
</table>

13. **Assignability of Contract** Neither this contract, nor any part hereof, may be assigned by the Contractor to any other party without the express written approval of the City Council.

14. **Modifications or Changes to this Contract**

(a) **Change Orders.** The Department Head, with the concurrence of the City’s signatory as required by the City’s Purchasing Policy, shall without notice to any sureties, have the authority to order changes in this Contract which affect the cost or time of performance. Such changes shall be ordered in writing specifically designated to be a change order. Such changes shall be limited to reasonable changes in the services to be performed or the time of the performance. The City will not be held liable for any changes which have not been properly authorized and approved in accordance with this Contract.

(b) **If any change under this clause causes an increase or decrease in Contractor’s cost of, or time required for the performance of the work hereunder, Contractor shall receive an equitable adjustment in accordance**
with subparagraph (f), which shall include all compensation to the Contractor, or the City, of any kind in connection with such change, including all costs and damages related to or incidental to such change.

(c) Contractor need not perform any work described in any change order unless it has received a certification from the City that there are funds budgeted and appropriated sufficient to cover the cost of such changes.

(d) No claim for changes ordered hereunder shall be considered if made after final payment in accordance with the Contract.

15. **Sovereign Immunity** The City expressly retains all rights, benefits and immunities of sovereign immunity in accordance with Section 768.28, Florida Statutes. Notwithstanding anything set forth in any section of this Contract to the contrary, nothing in this Contract shall be deemed as a waiver of immunity or limits of liability of the City beyond any statutory implied waiver of immunity or limits of liability which may have been adopted by the Florida Legislature or may be adopted by the Florida Legislature and the cap on the amount and liability of the City for damages regardless of the number or nature of claims in tort or equity shall not exceed the dollar amount set by the legislature for tort. Nothing in this Contract shall impair to the benefit of any third party for the purpose of allowing any claim against the City which would otherwise be barred under the Doctrine of Sovereign Immunity or operation of law.

16. **Warranties** Contractor warrants that (1) the supplies to be provided to the City pursuant to this Contract are fit and sufficient for the purpose intended; (2) the supplies are merchantable, of good quality, and free from defects, whether patent or latent, in material or workmanship; and (3) the supplies sold to the City pursuant to this Contract conform to the standards required by this Contract.

Contractor further warrants that Contractor has title to the supplies provided, and that the supplies are free and clear of all liens, encumbrances, and security interests. All warranties made in this Contract, together with service warranties and guarantees, shall run to the City and its successors and assigns.

17. **Additional Warranties** Contractor further expressly warrants that materials and workmanship are warranted from defect for a one-year period. This is a minimum acceptable warranty.

18. **Additional Bond Security** If any surety bond furnished in connection with this Contract becomes unacceptable to the City, Contractor shall promptly furnish such additional security as may be required from time to time to protect the interests of the City and a person supplying labor and materials in the prosecution of work contemplated by this Contract. Contractor expressly acknowledges that if the work to be performed hereunder is a public work, a Payment and Performance Bond, in accordance with Florida Statutes Section 255.05, in a form acceptable to the City, shall be provided and recorded with the Clerk of Volusia County at Contractor’s expense.

19. **Inspection**

(a) All supplies (which term throughout this clause includes without limitation raw materials, components, intermediate assemblies, and their products) shall be subject to inspection and test by the City, to the extent practicable at all times and places including the place of manufacturer, and in any event prior to acceptance.

(b) In the event any supplies or lots of supplies are defective in material or workmanship, or otherwise not in conformity with the requirements of this Contract, the City shall have the right either to reject them (with or without instructions as to their disposition) or to require their correction. Supplies or lots of supplies which have been rejected or required to be corrected shall be removed or, if permitted or required by the Finance Director, corrected in place by and at the expense of Contractor promptly after notice, and shall not thereafter be tendered for acceptance unless the former rejection or requirement of correction is disclosed. If Contractor fails promptly to remove such supplies or lots of supplies which are required to be removed or promptly to replace or correct such supplies or lots of supplies, the City may either (i) by contract or otherwise replace or correct such supplies and charge Contractor the cost for such replacement or correction; or (ii) may terminate this Contract for default as provided in the clause of
this Contract entitled "Termination for Default." Unless Contractor corrects or replaces such supplies within the delivery schedule, the Finance Director may require the delivery of such supplies at a reduction in price, which is equitable under the circumstances. Acceptance or rejection of the supplies shall be made as promptly as practicable after delivery, except as otherwise provided in this Contract. Failure to inspect and accept or reject supplies shall neither relieve Contractor from responsibility for such supplies as are not in accordance with the Contract requirements nor impose liability on the City therefor.

(c) The inspection and test by the City of any supplies or lots thereof does not relieve Contractor from any responsibility regarding defects or other failures to meet the Contract requirements, which may be discovered prior to acceptance. Except as otherwise provided in this Contract, acceptance shall be conclusive except as regards latent defects, fraud, or such gross mistakes as amount to fraud.

20. Liability for Loss or Damage. Contractor shall be liable for any loss of, or damage to, City property caused by the negligence, recklessness, or intended wrongful misconduct of Contractor, his/her agents, servants and employees and shall indemnify and save the City harmless against all actions, proceedings, claims, demands, costs, damages and expenses, including attorney's fees, by reason of any suit or action brought for any actual or alleged injury to or death of any person or damage to property other than City property, resulting from the performance of the Contract by Contractor, his/her agents, servants and employees. Contractor shall submit a full written report to the Finance Director within twenty-four (24) hours following the occurrence of such damage, loss or injury.

21. Non-discrimination. During the performance of this Contract, Contractor agrees as follows:

(a) Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, disability, marital status, age or national origin, except where such is a bona-fide occupational qualification reasonably necessary to the normal operation of Contractor. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause. Contractor agrees and fully supports and complies with the Americans with Disabilities Act of 1990.

(b) Contractor shall state in all solicitations or advertisements for employees placed by or on behalf of Contractor that Contractor is an equal opportunity employer.

(c) Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient compliance with this provision. Contractor shall include the provisions of the foregoing subparagraphs (a), (b), and (c) in every subcontract or purchase order of over $10,000 so that the provisions will be binding upon each subcontractor or vendor.

22. Dispute. The Finance Director, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to Contractor, shall decide disputes with respect to this Contract in the first instance. The decision shall be final and binding unless, within thirty-(30) days from the date of such decision, Contractor mails or otherwise furnishes to the Finance Director a written appeal addressed to the City Manager. The decision by the City Manager shall be final and binding unless, within ten-(10) days from the date of receipt of the decision of the City Manager, appeal is made to the City Council. The decision of the City Council shall be final and binding unless set aside by a court of competent jurisdiction as fraudulent, capricious, arbitrary, or so grossly erroneous as necessary to imply bad faith, or not to be supported by any evidence. Pending a final determination of a properly appealed decision of the Finance Director, Contractor shall proceed diligently with the performance of this Contract in accordance with that decision.

23. Force Majeure. Neither party shall be liable for any delay in performance or failure to perform any obligation hereunder if, and to the extent that, such failure or delay is caused by an event of Force Majeure. Force Majeure
shall mean any act, event or condition that is beyond the party's reasonable control, that materially and adversely affects the party's ability to perform its obligations hereunder, and that is not the result of the party's willful neglect, error, omission or failure to exercise reasonable due diligence.

24. **Controlling Law.** This AGREEMENT CONTAINS IMPORTANT MATTERS AFFECTING LEGAL RIGHTS AND IS ACCEPTED AND ENTERED INTO IN FLORIDA AND ANY QUESTION REGARDING ITS VALIDITY, CONSTRUCTION, ENFORCEMENT, OR PERFORMANCE SHALL BE GOVERNED BY FLORIDA LAW. ANY LEGAL PROCEEDING ARISING FROM OR IN ANY WAY REGARDING THE AGREEMENT SHALL HAVE ITS VENUE LOCATED EXCLUSIVELY IN THE CIRCUIT COURT OF VOLUSIA COUNTY, FLORIDA, AND THE PARTIES HEREBY EXPRESSLY CONSENT AND SUBMIT THEMSELVES TO THE PERSONAL JURISDICTION AND VENUE OF THE COURT.

25. **Additional Provisions.** This Contract includes all additional provisions as may have been outlined in __________________________ and written quotes and purchase orders and any attachments or exhibits to this Contract whether delivered herewith or subsequently approved as a part hereto, such as drawings or technical specifications prepared in the performance of this work.

26. **Integration.** This Contract and the documents incorporated herein by reference shall constitute the whole agreement between the parties. There are no promises, terms, conditions, or obligations other than those contained herein, and this Contract shall supersede all previous communications, representations, or agreements, written or verbal, between the parties hereto.

27. **Notice.** For purposes of this agreement, notices shall be sent as follows:

- **City:** City of Port Orange
  - Attention: City Manager
  - 1000 City Center Circle
  - Port Orange, Florida 32129
  - (386) 506-6301

- **Copy to:** City of Port Orange
  - Attention: __________________________
  - 1000 City Center Circle
  - Port Orange, Florida 32129
  - (386) 506-6301

- **Contractor:** __________________________
  - Attention: __________________________
  - ____________________________________
  - ____________________________________

Any notice or other communication given under the Contract will be in writing and delivered by hand, sent by facsimile (provided acknowledgement of receipt thereof is delivered to the sender), sent by certified, registered mail, or sent by any nationally recognized overnight courier service to the addresses provided herein. The parties may, from time to time and at any time, change their respective addresses and each will have the right to specify as its address any other address by at least 10 days written notice to the other party.

28. **Contract Construction.**

This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument. The delivery by facsimile or e-mail of
an executed copy of this Agreement shall be deemed valid as if an original signature was delivered. No contract shall be formed between Contractor and the City until the City signs this Agreement.

29. Authority to Sign. Each person signing this Agreement warrants that he or she is duly authorized to do so and to bind the respective party to the Agreement.

[Remainder of this page intentionally left blank]
Witnesses: 

CITY OF PORT ORANGE

By: 

Donald O. Burnette, Mayor

Printed Name: ____________________________

Date: ____________________________

Printed Name: ____________________________

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me this __ day of ____________, 2017, by Donald O. Burnette, as Mayor of the City of Port Orange, a Florida municipal corporation, on behalf of the city, and who is personally known to me.

Notary Public, State of Florida
Printed, typed or stamped name, commission and expiration:

Witnesses: 

ATTEST:

By: 

Robin L. Fenwick, CMC, City Clerk

Printed Name: ____________________________

Date: ____________________________

Printed Name: ____________________________

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me this __ day of ____________, 2017, by Robin L. Fenwick, as City Clerk of the City of Port Orange, a Florida municipal corporation, on behalf of the city, and who is personally known to me.

Notary Public, State of Florida
Printed, typed or stamped name, commission and expiration:
End of Solicitation Documents
ADDENDUM NO. #1
January 8, 2020

ITB #19-35 Citywide Paving Program

To All Bidders:

The following changes, clarifications and additions are hereby made part of the bidding and specifications for the above referenced project dated January 31, 2020 and prepared by the City of Port Orange Purchasing Division as fully and completely as if the same were fully set forth therein. It is the sole responsibility of bidder to confirm that all addenda have been received prior to submitting bid and acknowledge such in the bid documents.

A. CLARIFICATIONS:
   1. The City of Port Orange hereby clarifies the specification items found in Section 3 - Scope of Work between Pages 14-79 were added to the Invitation to Bid in error and this addendum removes the items referenced in Question 1. They are as follows: TP-271 Full Depth Reclamation with Portland Cement, TP-282 Full Depth Reclamation with Emulsion, TP-309 Crack Sealing, TP-313a Rejuvenating Fog Seal, TP-314 Asphalt Rejuvenation, TP-316 Asphalt Surface Treatment (Chip Seal), TP-316a Asphaltic Surface Treatment (Rejuvenating Scrub Seal), TP-317 Micro Surfacing, TP-317a High Polymer Micro Surfacing, TP-318a Highly Modified Slurry Seal.

B. CHANGES TO SPECIFICATIONS:
   1. The specification items found in Section 3 – Scope of Work have been removed from the Invitation to Bid by this Addendum. They are as follows: TP-271 Full Depth Reclamation with Portland Cement, TP-282 Full Depth Reclamation with Emulsion, TP-309 Crack Sealing, TP-313a Rejuvenating Fog Seal, TP-314 Asphalt Rejuvenation, TP-316 Asphalt Surface Treatment (Chip Seal), TP-316a Asphaltic Surface Treatment (Rejuvenating Scrub Seal), TP-317 Micro Surfacing, TP-317a High Polymer Micro Surfacing, TP-318a Highly Modified Slurry Seal.

C. QUESTIONS AND ANSWERS:
   Question 1: The bid documents do not provide a "SCHEDULE OF UNIT PRICING ITB 19-35 Citywide Paving Program Pricing Sheet" for the following items: TP-271 Full Depth
Reclamation with Portland Cement, TP-282 Full Depth Reclamation with Emulsion, TP-309 Crack Sealing, TP-313a Rejuvenating Fog Seal, TP-314 Asphalt Rejuvenation, TP-316 Asphalt Surface Treatment (Chip Seal), TP-316a Aspholtic Surface Treatment (Rejuvenating Scrub Seal), TP-317 Micro Surfacing, TP-317a High Polymer Micro Surfacing, TP-318a Highly Modified Slurry Seal. Is it the City of Port Orange’s intention to bid these items listed in the Technical Provision and therefor employ these items as part of this contract? If so, will the City of Port Orange be providing a pricing sheet for these items?

Answer: Please see CLARIFICATIONS & CHANGES TO SPECIFICATIONS for updated answer to Question 1.

Question 2: What is the engineer’s estimate for the above referenced project?
Answer: The City’s estimate for the referenced project is $800,000.00.

Question 3: How much are the liquidated damages?
Answer: $200 per day.

Michael Hall
Buyer

In all other respects, except as specifically stated herein, the subject ITB #19-35 remains unchanged.

END OF ADDENDUM NO. #1
ADDENDUM NO. # 2
January 10, 2020

ITB #19-35 Citywide Paving Program

To All Bidders:

The following changes, clarifications and additions are hereby made part of the bidding and specifications for the above referenced project dated January 31, 2020 and prepared by the City of Port Orange Purchasing Division as fully and completely as if the same were fully set forth therein. It is the sole responsibility of bidder to confirm that all addenda have been received prior to submitting bid and acknowledge such in the bid documents.

A. CLARIFICATIONS:

1. The City of Port Orange hereby clarifies the specification items found in Section 3 - Scope of Work between Pages 14-79 were added to the Invitation to Bid in error and this addendum removes the items referenced in Question 1. They are as follows: TP-271 Full Depth Reclamation with Portland Cement, TP-282 Full Depth Reclamation with Emulsion, TP-309 Crack Sealing, TP-313a Rejuvenating Fog Seal, TP-314 Asphalt Rejuvenation, TP-316 Asphalt Surface Treatment (Chip Seal), TP-316a Asphalitic Surface Treatment (Rejuvenating Scrub Seal), TP-317 Micro Surfacing, TP-317a High Polymer Micro Surfacing, TP-318a Highly Modified Slurry Seal.

B. CHANGES TO SPECIFICATIONS:

1. The specification items found in Section 3 – Scope of Work have been removed from the Invitation to Bid by this Addendum. They are as follows: TP-271 Full Depth Reclamation with Portland Cement, TP-282 Full Depth Reclamation with Emulsion, TP-309 Crack Sealing, TP-313a Rejuvenating Fog Seal, TP-314 Asphalt Rejuvenation, TP-316 Asphalt Surface Treatment (Chip Seal), TP-316a Asphalitic Surface Treatment (Rejuvenating Scrub Seal), TP-317 Micro Surfacing, TP-317a High Polymer Micro Surfacing, TP-318a Highly Modified Slurry Seal.

C. QUESTIONS AND ANSWERS:

Question 1: The bid documents do not provide a "SCHEDULE OF UNIT PRICING ITB 19-35 Citywide Paving Program Pricing Sheet" for the following items: TP-271 Full Depth
Reclamation with Portland Cement, TP-282 Full Depth Reclamation with Emulsion, TP-309 Crack Sealing, TP-313a Rejuvenating Fog Seal, TP-314 Asphalt Rejuvenation, TP-316 Asphalt Surface Treatment (Chip Seal), TP-316a Asphaltic Surface Treatment (Rejuvenating Scrub Seal), TP-317 Micro Surfacing, TP-317a High Polymer Micro Surfacing, TP-318a Highly Modified Slurry Seal. Is it the City of Port Orange’s intention to bid these items listed in the Technical Provision and therefore employ these items as part of this contract? If so, will the City of Port Orange be providing a pricing sheet for these items?

Answer: Please see CLARIFICATIONS & CHANGES TO SPECIFICATIONS for updated answer to Question 1.

Question 2: What is the engineer’s estimate for the above referenced project?
Answer: The City’s estimate for the referenced project is $800,000.00.

Question 3: How much are the liquidated damages?
Answer: $200 per day.

Question 4: What is the length of the contract?
Answer: see section 6

Question 5: Is there additional addendums going to be posted?
Answer: Yes

Michael Hall
Buyer

In all other respects, except as specifically stated herein, the subject ITB #19-35 remains unchanged.

END OF ADDENDUM NO. #2
ADDENDUM NO. #3
January 14, 2020

ITB #19-35 Citywide Paving Program

To All Bidders:

The following changes, clarifications and additions are hereby made part of the bidding and specifications for the above referenced project dated January 31, 2020 and prepared by the City of Port Orange Purchasing Division as fully and completely as if the same were fully set forth therein. It is the sole responsibility of bidder to confirm that all addenda have been received prior to submitting bid and acknowledge such in the bid documents.

A. CLARIFICATIONS:

1. The City of Port Orange hereby clarifies the specification items found in Section 3 - Scope of Work between Pages 14-79 were added to the Invitation to Bid in error and this addendum removes the items referenced in Question 1. They are as follows: TP-271 Full Depth Reclamation with Portland Cement, TP-282 Full Depth Reclamation with Emulsion, TP-309 Crack Sealing, TP-313a Rejuvenating Fog Seal, TP-314 Asphalt Rejuvenation, TP-316 Asphalt Surface Treatment (Chip Seal), TP-316a Asphalitic Surface Treatment (Rejuvenating Scrub Seal), TP-317 Micro Surfacing, TP-317a High Polymer Micro Surfacing, TP-318a Highly Modified Slurry Seal.

B. CHANGES TO SPECIFICATIONS:

1. The specification items found in Section 3 – Scope of Work have been removed from the Invitation to Bid by this Addendum. They are as follows: TP-271 Full Depth Reclamation with Portland Cement, TP-282 Full Depth Reclamation with Emulsion, TP-309 Crack Sealing, TP-313a Rejuvenating Fog Seal, TP-314 Asphalt Rejuvenation, TP-316 Asphalt Surface Treatment (Chip Seal), TP-316a Asphalitic Surface Treatment (Rejuvenating Scrub Seal), TP-317 Micro Surfacing, TP-317a High Polymer Micro Surfacing, TP-318a Highly Modified Slurry Seal.

2. 01/14/2020: Revised pricing sheet to include a breakdown in pricing for striping by width in linear feet, square feet and each for Section C, Striping, with estimated quantities for Items #1-14. “ATTACHMENT 1 SCHEDULE OF UNIT PRICING ITB 19-35 Citywide Paving Program Pricing Sheet REVISED 1.14.20”
C. QUESTIONS AND ANSWERS:

Question 1: The bid documents do not provide a "SCHEDULE OF UNIT PRICING ITB 19-35 Citywide Paving Program Pricing Sheet" for the following items: TP-271 Full Depth Reclamation with Portland Cement, TP-282 Full Depth Reclamation with Emulsion, TP-309 Crack Sealing, TP-313a Rejuvenating Fog Seal, TP-314 Asphalt Rejuvenation, TP-316 Asphalt Surface Treatment (Chip Seal), TP-316a Asphalitic Surface Treatment (Rejuvenating Scrub Seal), TP-317 Micro Surfacing, TP-317a High Polymer Micro Surfacing, TP-318a Highly Modified Slurry Seal. Is it the City of Port Orange’s intention to bid these items listed in the Technical Provision and therefore employ these items as part of this contract? If so, will the City of Port Orange be providing a pricing sheet for these items?

Answer: Please see CLARIFICATIONS & CHANGES TO SPECIFICATIONS for updated answer to Question 1.

Question 2: What is the engineer’s estimate for the above referenced project?

Answer: The City’s estimate for the referenced project is $800,000.00.

Question 3: How much are the liquidated damages?

Answer: $200 per day.

Question 4: What is the length of the contract?

Answer: See Section 6.

Question 5: Will additional addendums be posted?

Answer: Yes.

Question 6: On the Pricing Sheet for the subject project, Section C, Item #1 requests a price per linear foot for ALL WIDTHS of painted traffic striping. Can I assume that this includes 4”, 6”, 8”, 9”, 12” 18” and 24” striping? Do you want any breakdown of pricing at all?

Answer: Please see CHANGES TO SPECIFICATIONS for answer to Question 6.

Michael Hall
Buyer

In all other respects, except as specifically stated herein, the subject ITB #19-35 remains unchanged. END OF ADDENDUM NO. #3
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<td>2. Hammock Oak Circle - Hickory Stick Ct to Hazeltine and East</td>
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<td>6. Cedarwood Ct</td>
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CONTRACT AMOUNT $504,241.01

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<th>Project No. 1B - Hightower Drive - WB</th>
<th>Project No. 1C - Hightower Drive - EB</th>
<th>Project No. 1D - Hightower Drive - Turnout</th>
<th>Project No. 1E - Weston Place - Turnout</th>
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EXHIBIT "C"
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<td>3736</td>
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Note: Project No. 2D - Hammock Oak Circle - East from Hazeline Dr.

Project No. 2E - Hammock Oak Circle - Mid-Block Repair

Concrete Curb - Miami Curb

Total: $267,573.76
### CITY OF DEBARY - 2022 STREET RESURFACING PROJECT - LOCATION AND COST INFORMATION SHEET

| Project No. 3 - Hazeltine Drive From Hammock Oak Circle to Hinsdale Dr |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|
| ITEM # | From Hammock Oak Circle to Hinsdale Dr | Thick (*" | LBS/ Y | Length (FT) | Width (FT) | SQ FT | SQ YDS. | TOTAL (LB) | TOTAL (TN) | EA | COST PER | TOTAL COST |
| B-1 | Milling | 1.5 | 506 | 20 | 10120 | 1124.44 | 1 | $1.90 | $2,136.44 |
| A-7 | Asphalt - SP 12.5 -110 lbs per inch | 1.5 | 165 | 506 | 20 | 10120 | 1124.44 | 185533.33 | 92.77 | $105.00 | $9,740.50 |
| C-14 | Blue RPM | 1 | $5.50 | $5.50 |

### Project No. 3B - Hazeltine Drive - North End From Hinsdale Dr Intersection - 525 FT South

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<th>Width (FT)</th>
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<th>SQ YDS.</th>
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<th>TOTAL (TN)</th>
<th>EA</th>
<th>COST PER</th>
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### Project No. 3C - Hinsdale Drive - Intersection at Hazeltine Drive

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<th>Width (FT)</th>
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<th>SQ YDS.</th>
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### Project No. 4 - Colomba Road From Matanzas Road to DeLeon Road

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### Project 2A - Matanzas Rd - Intersection

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<th>SQ FT</th>
<th>SQ YDS.</th>
<th>TOTAL (LB)</th>
<th>TOTAL (TN)</th>
<th>EA</th>
<th>COST PER</th>
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## CITY OF DEBARY - 2022 STREET RESURFACING PROJECT - LOCATION AND COST INFORMATION SHEET

<table>
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<tr>
<th>ITEM #</th>
<th>Project 5A - From Benson Junction Road to Spring Vista Drive</th>
<th>Project No. 5 - South Shell Road</th>
<th>Project 5B - South Shell Road - North End</th>
<th>Project 5B - South Shell Road - South End</th>
<th>Project 5C - South Shell Road at Benson Junction</th>
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<td>SQ YDS.</td>
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<td>A-7</td>
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<td>C-9</td>
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438.70 TN  
$71,574.27
### Project No. 6 - Cedarwood Court
**From Plantation Club Dr to Cul-De-Sac**

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<th>LBS/SY</th>
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<th>Width (FT)</th>
<th>SQ FT</th>
<th>SQ YDS.</th>
<th>TOTAL (LB)</th>
<th>TOTAL (TN)</th>
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**Total:** $22,021.65

### Project No. 7 - Caddie Court
**From Plantation Club Dr to Cul-De-Sac**

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<th>Operation</th>
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<th>Width (FT)</th>
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<th>SQ YDS.</th>
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<th>TOTAL (TN)</th>
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**Total:** $22,535.06

### Project 8 - Toms Road
**From Mansion Drive to Palm Road**

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<th>SQ FT</th>
<th>SQ YDS.</th>
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<th>TOTAL (TN)</th>
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**Total:** $36,813.00

### Project 9 - City Hall Parking Lot
**Pavement Repair**

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**Total:** $2,741.33
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85.83 TN  $13,982.96
City Council Meeting
City of DeBary
AGENDA ITEM

Subject: Stormwater Design, Engineering and Construction Management and Inspection Services – Neel-Schaffer, Inc.
From: Carmen Rosamonda, City Manager
Meeting Hearing Date March 16, 2022

Attachments:
( ) Ordinance
( ) Resolution
(x ) Supporting Documents/ Contracts
( ) Other

REQUEST

City Manager is requesting City Council approval of Stormwater Design, Engineering and Construction Management and Inspection Services from Neel-Schaffer, Inc. for the James Pond Pump Station, Bill Keller Pump Station Upgrade, and Bill Keller Park Irrigation.

PURPOSE

The purpose is to design, engineer and construct these projects to improve the City’s stormwater system.

CONSIDERATIONS

- City staff has identified 27 stormwater improvement projects throughout the community, which will substantially complete the vast majority of the City’s Stormwater System.

- The City received ARPA funds which has specific guidelines, timing parameters, reporting and auditing requirements. Stormwater projects are an allowable use.

- The City has multiple continuing contracts for general engineering and construction management and inspection services. City staff considered proposals from each on method, timing, and cost.

- Neel-Schaffer has proposed to complete the design and engineer and construction management and engineering inspections for the following projects, 1) New James Pond Pump Station - $96,310.00, 2) Bill Keller Park Pump Station Upgrade - $25,500.00, 3) Bill Keller Park Irrigation - $25,500.00. These projects total $147,310.00.

- James Pond is similar to Woodbound Lake, as it floods on a routine basis. Dependent on the severity of rainy season and hurricanes, the City spends upwards to $100,000 annually for emergency pumping. James Pond Pump Station will automatically regulate the lake level and eliminate the need for pump rentals and labor, providing a significant return on investment over time. This project also incorporates improving flooding issues along East Highbanks Road.
• Bill Keller Pump Station Upgrade involves an antiquated station built over 30 years ago. It current pumps stormwater from Woodbound and Lake and Lake Charles through an existing pipeline to the I-4 drainage system.

• Bill Keller Irrigation project involves moving the park irrigation from using well water to using surface water from Lake Charles. This project is required by the SJRWMD as part of the Woodbound Lake project.

**COST/FUNDING**

All of these projects are in the approved FY 2021-22 budget under Fund 300 - ARPA Capital Projects Fund. The cost for design, engineering and construction management and inspection services for these three projects are $147,310.

**RECOMMENDATION**

It is recommended that the City Council approve the Stormwater Design, Engineering and Construction Management and Inspection Services from Neel-Schaffer, Inc. for the James Pond Pump Station, Bill Keller Pump Station Upgrade, and Bill Keller Park Irrigation totaling $147,310.00

**IMPLEMENTATION**

Immediately upon Approval

**ATTACHMENTS**

Neel-Schaffer, Inc. Proposal
Stormwater Project List
Stormwater Project Map
### Stormwater Projects
#### ARPA Grant Program
##### Engineering

<table>
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March 1, 2022

Mr. Carmen Rosamonda, City Manager
City of DeBary
16 Colomba Road
DeBary, Florida 32713

REFERENCE: ENGINEERING SERVICES PROPOSAL FOR PERMITTING, DESIGN AND CONSTRUCTION ENGINEERING FOR MISCELLANEOUS STORMWATER IMPROVEMENTS – DEBARY, FLORIDA

Dear Mr. Rosamonda:

As requested, Neel-Schaffer, Inc. (NSI) is pleased to provide this fee proposal for permitting, design, and construction engineering services for 3 of the 24 stormwater infrastructure improvement projects package provided. These projects are: Project 7 – James Pond Flood Protection, Project 22 – Bill Keller Park Lake Charles Pump retrofit and Project 23 – Bill Keller Park Surface Water Irrigation Retrofit. The work will be performed on a time and materials – not to exceed basis, and the fee is based on rates established in the CCNA contract between the City of DeBary and NSI. In order to maximize efficiency and minimize project cost, this proposal assumes that all improvements will be performed as a single combined effort designed and bid as a single project over the 3 sites. The fee proposal provides a site-by-site cost breakdown as well as providing totals for each Task as a whole.

The City of DeBary Department of Public Works has compiled a city-wide list of stormwater infrastructure improvements at various sites around the city. An initial list of 27 (later revised to 24) individual sites/projects were compiled. The three sites selected by the City and are included as Attachment A.

Scope of Services

The Scope of Services includes the following Tasks.

Task 1. Project Management and Data Collection
Task 2. Hydraulic Modelling
Task 3. Permitting
Task 4. Design
Task 5. Bid Services and Construction Administration

Not all tasks (e.g., Hydraulic Modelling) will be required for a particular site. In the individual site fee breakdown, no fee for a particular task means that task in not applicable to that site.
Task 1. Project Management and Data Collection

Task 1.1 Project Management and Meetings
NSI will attend a project kickoff meeting for the design project. This meeting will review the project scope, establish lines of communication, confirm the project schedule, and receive any additional data from the City. The Project Manager and Project Engineer will also attend draft and final design review meetings. During these meetings the Engineer will conduct the meeting and maintain meeting summaries with the City’s representatives. Following the meetings, the Engineer will prepare meeting summaries for distribution to the meeting attendees.

NSI will coordinate the work elements of this project with the City as described herein and will attend five meetings: at project initiation, conceptual design submittal and 60%, 90% and 100% submittals.

Task 1.2 Data Collection and Review
NSI will collect and review pertinent information and data related to the project. Data and information may include maps, aerials, topographic data, publicly available LIDAR survey data, geotechnical data as well as City of DeBary, State and federal codes. NSI will visit all sites to become familiar with site conditions as they relate to drainage and layout of proposed improvements. This will also include site visits to collect data, environmental screening, and review of any other design requirements. It is anticipated that there are no wetlands or endangered species at these sites.

Task 1.3 Survey and Easement Acquisition
NSI will engage the services of the licensed surveyor specified in the continuing services contract, Southeastern Survey, Inc. The surveyor’s scope of services includes site boundaries, property line, ROW and topographical surveys as well as sub-surface utilities evaluation (SUE) and easement delineation and acquisitions as needed.

Task 1.4 Geotechnical Investigation
NSI will engage the services of the licensed geotechnical engineer specified in the continuing services contract, G-E-C, Inc. Their estimated level of effort is based upon our experience with similar projects and the fee listed is based on the contracted billing rates. This cost is included as a contingency that may change slightly based on field conditions discovered during the data collection task.

Task 2. Hydraulic Modelling
NSI will provide hydraulic modelling services to support permitting and design efforts, as well as pre- and post-improvement analysis of the 25-year design storm. NSI will delineate the impacted watersheds in order to define the areas impacted by each site improvement. NSI will model the proposed solutions and make adjustments to address the drainage issues particular to each site.

Task 3. Permitting
NSI will provide permitting services for the city to apply for the permits needed to construct the proposed improvements. Depending on the specific site, NSI anticipates permits will be required from SJRWMD, FDEP, FDOT, and City of DeBary. NSI will complete and submit those permit applications and supporting documentation to the permitting authorities. The city will be responsible for payment of any application
fees. NSI will address one round of RAI’s or other comments from the permitting authorities listed.

**Task 4. Design**

**Task 4.1 Preliminary Design**
Using the results of the modelling and other investigations in previous tasks, NSI will develop the preliminary design documents for the project. A technical specification manual will not be provided. All specifications required will be provided on the drawings. The drawings will be packaged as a complete, singular set that includes all 3 sites, along with common cover page and general notes and details. NSI will submit a preliminary Engineer’s Opinion of Probable Construction Cost (EOPCC).

**Task 4.2 Final Design**
Based on the review comments of the preliminary plans, the Engineer will prepare the 60% level construction Plans with full details of all the proposed improvements including cover sheet, pay items, and general notes. NSI will submit the 60% Plans to the CITY for review.

Based on the review comments of the 60% submittal, NSI will prepare the 90% level construction plans, finalizing all the design elements required for bidding. NSI will submit the 90% Plans to the CITY for review.

Based on the review comments of the 90% submittal, NSI will make necessary revisions per the comments and prepare the 100% construction Plans for final submittal. The final drawings will be packaged as a complete, singular set that includes all sites, along with common cover page and general notes and details. If directed by the city, the drawings can specify that the sequence of construction be performed such that the high priority sites are substantially complete prior to proceeding with medium and the then low priority sites. NSI will also update the EOPCC.

**Task 4.3 Quality Assurance/Quality Control (QA/QC)**
NSI will perform an internal QA/QC review at the completion of preliminary, intermediate and final design efforts, prior to submission to the city.

**Task 4.4 Bid Documents**
NSI will incorporate comments and revisions from the City and any permitting authorities into the final design drawings to produce the Bid Documents.

**Task 5. Bid Services and Construction Administration**

**Task 5.1 Bid Services**
NSI will address questions submitted by plan holders during project Bidding. NSI will attend the bid opening and certify the apparent low bidder. NSI will evaluate the bid for compliance with the project requirements and make a recommendation whether to award to the city. NSI will incorporate any addenda and issue signed and sealed Conformed drawings.
Task 5.2 Attend Preconstruction Conference and Monthly Meetings
NSI will attend a preconstruction conference for the construction project. During the conference, the Project Engineer will present the agenda and record meeting minutes. The Project Manager and Project Engineer will also attend monthly project meetings. During these meetings the Engineer will conduct the meeting and maintain meeting minutes with the Contractor, Subcontractors and City’s representatives. Following the meetings, the Engineer will prepare meeting minutes for distribution to the meeting attendees.

Task 5.3 Submittal Review
The Engineer will review Contractor submittals and provide responses and reviews. Activities for this task include maintaining a submittal log/record, reviewing shop drawings, RFIs, providing work directives and comments, and transmitting copies of reviewed RFIs to the City staff and the Contractor. Other services provided include contractor Pay Application review, RFI/RAI processing, review testing, site visit reports, and review of contractor’s testing reports.

Task 5.4 Inspection
The Inspector will conduct 20 hours per week of on-site inspection of the work in progress to determine if the work is proceeding in accordance with the Contract Documents, approved Maintenance of Traffic (MOT) plans, approved submittals, shop drawings and permits. The Inspector and Project Manager will notify the City of any unacceptable work or materials and report immediately, within 24 hours both verbally and in writing, whenever any work or material fails to conform to the Contract Documents, submittals, and shop drawings. The Inspector will maintain daily reports of construction activities and any deficient and nonconforming work and resolutions from Notice to Proceed to the project Final Completion for the days that the Inspector is present.

Task 5.5 General Coordination Activities/Technical Assistance
The Engineer will provide technical assistance to the Contractor and City representatives during project construction to provide clarification and interpretation of the Drawings and Specifications and to resolve technical issues or conflicts which may arise, and will provide general coordination tasks between City representatives, Contractor, Volusia County, FDOT and other parties or entities, as necessary. The Engineer will prepare sketches and drawings to resolve actual field conflicts, if necessary. This will include reviewing pay applications and coordination with City staff as necessary. The Engineer will also provide technical assistance to resolve any unforeseen conditions during construction and will make unscheduled site visits, if necessary. Furthermore, the Engineer will review laboratory, shop, and test reports, as applicable, related to materials and quality of work and will aid in claims negotiation and dispute resolution. Additionally, the Engineer will review and monitor the Contractor’s construction schedule and will advise the city regarding the progress and problems affecting such progress.

Task 5.6 Substantial and Final Completion Inspections
The Engineer will perform one site inspection each at substantial completion and final completion. Each inspection will include a “walk through” of the entire project, formation of a punch list for deficient work and formalization and transmittal of the punch list to the Contractor and City representatives.
Task 5.7 Closeout Documentation Review and Final Submittals
The Engineer will inspect and verify that the contractor has met the requirements of the plans and specifications. Prior to final payment, the Engineer will verify that all testing requirements, if any, have been met and documented. The Engineer will also verify all as-built documentation, warranties and product information has been properly prepared and submitted by the Contractor. All final closeout documentation will be submitted in accordance with contract requirements.

Schedule
Upon receipt of a Notice to Proceed from the City, NSI will complete the work described in the tasks above according to the following schedule. All durations are listed in calendar days, excluding holidays.

1. Kickoff meeting Schedule within 7 days of NTP
2. Preliminary Design Submittal Within 90 days of NTP
3. Prelim Design Review Meeting Within 14 days of (2.)
4. Final Design Submittal Within 45 days of (3.)
5. Bid Documents Within 14 days of (4.)
6. Bid Phase 60 days after Bid Advertisement
7. Construction Phase 150 days after Contractor NTP

City Responsibilities and Activities
It is expected that the city will provide requested data for design in a timely manner, to the extent such data exists. Also, it is expected the city will provide timely comments during design reviews, provide clarifications as needed on behalf of the Engineer of Record, and provide the Project Engineer with any agreements regarding construction activities for this project.

Deliverables
- Kickoff Meeting Summary (PDF)
- Modeling Report for each site (PDF)
- Preliminary Design Drawings (PDF)
- Preliminary EOPCC (PDF)
- Preliminary Review Meeting Summary (PDF)
- Final Design Drawings (PDF)
- 60%, 90% and 100% EOPCC (PDF)
- Final Review Meeting Summary (PDF)
- Permit Applications (PDF/Hard Copies)
- RAI/RAI Responses (PDF)
- Bid Documents (PDF)
- Addenda Response (PDF)
- Bid Evaluation Form (PDF)
- Conformed Documents (PDF/Hard Copies) - Signed and Sealed
- Pre-Construction Meeting Summary (PDF)
- Daily Construction Activity Reports for the days the work site was visited (Electronic Submittal).
Photographs of site visits and inspections (Electronic Submittals).
Engineer approved shop drawings (Hard Copy/PDF).
Certified Pay Request (Hard Copy/PDF).
Monthly Meeting Summary (PDF)
Substantial Completion Punch List (Hard Copy/PDF).
Reviewed Closeout Documentation Comments (Testing, Warranties, Product Information).
Email or CD of documents in PDF format, photographs in JPEG format.

We propose to provide these services for the Hourly – Not to Exceed amount of $147,310.00 based on
the above task and terms and conditions of the CCNA contract between Neel-Schaffer, Inc. and the City
of Debary. The overall breakdown of tasks and expected level of effort are provided in Tables 1 and 2.
Table 3 provides the project fee on a per-site basis by task. Project-wide fees such as project
management and construction administration are distributed across all sites, and a significant reduction
in the number of sites included in this project could, therefore, result in higher fees per site. Fees will
be submitted monthly upon percent completion. Should additional services beyond the scope of this
letter agreement be necessary, additional fees may be required.

We appreciate the opportunity to provide these services to the City of Debary and look forward to
continuing to work with you. If you have any questions, please give me a call.

Sincerely,

NEEL-SCHAEFFER, INC.

Steven R. Cockerham, P.E.
Senior Project Manager

ACCEPTED: CITY OF DEBARY

BY: ______________________________________

PRINT NAME AND TITLE: ______________________________________

DATE: ______________________________________
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<td>Senior Engineer PE</td>
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<td>Engineer Intern/Intern Engineer</td>
<td>Eng. Intern VOIS Analyst</td>
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<td>Task 3: PERMITTING</td>
<td>Task 4: DESIGN</td>
<td>Task 5: BID SERVICES AND CONSTRUCTION ADMINISTRATION</td>
<td>Site Total</td>
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James Pond Flood Protection
James Pond Flood Protection
<table>
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<tr>
<th>Priority</th>
<th>Project #</th>
<th>Page</th>
<th>Address</th>
<th>Description</th>
<th>Bigg. Flood</th>
<th>Septic Issues</th>
<th>Wall Issues</th>
<th>No. Properties Affected</th>
<th>Short Notice Needed</th>
<th>Recommended Solution / Option</th>
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<tr>
<td><strong>NORTHWEST</strong></td>
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<tr>
<td>Medium 1</td>
<td>4</td>
<td>6016 N. Hibiscus Road (North) Closed Storm Drain</td>
<td>Fills deep roadside ditches, improve area drainage (Debbie's Years of flooding)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>4</td>
<td>Yes</td>
<td>Existing ditch conversion to closed system, option to consider additional capacity for sea-level rise effects.</td>
<td></td>
</tr>
<tr>
<td>High 2</td>
<td>5-6</td>
<td>420 Eagle Creek Court</td>
<td></td>
<td>Very close</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>4</td>
<td>Possibly</td>
<td>Extend storm sewer with risers along road front, possible extension to rear yards with new easements.</td>
</tr>
<tr>
<td>Low 3</td>
<td>7</td>
<td>366 Glen Abbey Lane</td>
<td>Groundwater seepage, possible underdrain malfunction, high/ferried water table</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>3</td>
<td>No</td>
<td>Underdrain replacement/new installation.</td>
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<tr>
<td>Low 4</td>
<td>11-6</td>
<td>232 Glen Abbey Lane</td>
<td>Groundwater seepage, possible underdrain malfunction, high/ferried water table</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>Underdrain replacement/new installation.</td>
<td></td>
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<tr>
<td>Low 5</td>
<td>7-8</td>
<td>367 Glen Abbey Lane</td>
<td>Dead-end fill system, high water table during rainy season, flooding around inlet, no erosion</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>No</td>
<td>Connect to nearby underdrain, convert to regular storm sewer, leave as is.</td>
<td></td>
</tr>
<tr>
<td>Medium 6</td>
<td>8-9</td>
<td>302 Yorkshire Place</td>
<td>Dead-end fill system, high water table during rainy season, flooding around inlet, no erosion</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>No</td>
<td>Evaluate drainage through out both cul-de-sacs, extend storm sewer.</td>
<td></td>
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<tr>
<td>High 7</td>
<td>2-10</td>
<td>James Road Pump Station, 333 S. Hibiscus Blvd</td>
<td>Road flooding, hit low lying area, no storm infrastructure near or on property</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>3</td>
<td>No</td>
<td>Permanent pump station, existing force main drywell, extend south towards south, storm sewer connection to Ashville Street system.</td>
<td></td>
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<tr>
<td><strong>SOUTHWEST</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Low 8</td>
<td>11-12</td>
<td>4330 Laffin Lane</td>
<td>Low point, area north of driveway through property to rear</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>Yes</td>
<td>1st - retention swale on rear highpoint to hilltop; 2nd - storm sewer to divert to nearby, gavel w easements.</td>
<td></td>
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<tr>
<td>High 9</td>
<td>13</td>
<td>650 Azalee Drive</td>
<td>Side yard flooding, low lying area - minor &quot;brow&quot;</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>1st - retention swale at road highpoint to hilltop; 2nd - reshape side yard to control runoff w easements.</td>
<td></td>
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<tr>
<td>Low 10</td>
<td>14-15</td>
<td>14905 San Antonio Ct.</td>
<td>Drainage connection to FDOT system disconnected, backs up to wetland and flood plain</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>Storm sewer system to drain to Shell Road.</td>
<td></td>
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<tr>
<td>Low 11</td>
<td>15-16</td>
<td>Alexander-Laudon Trail (Florida 726)</td>
<td>Improve roadside drainage, fill in deep roadside ditches</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>No</td>
<td>No</td>
<td>No. Boardwalk along existing berm (flooding capabilities); Storm sewer trunk line under FL Rte 68.</td>
</tr>
<tr>
<td><strong>SOUTHEAST</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Medium 12</td>
<td>17-18</td>
<td>1125 Lago Vista St., 1125-123 Sunrise Blvd.</td>
<td>Low lying properties, paved roadway with very minor to no swale, no nearby storm sewer</td>
<td>Very close</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>Perhaps roadside swales to drain into dayqua Vista r/c, or storm to nearby retention or land purchase.</td>
<td></td>
</tr>
<tr>
<td>Low 13</td>
<td>19-20</td>
<td>4341 Bass Lake Drive</td>
<td>Drainage not getting to two picks, inlets blocked by vegetation or driveway, low lying</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>4</td>
<td>No</td>
<td>24 Bass Lake - inlet to curve road, 33 Bass Lake - inlet to cross garage drive and roadside swales reshape.</td>
<td></td>
</tr>
<tr>
<td>Low 14</td>
<td>21</td>
<td>22, 24 &amp; 54 St. Matthews Road</td>
<td>Somewhere properties drain through to reach lake, lake level effects.</td>
<td>close</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>Perhaps roadside swales to direct drainage to side lot lines, possibly reshape side yards. <a href="http://www.pumper.com">www.pumper.com</a>.</td>
<td></td>
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<tr>
<td>Low 15</td>
<td>22</td>
<td>33 Matthews Road</td>
<td>Low end of street, drainage accumulates on its way to lake.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>No</td>
<td>Roadside swales to allow for &quot;lawn to lake&quot;, from road highpoint on both sides of Lakewood Dr.</td>
<td></td>
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<tr>
<td>Low 16</td>
<td>23-24</td>
<td>344 DeSoto Drive</td>
<td>Low point of road, drainage flows through to reach private basement to rear of lots</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>3</td>
<td>No</td>
<td>Possible purchase of 344 DeSoto Dr for area retention.</td>
<td></td>
</tr>
<tr>
<td>Low 17</td>
<td>25-26</td>
<td>253 Sunrise Boulevard/255 Fraser Rd. / 257 DeSoto Dr. Dreghig</td>
<td>Water not moving in sideyard ditch, ditch is discharge point for wetland across street</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>Yes</td>
<td>1st - do nothing; 2. formatele ditch connection to wetland behind 250 Surprise w easement; 3. place ditch a acres.</td>
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<td>Low 18</td>
<td>27-28</td>
<td>351-354 Grandy Vista Street</td>
<td>Low lying, minor &quot;brow&quot;, front property corner flooding destroyed driveway</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>4</td>
<td>No</td>
<td>Perhaps roadside swales, inlet to drain to nearby retention or land purchase.</td>
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<tr>
<td>Low 19</td>
<td>29</td>
<td>1174 Corvella Road / 142 Lakewood Drive</td>
<td>Road dries down and remains flooded, &quot;low&quot; area</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>1st - swales from road highpoint to hilltop; 2nd - storm sewer to nearby City privy/Sarpy Rd.</td>
<td></td>
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<tr>
<td>Low 20</td>
<td>30-31</td>
<td>222, 226-228 Agua Vista Street</td>
<td>Low laying properties, road runoff channeling along property frontage, low area home with swamp acres</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>1. improve SW. discharge upstream (222-224 Agua Vista); 2. asphalt curb at y=350; 3. inman. Downstream fix.</td>
<td></td>
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<tr>
<td>High 21</td>
<td>32-33</td>
<td>El Fuller Park - Lake Charles Pump Retirement</td>
<td>Tied to Permitting of Woodbound Lakes Pump Station</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>No</td>
<td>Keep existing pumps, upgrade electrical with automation.</td>
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<tr>
<td>High 22</td>
<td>34</td>
<td>El Fuller Park - surface water irrigation conversion</td>
<td>Tied to Permitting of Woodbound Lakes Pump Station</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>Surface water suction, automated to switch water source as needed.</td>
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<tr>
<td>Priority</td>
<td>Project #</td>
<td>Page #</td>
<td>Address</td>
<td>Description</td>
<td>Bldg. Flood</td>
<td>Septic Issues</td>
<td>Well Issues</td>
<td>No. Props. Affected</td>
<td>Esmt Needed</td>
<td>Recommended Solution / Option</td>
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<tr>
<td><strong>NORTHWEST</strong></td>
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<td>Fill in deep roadside ditches, improve area drainage (Dutchmans Bend Rd to Marina)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>4+</td>
<td>Possibly</td>
<td>extend storm sewer with inlets along the road front, possible extension to rear yards with new easements.</td>
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<td>4</td>
<td>West Highbanks Road (North) Closed Storm Sewer</td>
<td>Groundwater seepage, possible underdrain malfunction, high/perched water table</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>No</td>
<td>Underdrain replacement/new installation</td>
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<td><strong>NORTHEAST</strong></td>
<td></td>
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<td></td>
<td>Localized flooding, low lying properties, limited storm sewer infrastructure, grading alone may not help.</td>
<td>Very close</td>
<td>No</td>
<td>No</td>
<td>5-6</td>
<td>Yes</td>
<td>keep existing pumps, upgrade electrical with automation</td>
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<tr>
<td>Low</td>
<td>5</td>
<td>7-8</td>
<td>201-218 Grande Vista Street</td>
<td>Low lying properties, road runoff channels along property frontage, basement home with sump pump</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>1. improve drainage upstream (222-224 Aqua Vista); 2. Asphalt curb at 230-232; 3. Imper. Downstream drain.</td>
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<tr>
<td>Low</td>
<td>3</td>
<td>-</td>
<td>53 Madera Road</td>
<td>End of street, drainage accumulates on its way to lake.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>No</td>
<td>Reshape roadside swales as retention to &quot;lessen the load&quot;, from road highpoint on both sides of Lakewood Dr.</td>
</tr>
<tr>
<td>Low</td>
<td>4</td>
<td>-</td>
<td>22, 24 &amp; 34 Madera Road</td>
<td>Lakeside properties where eastern properties drain through to reach lake, lake level effects</td>
<td>close</td>
<td>No</td>
<td>No</td>
<td>3+</td>
<td>?</td>
<td>Reshape roadside swale to direct drainage to side lot lines, possibly reshape side yards; New pump conn.</td>
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<tr>
<td>High</td>
<td>10</td>
<td>14-15</td>
<td>Benson Junction Flooding</td>
<td>Drainage connection to FDOT system disconnected, backs up to wetland and floods road</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>2+</td>
<td>No</td>
<td>Storm sewer system to drain to Shell Road</td>
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<tr>
<td>Low</td>
<td>9</td>
<td>13</td>
<td>60 Azalea Drive</td>
<td>Side yard flooding, low lying area - minor &quot;bowl&quot;.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>1st - retention swales from road highpoint to highpoint; 2nd - storm sewer to divert to nearby pond w easements</td>
</tr>
<tr>
<td>High</td>
<td>11</td>
<td>16</td>
<td>Alexander Island / St. Lucie Island Beach, St. Lucie Island</td>
<td>Improve roadside drainage, fill in deep roadside ditches</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>3</td>
<td>No</td>
<td>Boardwalk along existing berm (Floating capability); Storm sewer trunk line under Ft. Bla Rd EDP</td>
</tr>
<tr>
<td><strong>SOUTHWEST</strong></td>
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<td></td>
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<td>Low point, area runoff drains through property to rear</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1+</td>
<td>Possibly</td>
<td>1st - retention swales from road highpoint to highpoint; 2nd - storm sewer to divert to nearby pond w easements</td>
</tr>
<tr>
<td>Low</td>
<td>8</td>
<td>11-12</td>
<td>20 Catalina Drive</td>
<td>Drainage not getting to exist. Inlets-blocked by drainfield or driveways, low lying</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>4+</td>
<td>No</td>
<td>29 Bass Lake - inlet to cross road, 33 Bass Lake - inlets to cross garage d/w and roadside swale reshape.</td>
</tr>
<tr>
<td>Low</td>
<td>12</td>
<td>23-24</td>
<td>44-148 DeBary Drive</td>
<td>Low point of road, drainage flows through to reach private depression to rear of lots</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1+</td>
<td>?</td>
<td>Possible purchase of 144 DeBary Dr for area retention</td>
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<tr>
<td>Low</td>
<td>17</td>
<td>25-26</td>
<td>237 Sunrise Boulevard/258 Fraser Rd/ 257 DeBary Dr Dredging</td>
<td>Water not moving in sideyard ditch, ditch is discharge point for wetland across street</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>3+</td>
<td>Yes</td>
<td>1. do nothing; 2. formalize ditch connection to wetland behind 249 Sunrise w easement; 3. pipe ditch w esmts.</td>
</tr>
<tr>
<td>Low</td>
<td>18</td>
<td>27-28</td>
<td>201-218 Grande Vista Street</td>
<td>Low lying, minor “bowl”, front property corner flooding destroyed driveway</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>4+</td>
<td>No</td>
<td>Reshape roadside swales, inlets to drain to nearby retention w land purchase</td>
</tr>
<tr>
<td>Low</td>
<td>19</td>
<td>29</td>
<td>32 Estrella Road / 142 Lakewood Drive</td>
<td>Road dips down and remains flooded, &quot;bowl&quot; area</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>1st - ret. swales from road HP to HP at all directions; 2nd - storm sewer to nearby City prop.-Verona Rd.</td>
</tr>
<tr>
<td>High</td>
<td>21</td>
<td>32-33</td>
<td>Bill Keller Park - Lake Charles Pump Retrofit</td>
<td>Tied to Permitting of Woodbound Lakes Pump Station</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>Keep existing pumps, upgrade electrical with automation</td>
</tr>
<tr>
<td>Priority</td>
<td>Project #</td>
<td>Page #</td>
<td>Address</td>
<td>Description</td>
<td>Bldg. Flood</td>
<td>Septic Issues</td>
<td>Well Issues</td>
<td>No. Props. Affected</td>
<td>Esent Needed</td>
<td>Recommended Solution / Option</td>
</tr>
<tr>
<td>----------</td>
<td>-----------</td>
<td>--------</td>
<td>---------</td>
<td>-------------</td>
<td>-------------</td>
<td>---------------</td>
<td>-------------</td>
<td>----------------------</td>
<td>--------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>High</td>
<td>22</td>
<td>-</td>
<td>Bill Keller Park - surface water irrigation conversion</td>
<td>Tied to Permitting of Woodbound Lakes Pump Station</td>
<td>High</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>surface water suction, automated to switch water source as needed</td>
</tr>
<tr>
<td>Low</td>
<td>23</td>
<td>34</td>
<td>113 Angeles Road</td>
<td>low lying, road drainage accumulates on front yard, yard below road.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>Possible</td>
<td>control road drainage and direct to side yard to drain to rear of lot.</td>
</tr>
<tr>
<td>Medium</td>
<td>24</td>
<td>35-36</td>
<td>286 DeBary Drive</td>
<td>low lying, property at or below road elevations, drainage ponds side and front yards</td>
<td>close</td>
<td>No</td>
<td>No</td>
<td>1+</td>
<td>No</td>
<td>storm sewer system to drain across DeBary Drive</td>
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<tr>
<td>High</td>
<td>25</td>
<td>37</td>
<td>338 Gardenia Avenue</td>
<td>low lying, area drainage &quot;bowl&quot;, discharge needs maintenance, no easement</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>7</td>
<td>Possibly</td>
<td>possibly</td>
</tr>
<tr>
<td>Medium</td>
<td>26</td>
<td>38</td>
<td>Tropical Lagoon Dredging</td>
<td>Improve drainage and restore capacity</td>
<td>No</td>
<td>Possible</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>dredging limited to submerged areas</td>
</tr>
<tr>
<td>High</td>
<td>27</td>
<td>39-40</td>
<td>286, 268, 271, 275 DeLeon Rd &amp; 62 Alano Rd</td>
<td>Flat low lying area, poor drainage along DeLeon, rear yard is in flood plain, exist. dead end exfil.</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>4+</td>
<td>No</td>
<td>add 1-2 inlets and interconnect existing inlets to new pump station, reshape roadside swale</td>
</tr>
</tbody>
</table>
## AGENDA ITEM

**Subject:** Stormwater Design, Engineering, & Construction Management and Inspection Services – Kimley-Horn and Associates, Inc.  
**From:** Carmen Rosamonda, City Manager  
**Meeting Hearing Date:** March 16, 2022

**Attachments:**  
( ) Ordinance  
( ) Resolution  
( ) Supporting Documents/Contracts  
( ) Other

### REQUEST

City Manager is requesting City Council approval of Stormwater Engineering Design, Permitting, and Construction Engineering and Inspection (CEI) Services from Kimley-Horn and Associates, Inc. for Individual Project Orders #3-8.

### PURPOSE

The purpose is to design, permit, manage the construction, and perform engineering inspections for these projects to improve the City’s stormwater system.

### CONSIDERATIONS

- City staff has identified 27 stormwater improvement projects throughout the community, which will complete the vast majority of the City’s Stormwater System.
- The City received ARPA funds which have specific guidelines, timing parameters, reporting and auditing requirements. Stormwater projects are an allowable use.
- The City has multiple continuing contracts for general engineering, construction management, and inspection services. City staff considered proposals from each consultant on method, timing, and cost.
- Kimley Horn has proposed to complete the design, permitting, construction management, and engineering inspections for 19 stormwater projects clustered into 6 project task orders. All of these projects are adding new infrastructure.

### COST/FUNDING

All of these projects are in the approved FY 2021-22 budget under Fund 300 - ARPA Capital Projects Fund. The total cost for design, engineering and construction management and inspection services for these 6 individual project orders (IPO) are $767,490.00.
RECOMMENDATION
It is recommended that the City Council approve the Stormwater Design, Engineering and Construction Management and Inspection (CEI) Services from Kimley-Horn and Associates Inc. for Individual Project Task Orders #3-8 totaling $747,490.00

IMPLEMENTATION
Immediately upon Approval

ATTACHMENTS
Kimley-Horn IPO #3
Kimley-Horn IPO #4
Kimley-Horn IPO #5
Kimley-Horn IPO #6
Kimley-Horn IPO #7
Kimley-Horn IPO #8
DeBary Stormwater Project List
DeBary Stormwater Project Map
### Stormwater Projects
**ARPA Grant Program**

<table>
<thead>
<tr>
<th>Project Site(s)</th>
<th>Engineer</th>
<th>Engineer Order</th>
<th>Engineering Cost</th>
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<tbody>
<tr>
<td>Site 1: West Highbanks Road – Closed Stormwater System (North) &amp; Retention Pond</td>
<td>Kimley Horn</td>
<td>Project Order #8</td>
<td>$250,620</td>
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<tr>
<td>Site 2: 474 Eagle Brook Ct. Site 3: 116 Glen Abbey Lane Site 4: 221 Glen Abbey Lane Site 5: 387 Glen Abbey Lane Site 6: 202 Yorkville Place</td>
<td>Kimley Horn</td>
<td>Project Order #4</td>
<td>$88,870</td>
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<tr>
<td>Site 8: 20 Catalina Drive Site 9: 60 Azalea Drive</td>
<td>Kimley Horn</td>
<td>Project Order #5</td>
<td>$53,390</td>
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<tr>
<td>Site 13: 29-31 Bass Lake Drive Site 14: 22, 24, &amp; 34 Madera Rd Site 15: 53 Madera Rd Site 19: 32 Estrella Rd/142 Lakewood Drive</td>
<td>Kimley Horn</td>
<td>Project Order #3</td>
<td>$86,940</td>
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<tr>
<td>Site 12: 218 Lago Vista St./123 Sunrise Blvd Site 18: 201-218 Grande Vista St. Site 20: 221, 232-234 Agua Vista St.</td>
<td>Kimley Horn</td>
<td>Project Order #6</td>
<td>$152,470</td>
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<tr>
<td>Site 16: 144-148 DeBary Drive Site 17A: 253 Sunrise Blvd/250 Fraser Rd Site 23: 115 Angeles Road Site 27: 286 DeLeon Road</td>
<td>Kimley Horn</td>
<td>Project Order # 7</td>
<td>$135,200</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>$767,490</strong></td>
</tr>
</tbody>
</table>
INDIVIDUAL PROJECT ORDER NUMBER 3

February 24, 2022

Describing a specific agreement between Kimley-Horn and Associates, Inc. (‘Kimley-Horn’) and The City of DeBary (the “Client” or the “City”) in accordance with the terms of the Continuing Contract for Professional Engineering Services (‘Contract’) dated January 6, 2021, which is incorporated herein by reference.

Identification of Project:

Project: City of DeBary Stormwater Improvement Project: Group A (Sites 13, 14, 15, and 19)

Site 13: 29-31 Bass Lake Drive
Site 14: 22, 24 & 34 Madera Road
Site 15: 53 Madera Road
Site 19: 32 Estrella Road / 142 Lakewood Drive

Project Manager: Brent A. Lenzen, P.E.

Project Understanding:

This Individual Purchase Order (IPO) identifies the scope, schedule, and fee for engineering services associated with Group A of the City of DeBary Drainage Improvement Project. Group A include stormwater improvement sites 13, 14, 15, and 19.

Stormwater Improvement Site 13
Requires engineering services related to existing flooding occurring in front of residential properties along the east side Base Lake Drive. Flooding has been reported along residential property 31 Bass Lake Drive, extends north along Bass Lake Road towards 29 Bass Lake Drive. Low areas occur throughout this problem area with no relief or clear path to existing drainage inlets.

Stormwater Improvement Site 14
Requires engineering services related to existing flooding occurring in front of residential properties 22, 24, and 34 Madera Road. Flooding has been reported along the front portion of these properties and has no relief to continue drainage towards Gem Lake.

Stormwater Improvement Site 15
Requires engineering services related to existing flooding occurring in front of residential property 53 Madera Road. Flooding has been reported along the front portion of this property and has no relief to continue drainage towards Gem Lake.

Stormwater Improvement Site 19
Requires engineering services related to existing flooding at 32 Estrella Road near the intersection with Lakewood Drive. The problem area is an existing low depressional area in the roadway adjacent to 32 Estrella Road with no outfall.

Kimley-Horn will provide engineering services associated with the design and construction plans to address the issues described above.
Specific Scope of Services:

Task 1 – Drainage Design

Kimley-Horn will analyze the existing drainage system and provide a brief technical memorandum of findings to identify options to resolve the maintenance problems within the Group A site limits. The memorandum will document field reviews, flooding reports, and drainage calculations; and provide recommended solution(s) and sketches. This task includes one (1) field review during a storm event and a meeting with the City Representative.

For site 13, 14, 15, and 19 of Group A, a description of these services consists of the following:

- Site 13
  - Analyze existing drainage system
  - Regrade existing swales
  - Proposed side drain under the driveway connecting to Bonita Road for residential property 31 Base Lake Drive
  - Proposed pipe under Bass Lake Drive between residential properties 29 Bass Lake Drive and 31 Bass Lake Drive to direct water to the existing inlet
- Site 14
  - Analyze existing drainage patterns at 22, 24 & 34 Madera Road
  - Regrade existing open drainage system (swales)
  - Proposed drainage system to relieve flooding and direct water to Gem Lake
  - Design Best Management Practices (BMP) to avoid adverse impacts to water quality of lake
- Site 15
  - Analyze existing drainage patterns at 53 Madera Road
  - Regrade existing open drainage system (swales)
  - Proposed drainage system (exfiltration trench) to relieve flooding
- Site 19
  - Analyze existing drainage system
  - Regrade existing swales
  - Proposed drainage system, including exfiltration trench, along both sides of Estrella road at the low point in the roadway and will extend approximately 400 feet along the north side of Lakewood Drive

Kimley-Horn will design a drainage system to help address the above stated issues. This design is limited to the above stated services for each site.

Task 2 – Construction Plans

Based on the designs identified in Task 1, Kimley-Horn will prepare a plan set for Group A including construction plan for the drainage improvements that will include sites 13, 14, 15, and 19. The plan sheets will be prepared on 11"x17" half size sheets. Kimley-Horn will submit 30% plans to the City for review and comment prior to developing final plans for submittal to the City. Kimley-Horn will respond to one (1) round of comments from the City. It is anticipated that Temporary Traffic Control Plans (TTCP) will be prepared by the Contractor and is not included this Task.

For each site included in Group A, Kimley-Horn will conduct one (1) coordination meeting with utility owners to coordinate impact of the proposed improvements on their facilities. Kimley-Horn will submit construction plans to affect utility companies once during the design phase in an effort to identify conflicts for relocation from the respective utilities and submit them to the City for inclusion in the bid documents.

This task does not include utility design and if required, can be performed as an additional service.

The construction plans set will include one (1) of the following items:

- Key Sheet
- General Notes
- Project Layout Sheet
The construction plans set will also include one (1) of the following items for each site contained in Group A for each of the sites 13, 14, 15 and 19:

- Plan/Profile Sheets
- Cross Sections
- Erosion Control Plans
- Construction Details

**Task 3 – Permitting Coordination**

It is anticipated that the drainage improvements in sites 13, 14, and 15 will not require a St. Johns River Water Management District (SJRWMD) Environmental Resource Permit (ERP). Kimley-Horn will prepare a permit exemption verification application. It is anticipated that the drainage improvements in site 19 will require a SJRWMD ERP. Kimley-Horn will prepare a general permit application. Kimley-Horn will respond to one (1) request for additional information from the SJRWMD. Permitting services beyond the requirements outlined above will require additional scope and fees.

**Task 4 – Survey and Mapping Services**

Kimley-Horn will retain the services of Allen & Company, Inc. to perform the survey for area per site stated below. Right of way survey will include preparation of depicting computed existing/apparent right-of-way lines within the project limits. Refer to attached subconsultant proposal for additional information.

**Task 5 – Bid Assistance Services**

Kimley-Horn will prepare one (1) opinion of probable construction cost and one (1) contractor bid tabulation form for each site included in Group A for use by the City during the bidding process. Kimley-Horn will attend one (1) pre-bid meeting and provide input as directed by the City for each site included in Group A. Kimley-Horn will prepare responses to questions submitted by the contractors to the City during the bidding period.

**Task 6 – Construction Phase Services**

Kimley-Horn will review drainage structure shop drawings submitted by the Contractor in accordance with standard FDOT procedures. The City will be responsible for the receipt, distribution, and disposition of all contractor submittals, including project logs. The term “shop drawings” include all drawings, diagrams, illustrations, transportation procedures, manuals, and design calculations submitted by the Contractor to define some portion of the project.

Kimley-Horn will provide written responses to the City for up to two (2) Contractor Requests for Information (RFI) for each site included in Group A.

For each site included in Group A, Kimley-Horn will attend up to two (2) progress meetings during construction as requested by the City. This task does not include engineering inspection services.

**Task 7 – Construction Engineering and Inspection (CEI)**

Kimley-Horn has retained the services of SAI Consulting Engineers, Inc. to provide Construction Engineering and Inspection ("CEI") Services. This task includes the following items:

- Part-time field inspection services
- Daily work reports for days our staff is on-site
- On-Site materials testing services (Densities, concrete tests etc.)
- Laboratory materials testing (earthwork proctors etc.) through a sub-consultant
- Attend project meetings
- Contractor’s schedule review

SAI’s fee breakdown is attached at the back of this scope for reference.
**Deliverables**

Kimley-Horn will provide the following deliverables associated with this project:

- Construction Plans
- Technical memorandum
- SJRWMD Permit Exemption (sites 13, 14, and 15)
- SJRWMD General Permit (site 19)

**Additional Services**

The following services are not included in this IPO but may be performed if authorized by the City. Payment for these additional services will be agreed upon prior to their performance.

- Attendance at meetings in addition to those noted in the scope of services
- Certified Arborist evaluation for tree preservation
- Temporary Traffic Control Plans
- Subsurface utility verification
- Geotechnical services
- Utility Plans

**Information Provided By Client:**

The City will provide the following information, upon which Kimley-Horn can rely:

- Available right of way data
- Available record or as-built plans
- Available permits
- Data regarding the existing road conditions
- Lidar / Contours

**Schedule:**

Tasks 1-5 are anticipated to be completed within 120 calendar days of notice to proceed. The completion of Tasks 6 and 7 will depend on the construction schedule.

**Fee and Billing:**

Kimley-Horn will complete the above scope of services for the lump sum fees detailed below, inclusive of office overhead expenses. Services provided under this will be invoiced on a monthly basis. All invoices will include a description of services provided. Approval from the City shall be required for all invoiced travel expenses and meetings. Fee breakdown tables for the lump sum tasks noted below have been included in Appendix A for reference.
Group A Fee Breakdown

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>Lump Sum Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1</td>
<td>Drainage Design</td>
<td>$24,700</td>
</tr>
<tr>
<td>Task 2</td>
<td>Construction Plans</td>
<td>$21,700</td>
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<tr>
<td>Task 3</td>
<td>Permitting Coordination</td>
<td>$11,000</td>
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<tr>
<td>Task 4</td>
<td>Survey and Mapping Services</td>
<td>$17,000</td>
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<tr>
<td>Task 5</td>
<td>Bid Assistance Services</td>
<td>$3,260</td>
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<tr>
<td>Task 6</td>
<td>Construction Phase Services</td>
<td>$5,400</td>
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<td>Task 7</td>
<td>Construction Engineering and Inspection (CEI)</td>
<td>$3,880</td>
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<tr>
<td></td>
<td><strong>Sub-Total (Labor)</strong></td>
<td><strong>$86,940</strong></td>
</tr>
</tbody>
</table>

Attachments: Appendix A

ACCEPTED:
THE CITY OF DEBARY, FLORIDA

BY: ____________________________

TITLE: ____________________________

DATE: ____________________________

KIMLEY-HORN AND ASSOCIATES, INC.

By: ____________________________

Brent A. Lenzen, P.E., Associate/Assistant Secretary

Date: February 24, 2022
APPENDIX A

LUMP SUM FEE BREAKDOWN
# APPENDIX A - CONSULTANT’S COMPENSATION PROPOSAL

## CIVIL BREAKDOWN OF FEES

<table>
<thead>
<tr>
<th>Item/Attorney</th>
<th>Principal</th>
<th>Senior Vice President</th>
<th>Senior Engineer</th>
<th>Senior Project Manager</th>
<th>Professional Engineer (PE)</th>
<th>Engineer (E)</th>
<th>Senior CAD Designer</th>
<th>CAD Technician</th>
<th>Architectural</th>
<th>Chalk &amp; Total</th>
<th>TOTAL</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>$250</td>
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<table>
<thead>
<tr>
<th>Item/Attorney</th>
<th>Landscape</th>
<th>Land Survey</th>
<th>Cartography</th>
<th>Land Planning</th>
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<td>$120</td>
<td>$250</td>
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</table>

**Drainage Design**

<table>
<thead>
<tr>
<th>Site</th>
<th>Principal</th>
<th>Senior Vice President</th>
<th>Senior Engineer</th>
<th>Senior Project Manager</th>
<th>Professional Engineer (PE)</th>
<th>Engineer (E)</th>
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<td>$100</td>
<td>$80</td>
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<td>$250</td>
<td>$1,500</td>
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</table>

**Construction Plan**

<table>
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<th>Senior Engineer</th>
<th>Senior Project Manager</th>
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<th>Engineer (E)</th>
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<td>$250</td>
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**Permit Coordination**

<table>
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<th>Senior Engineer</th>
<th>Senior Project Manager</th>
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<th>Engineer (E)</th>
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<th>TOTAL</th>
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<tbody>
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<td>$100</td>
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**Bill of Materials**

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<th>Senior Project Manager</th>
<th>Professional Engineer (PE)</th>
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<tbody>
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<td>$80</td>
<td>$250</td>
<td>$250</td>
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**Construction Phase Services**

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<th>Senior Engineer</th>
<th>Senior Project Manager</th>
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<th>Senior CAD Designer</th>
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**TOTAL LUMP SUM FEE:**

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<th>Senior Engineer</th>
<th>Senior Project Manager</th>
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<td>$100</td>
<td>$80</td>
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<td>$250</td>
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</tr>
</tbody>
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**City of Debor**

10/19/2021
PROJECT PROPOSAL

Date: November 15, 2021
Client: Kimley-Horn
Project Type: Offsite Route / Topographic Surveys
Project Name: Debary Stormwater Study
Prepared By: James Rickman, P.S.M., Vice President / Executive Director of Land
Phone: 407.654.5355. Ext. 102
Email: Jim@allen-company.com
November 15, 2021

Kimley-Horn
116 South Kentucky Avenue
Lakeland, FL 33801
Attn: Katie Gleason - Katie.Gleason@kimley-horn.com

RE: Debarry Stormwater Study - Letter of Agreement - Exhibit A (20210935-1)

Katie Gleason:

We appreciate your consideration of ALLEN & COMPANY, INC. to provide professional Land Surveying services for the above referenced project. These services will include items listed on Exhibit “A” to be billed Lump Sum as shown on Exhibit “A”, attached, plus out-of-pocket expenses incurred on the client’s behalf. Also, included in this contract are the attached “Standard Provisions of Agreement for Professional Services”.

The survey will be prepared in accordance with the minimum technical standards for surveys as set forth in Chapter 5J-17 Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

The following additional provisions are included in this contract:

1. The terms of this agreement shall be valid for client acceptance for a period of sixty (60) days from the date of execution by Allen & Company, Inc. after which time this contract offer becomes null and void if not accepted formally (evidenced by receipt of an executed copy of this document).

2. This agreement may be terminated by either party within fifteen (15) days written notice. In the event of termination, Allen & Company, Inc. shall be compensated to the date of termination, including direct expenses then due.

3. All rates and fees quoted in this document shall be effective for a period of twelve (12) months, after which time they may be renegotiated with the client.
4. All original documents shall be retained by Allen & Company, Inc. and will remain their property. This information is proprietary and will not be shared with others without prior written consent. The client will be provided with reproducible copies of all original documents upon request, and at client expense.

5. The client will pay invoices upon receipt and understands interest charges of 1.5% per month will be applied to any unpaid balance. Allen & Company, Inc. may elect to stop work until payment is received. If work is stopped for thirty (30) days or more, Allen & Company, Inc. may be compensated for start-up costs when work resumes.

6. Upon client request, we will contract and/or coordinate with applicable transportation, environmental, geotechnical, and engineering consultants, and will rely upon their work; however, Allen & Company, Inc. assumes no liability for the accuracy of their work.

Thank you for this opportunity and we look forward to working with you on this exciting new project. Please sign, date and return a copy of this agreement as your authorization to proceed with these professional services. Should you have any questions, please do not hesitate to call.

Sincerely,

ALLEN & COMPANY, INC.

James Rickman
James L. Rickman P.S.M. Vice President

ACCEPTED BY (Sign & Print): ___________________________ DATE: ______________

16 E Plant Street, Winter Garden, FL 34787 • Phone 407.654.5355 • Fax: 407.654.5356 • Email: proposals@allen-company.com
www.alen-company.com
### EXHIBIT A

**DATE:** November 15, 2021  
**PROPOSAL:** 20210935-1 - Debary Stormwater Study  
**FOR:** Katie Gleason

**Customer Information:**  
Kimley-Horn  
116 South Kentucky Avenue  
Lakeland, Fl. 33801

**Quote Description:**  
20210935-1 - Debary Stormwater Study

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>CONTRACT AMOUNT</th>
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</thead>
<tbody>
<tr>
<td>1. Offsite Route and Topographic Survey of Group A Drainage Improvements – Sites 13, 14, 15 &amp; 19. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc....) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$17000.00</td>
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<tr>
<td>2. Offsite Route and Topographic Survey of Group B Drainage Improvements – Sites 2 through 6. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc....) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$20000.00</td>
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<td>3. Offsite Route and Topographic Survey of Group C Drainage Improvements – Sites 8 &amp; 9. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc....) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$10000.00</td>
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<td>4. Offsite Route and Topographic Survey of Group D Drainage Improvements – Sites 12, 18 &amp; 20. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc....) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$21500.00</td>
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<td>5. Offsite Route and Topographic Survey of Group E Drainage Improvements – Sites 16, 17, 23 &amp; 27. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc....) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$34000.00</td>
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<tr>
<td>6. Offsite Route and Topographic Survey of Benson Junction Road Drainage Improvements – Site 10 – Option A. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc....) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$13000.00</td>
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<tr>
<td>7. Offsite Route and Topographic Survey of Benson Junction Road Drainage Improvements – Site 10 – Option B. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc....) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$10000.00</td>
</tr>
</tbody>
</table>

**Total:** $125,500.00

**QUESTIONS OR COMMENTS?**  
16 E Plant Street, Winter Garden, FL 34787 • Phone: 407.654.5355 • Fax: 407.654.5356 • Email: proposals@allen-company.com  
www.alen-company.com
If you have any questions or comments concerning this proposal exhibit, please email proposals@allen-company.com

Sign & Return
• Allen & Company, Inc. will provide all survey services on work described herein.

• Allen & Company, Inc. will utilize 2D GPR to scan for utilities and EM Equipment to locate utilities where access to utilities is available.

• A Sunshine 811 "LOCATE" ticket will be requested for the areas described to determine the utility providers within the project limits and to notify them of the request for coordination with the Allen & Company, Inc. utility locator.

• Allen & Company, Inc. approximate locate area is outlined in red on the attached image. The exact locate area will need to be designated at time of work.

• Allen & Company, Inc. will use paint and flags to mark located utilities and will provide a technician's field drawing of the located utilities.

• Allen & Company, Inc.'s scope of services does not include the locating of abandoned utilities that are no longer locatable, vacant conduits, gravity sewer, storm lines, small irrigation lines, and low voltage lines. (Unless otherwise specified at an additional cost).

• Client is responsible for ensuring that all electrical and lighting systems are energized and that all lights with outdoor light sensor systems are in use at time of locate work.

• If available, Allen & Company, Inc. requests that client provide as-buils, engineering prints, etc. of existing utilities.

• GPR Scans can only be performed in accessible areas that are clear of obstacles such as construction materials, pipes, vehicles, machinery, dirt/materials mounds, landscaping, trees, uneven terrain, water, etc.

• If needed, Allen & Company, Inc. can provide a quote for 3D GPR that typically provides additional/more comprehensive data.
(A) LIMITS OF GPR AND ELECTROMAGNETIC SERVICES: If Services are Provided
ACI will make every effort to horizontally detect the underground utilities, objects or voids
described in the Scope of Work or as requested at the time of work within the designated work
area(s). However, ACI cannot mark utilities/objects/voids that are undetectable. Therefore, ACI
cannot guarantee that all subsurface utilities/objects/voids will be accounted for. Locate
limitations that ACI will not be held liable for include but are not limited to:

• GROUND PENETRATING RADAR (GPR):
  - GPR investigations are highly site specific and can be limited by attenuation of GPR signals by
    subsurface materials.
  - GPR investigations are limited by uneven terrain conditions, high grass (over 3’’), bushes, trees, debris,
    etc.
  - All vertically stacked utilities/objects may not be detected since GPR signals are reflected by the top
    most utility/object.
  - Some utilities/objects may not return a reflected signal to the GPR receiver.
  - GPR scans cannot be made immediately next to buildings/objects due to equipment restrictions.
  - Pipes with little or no liquid content at time of locate work may not be detected with GPR.
  - Locations of existing utilities scanned by ground penetrating radar (GPR) are to be deemed
    approximate in nature and in no way are to be construed as exact. Allen & Company, Inc. (ACI) will
    not be held responsible for damage to existing utilities located by GPR scanning.

• ELECTROMAGNETIC LOCATING:
  - The number of access points within designated locate area(s) may be limited or non-existent.
  - Utility or property owner may restrict or deny the use of utility access points.
  - Utility may not adequately carry the imposed current from the electromagnetic locate equipment.
  - Fiber & other non-metallic lines with no or non-working tracer wire are untoneable with
    electromagnetic locate equipment.
  - Locations of existing utilities designated by Electromagnetic Equipment (EM) are to be deemed
    approximate in nature and in no way are to be construed as exact. Allen & Company, Inc. (ACI) will not
    be held responsible for damage to existing utilities located by EM equipment.
(B) DESIGN ENGINEER and CONTRACTORS
Due to locate limitations, the client’s/owner’s Design Engineer is expected to gather and identify existing facility information from various prints and underground facility owners/operators to confirm that no other subsurface utilities/objects are present in the project area, and Contractors are responsible to abide by Florida Statutes 556.106 - Sunshine 811.

(C) MACHINE DEPTHS: (If Service is provided)
Machine depths are approximate readings, are not guaranteed depths, are provided for informational purposes only, and should not be relied upon for any type of subsurface work. ACI will not accept any responsibility for actions taken based on provided machine depths.

(D) VERTICAL EXCAVATION (DIRT SOFT DIG): Information/Limitations: (If Service is provided)
Soft Digs are made within grassed or otherwise unpaved surface conditions to a maximum depth of approximately 10 feet to determine the depth of the utility/object. If requested, ACI also will provide the size and material type.
• Soft Dig vertical depth measurements are made from the top of each exposed utility/object to the ground surface.
• The vertical depth range and visual inspection ability is dependent on events such as ground water level.
• Client must obtain/provide ACI with any required soft dig permits before soft dig work is performed. Client will be responsible for any permitting soft dig fines assessed by governing agency.

(E) CORE BORE WITH VERTICAL EXCAVATION (DIRT SOFT DIG): Information/Limitations: (If Service is provided)
A Core Bore is made in asphalt or concrete to vertically expose a utility/object to determine the depth of the utility/object from the top of the utility/object to the pavement surface.
• Vertical Excavation limits apply (See Item D).
• Test hole will be backfilled with like materials compacted in 6" lifts or with a flowable fill mixture.
• The current asphalt thickness will be replaced with double asphalt thickness.
• Asphalt/Concrete Core Bore Permits are to be furnished to ACI by the client prior to work being scheduled. Client is responsible for cost of all permits, MOT, Traffic Control, and any permitting fines assessed by governing agency.

(F) CERTIFICATE OF INS (COI): New/Revised COI Requests
• Client COI requirements must be provided to ACI prior to the Authorization to Proceed being issued.
• ACI will invoice client for all costs associated with client COI requirements that incur billable charges to ACI.
The Client and Surveyor agree that the following Provisions shall be a part of their agreement:

1. Neither the Client nor Surveyor shall assign its interest in this agreement without the written consent of the other.

2. All agreements on Surveyor's part are contingent upon, and Surveyor shall not be responsible for damages or be in default or be deemed to be in default by reason of: delays in performance by reason of strikes, lockouts, accidents, acts of God and other delays unavoidable or beyond Surveyor's reasonable control, or due to shortages or unavailability of labor at established area wage rate or delays caused by failure of Client or Client's agents to furnish information or to approve or disapprove Surveyor's work promptly, or due to late or slow, or faulty performance by Client, other contractors or governmental agencies, the performance of whose work is precedent to or concurrent with the performance of Surveyor's work, in the case of the happening of any such cause of delay, the time of completion shall be extended accordingly.

3. In the event that any changes are made in the plans and specifications by the Client or persons other than Surveyor which affect Surveyor's work, any and all liability arising out of such changes is waived as against Surveyor and the Client assumes full responsibility for such changes unless Client has given Surveyor prior notice and has received from Surveyor written consent for such changes.

4. Surveyor is not responsible, and liability is waived by client as against Surveyor, for use by Client or any other person of any plans or drawings not signed by Surveyor.

5. All tracings, survey notes, and other original documents are instruments of service and shall be the property of Surveyor, except whereby law or precedent these documents become public property.

6. Surveyor's liability to the Client for injury or damage to persons or property arising out of work performed for the Client and for which legal liability may be found to rest upon Surveyor, other than for professional errors and omissions, will be limited to Surveyor's general liability insurance coverage. For any damage on account of any error, omission or other professional negligence, Surveyor's liability will be limited to a sum not-to exceed Surveyor's fee.

7. Fees and all other charges will be billed monthly as the work progresses and the net amount shall be due at the time of billing.

8. Interest 1-1/2% per month (but not exceeding the maximum rate allowable by law) will be payable on any amounts not paid within 30 days of the billing date, payment thereafter to be applied first to accrued interest and then to the principal unpaid amount. Any attorney's fees or other costs incurred in collecting any delinquent amount shall be paid by the Client.

9. The Client shall pay the costs of checking inspection fees, zoning and annexation application fees, assessment fees, soils Surveying fees, soils testing fees, aerial topography fees, and all other fees, permits, bond premiums, title company charges, blueprints and reproductions, and all other charges not specifically covered by the terms of this agreement.

10. In the event all or any portion of the work prepared or partially prepared by Surveyor is suspended, abandoned, or terminated, the Client shall pay Surveyor for the work performed on an hourly basis, not to exceed any maximum contract amount specified herein.

INITIALS __________
STANDARD PROVISIONS OF AGREEMENT
(CONTINUED)

11. Any Opinion of the Construction Cost prepared by Surveyor represents his Judgment as a design professional and is supplied for the general guidance of the Client. Since Surveyor has no control over the cost of labor and material, or over competitive bidding or market conditions, Surveyor does not guarantee the accuracy of such opinions as compared to contractor bids or actual cost to the Client.

12. The Client agrees that in accordance with generally accepted construction practices, the construction contractor will be required to assume sole and complete responsibility for Job site conditions during the course of construction of the project, including safety of all persons and property and that this requirement shall be made to apply continuously and not be limited to normal working hours.

13. In the performance of its professional services, Surveyor will use that degree of care and skill ordinarily exercised under similar conditions in similar localities and no other warranties express or implied are made or intended in any of Surveyor’s proposals, contracts or reports. The Client agrees to defend, indemnify, and hold harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability proximately arising from the sole negligence of Surveyor.

14. In the event the Client fails to pay Surveyor within sixty (60) days after invoices are rendered, then Client agrees that Surveyor shall have the right to consider said default a total breach of this agreement and the duties of Surveyor under this agreement terminated upon five (5) days written notice. This agreement may be terminated by either Client or Surveyor upon thirty (30) days written notice in the event of substantial failure of the other party to perform in accordance with the terms of this agreement. Client expressly agrees to hold Surveyor harmless from any liability arising out of Surveyor’s termination of its services hereunder due to Client’s failure to perform and/or pay in accordance with the provisions of this agreement. In the event of termination of this agreement, Client shall then promptly pay Surveyor for all of the fees, charges and services performed by Surveyor in accordance with the compensation arrangements under this agreement or on an agreed hourly basis.

15. The Client agrees not to solicit or be solicited by any employee, former employee or subconsultant of Allen & Company, Inc. for employment for this project or any other Client’s project for one year after completion and/or termination of Allen & Company services without written consent. In event Client fails to adhere by said agreement, then Client will be billed for one year at the employee’s billable rate.

16. Should litigation be necessary to enforce any term or provision of this agreement, or to collect any portion of the amount payable under this agreement, then all litigation and collection expenses, witness fees and court costs, and attorney’s fees shall be paid to the prevailing party.

17. Should any provision herein be found or deemed to be invalid, this agreement shall be construed as not containing such provisions and all other provisions which are otherwise lawful shall remain in full force and effect, and to this end the provisions of this agreement are declared to be severable.

18. Services provided within this agreement are for the exclusive use of the Client.

19. There are no understandings or agreements except as herein expressly stated.

20. All "Standard Hourly Rates" will be maintained for 60 days from the date the contract is signed.

INITIALS ________
### DeBary Stormwater Projects

#### CEI Services

<table>
<thead>
<tr>
<th>Site</th>
<th>Senior Inspector</th>
<th>Project Administrator</th>
<th>Senior Project Engineer</th>
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<tbody>
<tr>
<td>West Highbanks Road</td>
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<tr>
<td>Group B, Site 2</td>
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<td>Group B, Site 3</td>
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<td>Group B, Site 4</td>
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<td>Group B, Site 5</td>
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<td>Group B, Site 6</td>
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<td>James Pond Pump Sta.</td>
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<td>Group C, Site 8</td>
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<td>Group C, Site 9</td>
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<td>Benson Junction Flooding</td>
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<td>Alexander Island</td>
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<td>Bill Keller Park</td>
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<td>Group E, Site 23</td>
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<td>286 DeBary Drive</td>
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<td>338 Gardenia Avenue</td>
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<tr>
<td>Tropical Lagoon Dredging</td>
<td>14</td>
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<td>Group E, Site 27</td>
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**Total Hours**: 300

**Senior Inspector**: 30

**Project Administrator**: 30

**Senior Project Engineer**: 9

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**Group A Total Hours**: 38 hrs

10% Project Administrator = 4 hrs

3% Senior Project Engineer = 2 hrs

38 hrs x $77.87 = $2,959.06

4 hrs x $104.22 = $416.88

2 hrs x $152.86 = $305.72

1/5 Lab Material Testing = $200

Total Group A = $3,881.66

---

### Total Costs

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<th>Position</th>
<th>Hours</th>
<th>Billing Rate</th>
<th>Total Costs</th>
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<tr>
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<tr>
<td>Senior Inspector</td>
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<td>Lab Materials Testing</td>
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<td><strong>Grand Total</strong></td>
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<td><strong>$28,863.34</strong></td>
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</table>

Hours are estimated based on part time inspection of each site

Lab Materials testing is for Proctors etc. as required
INDIVIDUAL PROJECT ORDER NUMBER 4

February 24, 2022

Describing a specific agreement between Kimley-Horn and Associates, Inc. ("Kimley-Horn") and The City of DeBary (the "Client" or the "City") in accordance with the terms of the Continuing Contract for Professional Engineering Services ("Contract") dated January 6, 2021, which is incorporated herein by reference.

Identification of Project:

Project: City of Debary Stormwater Improvement Project: Group B (Sites 2, 3, 4, 5, and 6)

- Site 2: 474 Eagle Brook Court
- Site 3: 116 Glen Abbey Lane
- Site 4: 221 Glen Abbey Lane
- Site 5: 387 Glenn Abbey Lane
- Site 6: 202 Yorkville Place

Project Manager: Brent A. Lenzen, P.E.

Project Understanding:

This Individual Purchase Order (IPO) identifies the scope, schedule, and fee for engineering services associated with Group B of the City of Debary Drainage Improvement Project. Group B include stormwater improvement sites 2, 3, 4, 5, and 6.

Stormwater Improvement Site 2
Requires engineering services related to existing flooding occurring in front of and between residential properties along the north side Eagle Brook Court. Flooding has been reported along residential property 476 Eagle Brook Court and extends west along Eagle Brook Court toward the intersection with Soft Shadow Lane. Flooding has also been reported in the side yards of residential properties 470 Eagle Brook Court, 472 Eagle Brook Court, and 474 Eagle Brook Court. Low areas occur throughout this problem area with no relief or clear path to existing drainage inlets.

Stormwater Improvement Site 3
Requires engineering services related to flooding in front of residential property 116 Glen Abbey Lane. Storm runoff has been reported sheet flowing from Rosehill Crescent Court across Glen Abbey Lane into the front yard of residential property 116 Glen Abbey Lane.

Stormwater Improvement Site 4
Requires engineering services related to existing flooding occurring in front of residential property 221 Glen Abbey Lane. Flooding has been reported along the front portion of this property and has no relief to continue towards existing drainage inlets.

Stormwater Improvement Site 5
Requires engineering services related to existing flooding occurring in front of residential property 387 Glen Abbey Lane. Flooding has been reported along the front portion of this property and has no relief to continue towards existing drainage inlets.

Stormwater Improvement Site 6
Requires engineering services related to existing flooding occurring in front of and between residential properties along the north side of Yorkville Place. Flooding has been reported in a low area between 202 Yorkville Place and 200 Yorkville Place. Flooding has also been reported along the south and west property lines of 202 Yorkville Place. Low areas occur throughout this problem area with no relief or clear path to
Specific Scope of Services:

Task 1 – Drainage Design

Kimley-Horn will analyze the existing drainage system and provide a brief technical memorandum of findings to identify options to resolve the maintenance problems within the Group B site limits. The memorandum will document field reviews, flooding reports, and drainage calculations; and provide recommended solution(s) and sketches. This task includes one (1) field review during a storm event and a meeting with the City Representative.

For site 2, 3, 4, 5, and 6 of Group B, a description of these services consists of the following:

- Site 2
  - Analyze existing drainage patterns at the intersection of Eagle brook Court and Soft Shadow Lane
  - Regrade existing swales along Eagle Brook Court to connect to existing inlet at intersection
  - Analyze back yard flooding (470, 472, and 474 Eagle Brook Court) and propose relief by connecting to proposed City system along Eagle Brook Court
  - Propose inlet pipe system in front of 472 and 474 Eagle Brook Court to collect roadway runoff to avoid offsite discharge

- Site 3
  - Analyze existing drainage system along the south side of Glen Abbey Lane in front of 116 Glen Abbey Lane
  - Identified proper freeboard and regrade existing swale if necessary, to avoid flooding in private properties

- Site 4
  - Analyze existing drainage along the north side of Glenn Abbey Lane in front of 221 Glen Abbey Lane
  - Regrade existing swales in front of 221 Glen Abbey Lane
  - Proposed DBI in front of 221 Glen Abbey Lane and propose piping system to convey drainage to the existing drainage structure 130’ north along Glen Abbey Lane

- Site 5
  - Analyze existing drainage patterns in front of 385 and 387 Glen Abbey Lane
  - Identified proper freeboard and regrade existing swale if necessary, to avoid flooding in private properties

- Site 6
  - Analyze existing drainage system from 202 Yorkville Place, west to end of Yorkville Place
  - Regrade existing swales along 202 Yorkville Place
  - Propose swale grading between 200 and 202 Yorkville Place
  - Proposed DBI on north west corner of 203 Yorkville Place
  - Propose pipe under Yorkville Place from existing DBI on south west corner of 202 Yorkville place to proposed DBI on north west corner of 203 Yorkville Place
  - Propose pipe under Yorkville Place from proposed DBI on north west corner of 203 Yorkville Place to existing DBI between 210 and 212 Yorkville Place

Kimley-Horn will design a drainage system to help address the above stated issues. This design is limited to the above stated services for each site.

Task 2 – Construction Plans

Based on the designs identified in Task 1, Kimley-Horn will prepare a plan set for Group B including construction plan for the drainage improvements that will include sites 2, 3, 4, 5, and 6. The plan sheets will be prepared on 11”x17” half size sheets. Kimley-Horn will submit 30% plans to the City for review and comment prior to developing final plans for submittal to the City. Kimley-Horn will respond to one (1)
round of comments from the City. It is anticipated that Temporary Traffic Control Plans (TTCP) will be prepared by the Contractor and is not included this Task.

For each site included in Group B, Kimley-Horn will conduct one (1) coordination meeting with utility owners to coordinate impact of the proposed improvements on their facilities. Kimley-Horn will submit construction plans to affect utility companies once during the design phase in an effort to identify conflicts for relocation from the respective utilities and submit them to the City for inclusion in the bid documents.

This task does not include utility design and if required, can be performed as an additional service.

The construction plans set will include one (1) of the following items:
- Key Sheet
- General Notes
- Project Layout Sheet

The construction plans set will also include one (1) of the following items for each site contained in Group B for each of the sites 2, 3, 4, 5, and 6:
- Plan/Profile Sheets
- Cross Sections
- Erosion Control Plans
- Construction Details

**Task 3 – Permitting Coordination**

It is anticipated that the drainage improvements will not require a St. Johns River Water Management District (SJRWMD) Environmental Resource Permit (ERP). Kimley-Horn will prepare a permit exemption verification application. Kimley-Horn will respond to one (1) request for additional information from the SJRWMD. Permitting services beyond the requirements outlined above will require additional scope and fees.

**Task 4 – Survey and Mapping Services**

Kimley-Horn will retain the services of Allen & Company, Inc. to perform the survey for area per site stated below. Right of way survey will include preparation of depicting computed existing/apparent right-of-way lines within the project limits. Refer to attached subconsultant proposal for additional information.

**Task 5 – Bid Assistance Services**

Kimley-Horn will prepare one (1) opinion of probable construction cost and one (1) contractor bid tabulation form for each site included in Group B for use by the City during the bidding process. Kimley-Horn will attend one (1) pre-bid meeting and provide input as directed by the City for each site included in Group B. Kimley-Horn will prepare responses to questions submitted by the contractors to the City during the bidding period.

**Task 6 – Construction Phase Services**

Kimley-Horn will review drainage structure shop drawings submitted by the Contractor in accordance with standard FDOT procedures. The City will be responsible for the receipt, distribution, and disposition of all contractor submittals, including project logs. The term "shop drawings" include all drawings, diagrams, illustrations, transportation procedures, manuals, and design calculations submitted by the Contractor to define some portion of the project.

Kimley-Horn will provide written responses to the City for up to two (2) Contractor Requests for Information (RFI) for each site included in Group B.

For each site included in Group B, Kimley-Horn will attend up to two (2) progress meetings during construction as requested by the City. This task does not include engineering inspection services.
Task 7 – Construction Engineering and Inspection (CEI)

Kimley-Horn has retained the services of SAI Consulting Engineers, Inc. to provide Construction Engineering and Inspection ("CEI") Services. This task includes the following items:

- Part-time field inspection services
- Daily work reports for days our staff is on-site
- On-Site materials testing services (Densities, concrete tests etc.)
- Laboratory materials testing (earthwork proctors etc.) through a sub-consultant
- Attend project meetings
- Contractor’s schedule review

SAI’s fee breakdown is attached at the back of this scope for reference.

Deliverables

Kimley-Horn will provide the following deliverables associated with this project:

- Construction Plans
- Technical memorandum
- SJRWMD Permit Exemption

Additional Services

The following services are not included in this IPO but may be performed if authorized by the City. Payment for these additional services will be agreed upon prior to their performance.

- Attendance at meetings in addition to those noted in the scope of services
- Certified Arborist evaluation for tree preservation
- Temporary Traffic Control Plans
- Subsurface utility verification
- Geotechnical services
- Utility Plans

Information Provided By Client:

The City will provide the following information, upon which Kimley-Horn can rely:

- Available right of way data
- Available record or as-built plans
- Available permits
- Data regarding the existing road conditions
- Lidar/ Contours

Schedule:

Tasks 1-5 are anticipated to be completed within 120 calendar days of notice to proceed. The completion of Tasks 6 and 7 will depend on the construction schedule.

Fee and Billing:

Kimley-Horn will complete the above scope of services for the lump sum fees detailed below, inclusive of office overhead expenses. Services provided under this will be invoiced on a monthly basis. All invoices will include a description of services provided. Approval from the City shall be required for all invoiced travel expenses and meetings. Fee breakdown tables for the lump sum tasks noted below have been included in Appendix A for reference.
### Group B Fee Breakdown

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**Sub-Total (Labor)** $88,870

Attachments: Appendix A

---

**ACCEPTED:**  
THE CITY OF DEBARY, FLORIDA

BY: ____________________________

TITLE: ____________________________

DATE: ____________________________

**KIMLEY-HORN AND ASSOCIATES, INC.**

By: ____________________________

Brent A. Lenzen, P.E., Associate/Assistant Secretary

Date: February 24, 2022
APPENDIX A

LUMP SUM FEE BREAKDOWN
## APPENDIX A - CONSULTANT'S COMPENSATION PROPOSAL
### CIVIL BREAKDOWN OF FEES

<table>
<thead>
<tr>
<th>Task</th>
<th>Principal</th>
<th>Senior Vice President</th>
<th>Senior Engineer</th>
<th>Senior Project Manager</th>
<th>Professional Engineer (PE)</th>
<th>Engineer (EI)</th>
<th>Senior CAD Designer</th>
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Kimley-Horn and Associates, Inc.

City of DeBary

10/16/2021
PROJECT PROPOSAL

Date: November 15, 2021
Client: Kimley-Horn
Project Type: Offsite Route / Topographic Surveys
Project Name: Debary Stormwater Study
Prepared By: James Rickman, P.S.M., Vice President / Executive Director of Land
Phone: 407.654.5355. Ext. 102
Email: Jim@allen-company.com
November 15, 2021

Kimley-Horn
116 South Kentucky Avenue
Lakeland, FL 33801
Attn: Katie Gleason - Katie.Gleason@kimley-horn.com

RE: Debary Stormwater Study - Letter of Agreement - Exhibit A (20210935-1)

Katie Gleason:

We appreciate your consideration of ALLEN & COMPANY, INC. to provide professional Land Surveying services for the above referenced project. These services will include items listed on Exhibit “A” to be billed Lump Sum as shown on Exhibit “A”, attached, plus out-of-pocket expenses incurred on the client’s behalf. Also, included in this contract are the attached “Standard Provisions of Agreement for Professional Services”.

The survey will be prepared in accordance with the minimum technical standards for surveys as set forth in Chapter 5J-17 Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

The following additional provisions are included in this contract:

1. The terms of this agreement shall be valid for client acceptance for a period of sixty (60) days from the date of execution by Allen & Company, Inc. after which time this contract offer becomes null and void if not accepted formally (evidenced by receipt of an executed copy of this document).

2. This agreement may be terminated by either party within fifteen (15) days written notice. In the event of termination, Allen & Company, Inc. shall be compensated to the date of termination, including direct expenses then due.

3. All rates and fees quoted in this document shall be effective for a period of twelve (12) months, after which time they may be renegotiated with the client.
4. All original documents shall be retained by Allen & Company, Inc. and will remain their property. This information is proprietary and will not be shared with others without prior written consent. The client will be provided with reproducible copies of all original documents upon request, and at client expense.

5. The client will pay invoices upon receipt and understands interest charges of 1.5% per month will be applied to any unpaid balance. Allen & Company, Inc. may elect to stop work until payment is received. If work is stopped for thirty (30) days or more, Allen & Company, Inc. may be compensated for start-up costs when work resumes.

6. Upon client request, we will contract and/or coordinate with applicable transportation, environmental, geotechnical, and engineering consultants, and will rely upon their work; however, Allen & Company, Inc. assumes no liability for the accuracy of their work.

Thank you for this opportunity and we look forward to working with you on this exciting new project. Please sign, date and return a copy of this agreement as your authorization to proceed with these professional services. Should you have any questions, please do not hesitate to call.

Sincerely,

ALLEN & COMPANY, INC.

James Rickman
James L. Rickman P.S.M. Vice President

ACCEPTED BY (Sign & Print): ___________________________________________ DATE: ______________
Customer Information:
Kimley-Horn
116 South Kentucky Avenue
Lakeland, FL 33801

Quote Description:

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<tr>
<th>DESCRIPTION</th>
<th>CONTRACT AMOUNT</th>
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</thead>
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<td>1. Offsite Route and Topographic Survey of Group A Drainage Improvements — Sites 13, 14, 15 &amp; 19. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$17000.00</td>
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<td>2. Offsite Route and Topographic Survey of Group B Drainage Improvements — Sites 2 through 6. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$20000.00</td>
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<td>3. Offsite Route and Topographic Survey of Group C Drainage Improvements — Sites 8 &amp; 9. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$10000.00</td>
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<td>4. Offsite Route and Topographic Survey of Group D Drainage Improvements — Sites 12, 18 &amp; 20. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
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<td>5. Offsite Route and Topographic Survey of Group E Drainage Improvements — Sites 16, 17, 23 &amp; 27. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
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<td>6. Offsite Route and Topographic Survey of Benson Junction Road Drainage Improvements — Site 10 – Option A. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$13000.00</td>
</tr>
<tr>
<td>7. Offsite Route and Topographic Survey of Benson Junction Road Drainage Improvements — Site 10 – Option B. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$10000.00</td>
</tr>
</tbody>
</table>

$125,500.00

QUESTIONS OR COMMENTS?
16 E Plant Street, Winter Garden, FL 34787 • Phone 407.654.5355 • Fax: 407.654.5356 • Email: proposals@allen-company.com

www.alen-company.com
If you have any questions or comments concerning this proposal exhibit, please email proposals@allen-company.com
• Allen & Company, Inc. will provide all survey services on work described herein.

• Allen & Company, Inc. will utilize 2D GPR to scan for utilities and EM Equipment to locate utilities where access to utilities is available.

• A Sunshine 811 "LOCATE" ticket will be requested for the areas described to determine the utility providers within the project limits and to notify them of the request for coordination with the Allen & Company, Inc. utility locator.

• Allen & Company, Inc. approximate locate area is outlined in red on the attached image. The exact locate area will need to be designated at time of work.

• Allen & Company, Inc. will use paint and flags to mark located utilities and will provide a technician’s field drawing of the located utilities.

• Allen & Company, Inc.'s scope of services does not include the locating of abandoned utilities that are no longer locatable, vacant conduits, gravity sewer, storm lines, small irrigation lines, and low voltage lines. (Unless otherwise specified at an additional cost).

• Client is responsible for ensuring that all electrical and lighting systems are energized and that all lights with outdoor light sensor systems are in use at time of locate work.

• If available, Allen & Company, Inc. requests that client provide as-builts, engineering prints, etc. of existing utilities.

• GPR Scans can only be performed in accessible areas that are clear of obstacles such as construction materials, pipes, vehicles, machinery, dirt/materials mounds, landscaping, trees, uneven terrain, water, etc.

• If needed, Allen & Company, Inc. can provide a quote for 3D GPR that typically provides additional/more comprehensive data.
(A) LIMITS OF GPR AND ELECTROMAGNETIC SERVICES: If Services are Provided
ACI will make every effort to horizontally detect the underground utilities, objects or voids
described in the Scope of Work or as requested at the time of work within the designated work
area(s). However, ACI cannot mark utilities/objects/voids that are undetectable. Therefore, ACI
cannot guarantee that all subsurface utilities/objects/voids will be accounted for. Locate
limitations that ACI will not be held liable for include but are not limited to:

- **GROUND PENETRATING RADAR (GPR):**
  - GPR investigations are highly site specific and can be limited by attenuation of GPR signals by
  subsurface materials.
  - GPR investigations are limited by uneven terrain conditions, high grass (over 3”), bushes, trees, debris,
  etc.
  - All vertically stacked utilities/objects may not be detected since GPR signals are reflected by the top
  most utility/object.
  - Some utilities/objects may not return a reflected signal to the GPR receiver.
  - GPR scans cannot be made immediately next to buildings/objects due to equipment restrictions.
  - Pipes with little or no liquid content at time of locate work may not be detected with GPR.
- Locations of existing utilities scanned by ground penetrating radar (GPR) are to be deemed
  approximate in nature and in no way are to be construed as exact. Allen & Company, Inc. (ACI) will
  not be held responsible for damage to existing utilities located by GPR scanning.

- **ELECTROMAGNETIC LOCATING:**
  - The number of access points within designated locate area(s) may be limited or non-existent.
  - Utility or property owner may restrict or deny the use of utility access points.
  - Utility may not adequately carry the imposed current from the electromagnetic locate equipment.
  - Fiber & other non-metallic lines with no or non-working tracer wire are untoneable with
    electromagnetic locate equipment.
- Locations of existing utilities designated by Electromagnetic Equipment (EM) are to be deemed
  approximate in nature and in no way are to be construed as exact. Allen & Company, Inc. (ACI) will not
  be held responsible for damage to existing utilities located by EM equipment.
B) DESIGN ENGINEER and CONTRACTORS
Due to locate limitations, the client’s/owner’s Design Engineer is expected to gather and identify existing facility information from various prints and underground facility owners/operators to confirm that no other subsurface utilities/objects are present in the project area, and Contractors are responsible to abide by Florida Statutes 556.106 - Sunshine 811.

C) MACHINE DEPTHS: (If Service is provided)
Machine depths are approximate readings, are not guaranteed depths, are provided for informational purposes only, and should not be relied upon for any type of subsurface work. ACI will not accept any responsibility for actions taken based on provided machine depths.

D) VERTICAL EXCAVATION (DIRT SOFT DIG): Information/Limitations: (If Service is provided)
Soft Digs are made within grassed or otherwise unpaved surface conditions to a maximum depth of approximately 10 feet to determine the depth of the utility/object. If requested, ACI also will provide the size and material type.
- Soft Dig vertical depth measurements are made from the top of each exposed utility/object to the ground surface.
- The vertical depth range and visual inspection ability is dependent on events such as ground water level.
- Client must obtain/provide ACI with any required soft dig permits before soft dig work is performed. Client will be responsible for any permitting soft dig fines assessed by governing agency.

E) CORE BORE WITH VERTICAL EXCAVATION (DIRT SOFT DIG): Information/Limitations: (If Service is provided)
A Core Bore is made in asphalt or concrete to vertically expose a utility/object to determine the depth of the utility/object from the top of the utility/object to the pavement surface.
- Vertical Excavation limits apply (See Item D).
- Test hole will be backfilled with like materials compacted in 6" lifts or with a flowable fill mixture.
- The current asphalt thickness will be replaced with double asphalt thickness.
- Asphalt/Concrete Core Bore Permits are to be furnished to ACI by the client prior to work being scheduled. Client is responsible for cost of all permits, MOT, Traffic Control, and any permitting fines assessed by governing agency.

F) CERTIFICATE OF INS (COI): New/Revised COI Requests
- Client COI requirements must be provided to ACI prior to the Authorization to Proceed being issued.
- ACI will invoice client for all costs associated with client COI requirements that incur billable charges to ACI.
The Client and Surveyor agree that the following Provisions shall be a part of their agreement:

1. Neither the Client nor Surveyor shall assign its interest in this agreement without the written consent of the other.

2. All agreements on Surveyor's part are contingent upon, and Surveyor shall not be responsible for damages or be in default or be deemed to be in default by reason of: delays in performance by reason of strikes, lockouts, accidents, acts of God and other delays unavoidable or beyond Surveyor’s reasonable control, or due to shortages or unavailability of labor at established area wage rate or delays caused by failure of Client or Client's agents to furnish information or to approve or disapprove Surveyor's work promptly, or due to late or slow, or faulty performance by Client, other contractors or governmental agencies, the performance of whose work is precedent to or concurrent with the performance of Surveyor's work, in the case of the happening of any such cause of delay, the time of completion shall be extended accordingly.

3. In the event that any changes are made in the plans and specifications by the Client or persons other than Surveyor which affect Surveyor's work, any and all liability arising out of such changes is waived as against Surveyor and the Client assumes full responsibility for such changes unless Client has given Surveyor prior notice and has received from Surveyor written consent for such changes.

4. Surveyor is not responsible, and liability is waived by client as against Surveyor, for use by Client or any other person of any plans or drawings not signed by Surveyor.

5. All tracings, survey notes, and other original documents are instruments of service and shall be the property of Surveyor, except whereby law or precedent these documents become public property.

6. Surveyor's liability to the Client for injury or damage to persons or property arising out of work performed for the Client and for which legal liability may be found to rest upon Surveyor, other than for professional errors and omissions, will be limited to Surveyor's general liability insurance coverage. For any damage on account of any error, omission or other professional negligence, Surveyor's liability will be limited to a sum not-to exceed Surveyor's fee.

7. Fees and all other charges will be billed monthly as the work progresses and the net amount shall be due at the time of billing.

8. Interest 1-1/2% per month (but not exceeding the maximum rate allowable by law) will be payable on any amounts not paid within 30 days of the billing date, payment thereafter to be applied first to accrued interest and then to the principal unpaid amount. Any attorney's fees or other costs incurred in collecting any delinquent amount shall be paid by the Client.

9. The Client shall pay the costs of checking inspection fees, zoning and annexation application fees, assessment fees, soils Surveying fees, soils testing fees, aerial topography fees, and all other fees, permits, bond premiums, title company charges, blueprints and reproductions, and all other charges not specifically covered by the terms of this agreement.

10. In the event all or any portion of the work prepared or partially prepared by Surveyor is suspended, abandoned, or terminated, the Client shall pay Surveyor for the work performed on an hourly basis, not to exceed any maximum contract amount specified herein.

INITIALS ____________

16 E Plant Street, Winter Garden, FL 34787 • Phone 407.654.5355 • Fax: 407.654.5356 • Email: proposals@allen-company.com
11. Any Opinion of the Construction Cost prepared by Surveyor represents his Judgment as a design professional and is supplied for the general guidance of the Client. Since Surveyor has no control over the cost of labor and material, or over competitive bidding or market conditions, Surveyor does not guarantee the accuracy of such opinions as compared to contractor bids or actual cost to the Client.

12. The Client agrees that in accordance with generally accepted construction practices, the construction contractor will be required to assume sole and complete responsibility for Job site conditions during the course of construction of the project, Including safety of all persons and property and that this requirement shall be made to apply continuously and not be limited to normal working hours.

13. In the performance of its professional services, Surveyor will use that degree of care and skill ordinarily exercised under similar conditions in similar localities and no other warranties express or implied are made or intended in any of Surveyor’s proposals, contracts or reports. The Client agrees to defend, indemnify, and hold harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability proximately arising from the sole negligence of Surveyor.

14. In the event the Client fails to pay Surveyor within sixty (60) days after invoices are rendered, then Client agrees that Surveyor shall have the right to consider said default a total breach of this agreement and the duties of Surveyor under this agreement terminated upon five (5) days written notice. This agreement may be terminated by either Client or Surveyor upon thirty (30) days written notice in the event of substantial failure of the other party to perform in accordance with the terms of this agreement. Client expressly agrees to hold Surveyor harmless from any liability arising out of Surveyor’s termination of its services hereunder due to Client’s failure to perform and/or pay in accordance with the provisions of this agreement. In the event of termination of this agreement, Client shall then promptly pay Surveyor for all of the fees, charges and services performed by Surveyor in accordance with the compensation arrangements under this agreement or on an agreed hourly basis.

15. The Client agrees not to solicit or be solicited by any employee, former employee or subconsultant of Allen & Company, Inc. for employment for this project or any other Client’s project for one year after completion and/or termination of Allen & Company services without written consent. In event Client fails to adhere by said agreement, then Client will be billed for one year at the employee’s billable rate.

16. Should litigation be necessary to enforce any term or provision of this agreement, or to collect any portion of the amount payable under this agreement, then all litigation and collection expenses, witness fees and court costs, and attorney’s fees shall be paid to the prevailing party.

17. Should any provision herein be found or deemed to be invalid, this agreement shall be construed as not containing such provisions and all other provisions which are otherwise lawful shall remain in full force and effect, and to this end the provisions of this agreement are declared to be severable.

18. Services provided within this agreement are for the exclusive use of the Client.

19. There are no understandings or agreements except as herein expressly stated.

20. All "Standard Hourly Rates" will be maintained for 60 days from the date the contract is signed.

INITIALS ________
## DeBary Stormwater Projects
### CEI Services

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<thead>
<tr>
<th>Site</th>
<th>Senior Inspector</th>
<th>Project Administrator</th>
<th>Senior Project Engineer</th>
</tr>
</thead>
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<tr>
<td>West Highbanks Road</td>
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<tr>
<td><strong>Group B, Site 2</strong></td>
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<tr>
<td><strong>Group B, Site 3</strong></td>
<td>8</td>
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<tr>
<td><strong>Group B, Site 4</strong></td>
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<tr>
<td><strong>Group B, Site 5</strong></td>
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<tr>
<td><strong>Group B, Site 6</strong></td>
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<td></td>
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<tr>
<td>James Pond Pump Sta.</td>
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<tr>
<td><strong>Group C, Site 8</strong></td>
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<tr>
<td><strong>Group C, Site 9</strong></td>
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<tr>
<td>Benson Junction Flooding</td>
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<tr>
<td>Alexander Island</td>
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<td><strong>Group D, Site 12</strong></td>
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<td><strong>Group A, Site 13</strong></td>
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<td><strong>Group A, Site 14</strong></td>
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<td><strong>Group A, Site 15</strong></td>
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<td><strong>Group E, Site 16</strong></td>
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<td></td>
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<tr>
<td><strong>Group E, Site 17A</strong></td>
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<tr>
<td><strong>Group D, Site 18</strong></td>
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<tr>
<td><strong>Group D, Site 19</strong></td>
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<tr>
<td><strong>Group D, Site 20</strong></td>
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<td></td>
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<tr>
<td>Bill Keller Park</td>
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<tr>
<td><strong>Bill Keller Park</strong></td>
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<tr>
<td><strong>Group E, Site 23</strong></td>
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<tr>
<td>286 DeBary Drive</td>
<td>10</td>
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<td>338 Gardenia Avenue</td>
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<tr>
<td>Tropical Lagoon Dredging</td>
<td>14</td>
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<td><strong>Group E, Site 27</strong></td>
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</tr>
<tr>
<td><strong>Total Hours</strong></td>
<td>300</td>
<td>30</td>
<td>9</td>
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</tbody>
</table>

Note: Project Administrator Hours based on 10% of Senior Inspector hours  
Senior Project Engineer Hours based on 3% of Senior Inspector Hours

### Total Costs

<table>
<thead>
<tr>
<th>Position</th>
<th>Hours</th>
<th>Billing Rate</th>
<th>Total Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Project Engineer</td>
<td>9</td>
<td>$152.86</td>
<td>$1,375.74</td>
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<tr>
<td>Project Administrator</td>
<td>30</td>
<td>$104.22</td>
<td>$3,126.60</td>
</tr>
<tr>
<td>Senior Inspector</td>
<td>300</td>
<td>$77.87</td>
<td>$23,361.00</td>
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<tr>
<td>Lab Materials Testing</td>
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<td>$1,000.00</td>
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<tr>
<td><strong>Grand Total</strong></td>
<td></td>
<td></td>
<td>$28,863.34</td>
</tr>
</tbody>
</table>

Hours are estimated based on part time inspection of each site  
Lab Materials testing is for Proctors etc. as required

Group B Total Hours: 42 hrs  
10% Project Administrator = 5 hrs  
3% Senior Project Engineer = 2 hrs  
42 hrs x $77.87 = $3,270.51  
5 hrs x $104.22 = $521.10  
2 hrs x $152.86 = $305.72  
1/5 Lab Material Testing = $200  
Total Group B = $4,297.36
INDIVIDUAL PROJECT ORDER NUMBER 5

February 24, 2022

Describing a specific agreement between Kimley-Horn and Associates, Inc. ("Kimley-Horn") and The City of DeBary (the "Client" or the "City") in accordance with the terms of the Continuing Contract for Professional Engineering Services ("Contract") dated January 6, 2021, which is incorporated herein by reference.

Identification of Project:

Project: City of DeBary Stormwater Improvement Project: Group C (Sites 8 and 9)

Site 8: 20 Catalina Drive
Site 9: 60 Azalea Drive

Project Manager: Brent A. Lenzen, P.E.

Project Understanding:

This Individual Purchase Order (IPO) identifies the scope, schedule, and fee for engineering services associated with Group C of the City of DeBary Drainage Improvement Project. Group C include stormwater improvement sites 8 and 9.

Stormwater Improvement Site 8
Requires engineering services related to existing flooding occurring in front of the residential property of 20 Catalina Drive. Low areas occur throughout this problem area with no relief or clear path to existing drainage outfalls.

Stormwater Improvement Site 9
Requires engineering services related to existing flooding occurring between the residential properties of 58 and 60 Azalea Drive. A low area has been identified between the properties and has no relief or clear path to existing drainage outfalls.

Kimley-Horn will provide engineering services associated with the design and construction plans to address the issues described above.

Specific Scope of Services:

Task 1 – Drainage Design

Kimley-Horn will analyze the existing drainage system and provide a brief technical memorandum of findings to identify options to resolve the maintenance problems within the Group C site limits. The memorandum will document field reviews, flooding reports, and drainage calculations; and provide recommended solution(s) and sketches. This task includes one (1) field review during a storm event and a meeting with the City Representative.

For site 8 and 9 of Group C, a description of these services consists of the following:

- Site 8
  - Analyze existing drainage patterns at 20 Catalina Drive
  - Proposed inlet and pipe system to collect water in low areas adjacent to 20 Catalina Drive and connect to the existing storm sewer system along Seminole Drive through an easement between 20 and 22 Catalina Drive and 21 and 23 Seminole Drive
Kimley-Horn

- Site 9
  - Analyze existing drainage patterns at 60 Azalea Dr
  - Regrade existing swales between 58 and 60 Azalea Dr and provide exfiltration trench to help alleviate flooding and to avoid offsite discharge to private properties

Kimley-Horn will design a drainage system to help address the above stated issues. This design is limited to the above stated services for each site.

Task 2 – Construction Plans

Based on the designs identified in Task 1, Kimley-Horn will prepare a plan set for Group C including construction plans for the drainage improvements that will include sites 8 and 9. The plan sheets will be prepared on 11”x17” half size sheets. Kimley-Horn will submit 30% plans to the City for review and comment prior to developing final plans for submittal to the City. Kimley-Horn will respond to one (1) round of comments from the City. It is anticipated that Temporary Traffic Control Plans (TTCp) will be prepared by the Contractor and is not included this Task.

For each site included in Group C, Kimley-Horn will conduct one (1) coordination meeting with utility owners to coordinate impact of the proposed improvements on their facilities. Kimley-Horn will submit construction plans to affect utility companies once during the design phase in an effort to identify conflicts for relocation from the respective utilities and submit them to the City for inclusion in the bid documents.

This task does not include utility design and if required, can be performed as an additional service.

The construction plans set will include one (1) of the following items:
- Key Sheet
- General Notes
- Project Layout Sheet

The construction plans set will also include one (1) of the following items for each site contained in Group C for each of the sites 8 and 9:
- Plan/Profile Sheets
- Cross Sections
- Erosion Control Plans
- Construction Details

Task 3 – Permitting Coordination

It is anticipated that the drainage improvements will not require a St. Johns River Water Management District (SJRWMD) Environmental Resource Permit (ERP). Kimley-Horn will prepare a permit exemption verification application. Kimley-Horn will respond to one (1) request for additional information from the SJRWMD. Permitting services beyond the requirements outlined above will require additional scope and fees.

Task 4 – Survey and Mapping Services

Kimley-Horn will retain the services of Allen & Company, Inc. to perform the survey for area per site stated below. Right of way survey will include preparation of depicting computed existing/apparent right-of-way lines within the project limits. Refer to attached subconsultant proposal for additional information.

Task 5 – Bid Assistance Services

Kimley-Horn will prepare one (1) opinion of probable construction cost and one (1) contractor bid tabulation form for each site included in Group C for use by the City during the bidding process. Kimley-Horn will attend one (1) pre-bid meeting and provide input as directed by the City for each site included in Group C. Kimley-Horn will prepare responses to questions submitted by the contractors to the City during the bidding period.
Task 6 – Construction Phase Services

Kimley-Horn will review drainage structure shop drawings submitted by the Contractor in accordance with standard FDOT procedures. The City will be responsible for the receipt, distribution, and disposition of all contractor submittals, including project logs. The term "shop drawings" include all drawings, diagrams, illustrations, transportation procedures, manuals, and design calculations submitted by the Contractor to define some portion of the project.

Kimley-Horn will provide written responses to the City for up to two (2) Contractor Requests for Information (RFI) for each site included in Group C.

For each site included in Group C, Kimley-Horn will attend up to two (2) progress meetings during construction as requested by the City. This task does not include engineering inspection services.

Task 7 – Construction Engineering and Inspection (CEI)

Kimley-Horn has retained the services of SAI Consulting Engineers, Inc. to provide Construction Engineering and Inspection ("CEI") Services. This task includes the following items:

- Part-time field inspection services
- Daily work reports for days our staff is on-site
- On-Site materials testing services (Densities, concrete tests etc.)
- Laboratory materials testing (earthwork proctors etc.) through a sub-consultant
- Attend project meetings
- Contractor’s schedule review

SAI’s fee breakdown is attached at the back of this scope for reference.

Deliverables
Kimley-Horn will provide the following deliverables associated with this project:

- Construction Plans
- Technical memorandum
- SJRWMD Permit Exemption

Additional Services

The following services are not included in this IPO but may be performed if authorized by the City. Payment for these additional services will be agreed upon prior to their performance.

- Attendance at meetings in addition to those noted in the scope of services
- Certified Arborist evaluation for tree preservation
- Temporary Traffic Control Plans
- Subsurface utility verification
- Geotechnical services
- Utility Plans

Information Provided By Client:

The City will provide the following information, upon which Kimley-Horn can rely:

- Available right of way data
- Available record or as-built plans
- Available permits
- Data regarding the existing road conditions
- Lidar / Contours
Schedule:
Tasks 1-5 are anticipated to be completed within 120 calendar days of notice to proceed. The completion of Tasks 6 and 7 will depend on the construction schedule.

Fee and Billing:
Kimley-Horn will complete the above scope of services for the lump sum fees detailed below, inclusive of office overhead expenses. Services provided under this will be invoiced on a monthly basis. All invoices will include a description of services provided. Approval from the City shall be required for all invoiced travel expenses and meetings. Fee breakdown tables for the lump sum tasks noted below have been included in Appendix A for reference.

Group C Fee Breakdown

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
<th>Lump Sum Fee</th>
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<tr>
<td>Task 1</td>
<td>Drainage Design</td>
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<td>Task 2</td>
<td>Construction Plans</td>
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<td>Task 3</td>
<td>Permitting Coordination</td>
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<td>Task 4</td>
<td>Survey and Mapping Services</td>
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<td>Task 5</td>
<td>Bid Assistance Services</td>
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<td>Task 6</td>
<td>Construction Phase Services</td>
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<td>Task 7</td>
<td>Construction Engineering and Inspection (CEI)</td>
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<tr>
<td></td>
<td><strong>Sub-Total (Labor)</strong></td>
<td><strong>$53,390</strong></td>
</tr>
</tbody>
</table>

Attachments: Appendix A

Accepted:
THE CITY OF DEBARY, FLORIDA

By: _______________________

Title: _______________________

Date: _______________________

Kimley-Horn and Associates, Inc.

By: _______________________

Brent A. Lenzen, P.E., Associate/Assistant Secretary

Date: February 24, 2022
APPENDIX A

LUMP SUM FEE BREAKDOWN
## APPENDIX A - CONSULTANT'S COMPENSATION PROPOSAL
### CIVIL BREAKDOWN OF FEES

<table>
<thead>
<tr>
<th>Rule (Hours)</th>
<th>Principal</th>
<th>Senior Vice President</th>
<th>Senior Engineer</th>
<th>Senior Project Manager</th>
<th>Professional Project Engineer (PE)</th>
<th>Engineer (SE)</th>
<th>Senior CAD Designer</th>
<th>CAD Technicians</th>
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PROJECT PROPOSAL

Date: November 15, 2021
Client: Kimley-Horn
Project Type: Offsite Route / Topographic Surveys
Project Name: Debary Stormwater Study
Prepared By: James Rickman, P.S.M., Vice President / Executive Director of Land
Phone: 407.654.5355. Ext. 102
Email: Jim@allen-company.com
November 15, 2021

Kimley-Horn
116 South Kentucky Avenue
Lakeland, FL 33801
Attn: Katie Gleason - Katie.Gleason@kimley-horn.com

RE: Debary Stormwater Study - Letter of Agreement - Exhibit A (20210935-1)

Katie Gleason:

We appreciate your consideration of ALLEN & COMPANY, INC. to provide professional Land Surveying services for the above referenced project. These services will include items listed on Exhibit “A” to be billed Lump Sum as shown on Exhibit “A”, attached, plus out-of-pocket expenses incurred on the client’s behalf. Also, included in this contract are the attached “Standard Provisions of Agreement for Professional Services”.

The survey will be prepared in accordance with the minimum technical standards for surveys as set forth in Chapter 5J-17 Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

The following additional provisions are included in this contract:

1. The terms of this agreement shall be valid for client acceptance for a period of sixty (60) days from the date of execution by Allen & Company, Inc. after which time this contract offer becomes null and void if not accepted formally (evidenced by receipt of an executed copy of this document).

2. This agreement may be terminated by either party within fifteen (15) days written notice. In the event of termination, Allen & Company, Inc. shall be compensated to the date of termination, including direct expenses then due.

3. All rates and fees quoted in this document shall be effective for a period of twelve (12) months, after which time they may be renegotiated with the client.
4. All original documents shall be retained by Allen & Company, Inc. and will remain their property. This information is proprietary and will not be shared with others without prior written consent. The client will be provided with reproducible copies of all original documents upon request, and at client expense.

5. The client will pay invoices upon receipt and understands interest charges of 1.5% per month will be applied to any unpaid balance. Allen & Company, Inc. may elect to stop work until payment is received. If work is stopped for thirty (30) days or more, Allen & Company, Inc. may be compensated for start-up costs when work resumes.

6. Upon client request, we will contract and/or coordinate with applicable transportation, environmental, geotechnical, and engineering consultants, and will rely upon their work; however, Allen & Company, Inc. assumes no liability for the accuracy of their work.

Thank you for this opportunity and we look forward to working with you on this exciting new project. Please sign, date and return a copy of this agreement as your authorization to proceed with these professional services. Should you have any questions, please do not hesitate to call.

Sincerely,

ALLEN & COMPANY, INC.

James Rickman
James L. Rickman P.S.M. Vice President

ACCEPTED BY (Sign & Print): ___________________________ DATE: ________________
### EXHIBIT A

**16 E. Plant Street**  
Winter Garden, FL 34787  
Phone (407) 654-5355 • Fax: (407) 654-5356  
Email: proposals@allen-company.com

Date: November 15, 2021  
Proposal: 20210935-1 - Debary Stormwater Study  
For: Katie Gleason

Customer Information:  
Kimley-Horn  
116 South Kentucky Avenue  
Lakeland, FL 33801

#### Quote Description:

**20210935-1 - Debary Stormwater Study**

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<td>1. Offsite Route and Topographic Survey of Group A Drainage Improvements – Sites 13, 14, 15 &amp; 19. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$17000.00</td>
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<td>2. Offsite Route and Topographic Survey of Group B Drainage Improvements – Sites 2 through 6. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
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<td>3. Offsite Route and Topographic Survey of Group C Drainage Improvements – Sites 8 &amp; 9. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
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<td>4. Offsite Route and Topographic Survey of Group D Drainage Improvements – Sites 12, 18 &amp; 20. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
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<td>5. Offsite Route and Topographic Survey of Group E Drainage Improvements – Sites 16, 17, 23 &amp; 27. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
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<td>6. Offsite Route and Topographic Survey of Benson Junction Road Drainage Improvements – Site 10 – Option A. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
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<td>7. Offsite Route and Topographic Survey of Benson Junction Road Drainage Improvements – Site 10 – Option B. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
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**Total:** $125,500.00

**Questions or Comments?**  
16 E Plant Street, Winter Garden, FL 34787 • Phone 407.654.5355 • Fax: 407.654.5356 • Email: proposals@allen-company.com

www.allen-company.com
If you have any questions or comments concerning this proposal exhibit, please email proposals@allen-company.com
• Allen & Company, Inc. will provide all survey services on work described herein.

• Allen & Company, Inc. will utilize 2D GPR to scan for utilities and EM Equipment to locate utilities where access to utilities is available.

• A Sunshine 811 "LOCATE" ticket will be requested for the areas described to determine the utility providers within the project limits and to notify them of the request for coordination with the Allen & Company, Inc. utility locator.

• Allen & Company, Inc. approximate locate area is outlined in red on the attached image. The exact locate area will need to be designated at time of work.

• Allen & Company, Inc. will use paint and flags to mark located utilities and will provide a technician's field drawing of the located utilities.

• Allen & Company, Inc.'s scope of services does not include the locating of abandoned utilities that are no longer locatable, vacant conduits, gravity sewer, storm lines, small irrigation lines, and low voltage lines. (Unless otherwise specified at an additional cost).

• Client is responsible for ensuring that all electrical and lighting systems are energized and that all lights with outdoor light sensor systems are in use at time of locate work.

• If available, Allen & Company, Inc. requests that client provide as-buils, engineering prints, etc. of existing utilities.

• GPR Scans can only be performed in accessible areas that are clear of obstacles such as construction materials, pipes, vehicles, machinery, dirt/materials mounds, landscaping, trees, uneven terrain, water, etc.

• If needed, Allen & Company, Inc. can provide a quote for 3D GPR that typically provides additional/more comprehensive data.
(A) LIMITS OF GPR AND ELECTROMAGNETIC SERVICES: If Services are Provided
ACI will make every effort to horizontally detect the underground utilities, objects or voids
described in the Scope of Work or as requested at the time of work within the designated work
area(s). However, ACI cannot mark utilities/objects/voids that are undetectable. Therefore, ACI
cannot guarantee that all subsurface utilities/objects/voids will be accounted for. Locate
limitations that ACI will not be held liable for include but are not limited to:

- GROUND PENETRATING RADAR (GPR):
  - GPR investigations are highly site specific and can be limited by attenuation of GPR signals by
    subsurface materials.
  - GPR investigations are limited by uneven terrain conditions, high grass (over 3"), bushes, trees, debris,
    etc.
  - All vertically stacked utilities/objects may not be detected since GPR signals are reflected by the top
    most utility/object.
  - Some utilities/objects may not return a reflected signal to the GPR receiver.
  - GPR scans cannot be made immediately next to buildings/objects due to equipment restrictions.
  - Pipes with little or no liquid content at time of locate work may not be detected with GPR.
  - Locations of existing utilities scanned by ground penetrating radar (GPR) are to be deemed
    approximate in nature and in no way are to be construed as exact. Allen & Company, Inc. (ACI) will
    not be held responsible for damage to existing utilities located by GPR scanning.

- ELECTROMAGNETIC LOCATING:
  - The number of access points within designated locate area(s) may be limited or non-existent.
  - Utility or property owner may restrict or deny the use of utility access points.
  - Utility may not adequately carry the imposed current from the electromagnetic locate equipment.
  - Fiber & other non-metallic lines with no or non-working tracer wire are untoneable with
    electromagnetic locate equipment.
  - Locations of existing utilities designated by Electromagnetic Equipment (EM) are to be deemed
    approximate in nature and in no way are to be construed as exact. Allen & Company, Inc. (ACI) will not
    be held responsible for damage to existing utilities located by EM equipment.
(B) DESIGN ENGINEER and CONTRACTORS
Due to locate limitations, the client's/owner's Design Engineer is expected to gather and identify existing facility information from various prints and underground facility owners/operators to confirm that no other subsurface utilities/objects are present in the project area, and Contractors are responsible to abide by Florida Statutes 556.106 - Sunshine 811.

(C) MACHINE DEPTHS: (If Service is provided)
Machine depths are approximate readings, are not guaranteed depths, are provided for informational purposes only, and should not be relied upon for any type of subsurface work. ACI will not accept any responsibility for actions taken based on provided machine depths.

(D) VERTICAL EXCAVATION (DIRT SOFT DIG): Information/Limitations: (If Service is provided)
Soft Digs are made within grassed or otherwise unpaved surface conditions to a maximum depth of approximately 10 feet to determine the depth of the utility/object. If requested, ACI also will provide the size and material type.
- Soft Dig vertical depth measurements are made from the top of each exposed utility/object to the ground surface.
- The vertical depth range and visual inspection ability is dependent on events such as ground water level.
- Client must obtain/provide ACI with any required soft dig permits before soft dig work is performed. Client will be responsible for any permitting soft dig fines assessed by governing agency.

(E) CORE BORE WITH VERTICAL EXCAVATION (DIRT SOFT DIG): Information/Limitations: (If Service is provided)
A Core Bore is made in asphalt or concrete to vertically expose a utility/object to determine the depth of the utility/object from the top of the utility/object to the pavement surface.
- Vertical Excavation limits apply (See Item D).
- Test hole will be backfilled with like materials compacted in 6" lifts or with a flowable fill mixture.
- The current asphalt thickness will be replaced with double asphalt thickness.
- Asphalt/Concrete Core Bore Permits are to be furnished to ACI by the client prior to work being scheduled. Client is responsible for cost of all permits, MOT, Traffic Control, and any permitting fines assessed by governing agency.

(F) CERTIFICATE OF INS (COI): New/Revised COI Requests
- Client COI requirements must be provided to ACI prior to the Authorization to Proceed being issued.
- ACI will invoice client for all costs associated with client COI requirements that incur billable charges to ACI.
The Client and Surveyor agree that the following Provisions shall be a part of their agreement:

1. Neither the Client nor Surveyor shall assign its interest in this agreement without the written consent of the other.

2. All agreements on Surveyor’s part are contingent upon, and Surveyor shall not be responsible for damages or be in default or be deemed to be in default by reason of: delays in performance by reason of strikes, lockouts, accidents, acts of God and other delays unavoidable or beyond Surveyor’s reasonable control, or due to shortages or unavailability of labor at established area wage rate or delays caused by failure of Client or Client’s agents to furnish information or to approve or disapprove Surveyor’s work promptly, or due to late or slow, or faulty performance by Client, other contractors or governmental agencies, the performance of whose work is precedent to or concurrent with the performance of Surveyor’s work, in the case of the happening of any such cause of delay, the time of completion shall be extended accordingly.

3. In the event that any changes are made in the plans and specifications by the Client or persons other than Surveyor which affect Surveyor’s work, any and all liability arising out of such changes is waived as against Surveyor and the Client assumes full responsibility for such changes unless Client has given Surveyor prior notice and has received from Surveyor written consent for such changes.

4. Surveyor is not responsible, and liability is waived by client as against Surveyor, for use by Client or any other person of any plans or drawings not signed by Surveyor.

5. All tracings, survey notes, and other original documents are instruments of service and shall be the property of Surveyor, except whereby law or precedent these documents become public property.

6. Surveyor’s liability to the Client for injury or damage to persons or property arising out of work performed for the Client and for which legal liability may be found to rest upon Surveyor, other than for professional errors and omissions, will be limited to Surveyor’s general liability insurance coverage. For any damage on account of any error, omission or other professional negligence, Surveyor’s liability will be limited to a sum not to exceed Surveyor’s fee.

7. Fees and all other charges will be billed monthly as the work progresses and the net amount shall be due at the time of billing.

8. Interest 1-1/2% per month (but not exceeding the maximum rate allowable by law) will be payable on any amounts not paid within 30 days of the billing date, payment thereafter to be applied first to accrued interest and then to the principal unpaid amount. Any attorney’s fees or other costs incurred in collecting any delinquent amount shall be paid by the Client.

9. The Client shall pay the costs of checking inspection fees, zoning and annexation application fees, assessment fees, soils Surveying fees, soils testing fees, aerial topography fees, and all other fees, permits, bond premiums, title company charges, blueprints and reproductions, and all other charges not specifically covered by the terms of this agreement.

10. In the event all or any portion of the work prepared or partially prepared by Surveyor is suspended, abandoned, or terminated, the Client shall pay Surveyor for the work performed on an hourly basis, not to exceed any maximum contract amount specified herein.

INITIALS ___________
11. Any Opinion of the Construction Cost prepared by Surveyor represents his Judgment as a design professional and is supplied for the general guidance of the Client. Since Surveyor has no control over the cost of labor and material, or over competitive bidding or market conditions, Surveyor does not guarantee the accuracy of such opinions as compared to contractor bids or actual cost to the Client.

12. The Client agrees that in accordance with generally accepted construction practices, the construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property and that this requirement shall be made to apply continuously and not be limited to normal working hours.

13. In the performance of its professional services, Surveyor will use that degree of care and skill ordinarily exercised under similar conditions in similar localities and no other warranties express or implied are made or intended in any of Surveyor's proposals, contracts or reports. The Client agrees to defend, indemnify, and hold harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability proximately arising from the sole negligence of Surveyor.

14. In the event the Client fails to pay Surveyor within sixty (60) days after invoices are rendered, then Client agrees that Surveyor shall have the right to consider said default a total breach of this agreement and the duties of Surveyor under this agreement terminated upon five (5) days written notice. This agreement may be terminated by either Client or Surveyor upon thirty (30) days written notice in the event of substantial failure of the other party to perform in accordance with the terms of this agreement. Client expressly agrees to hold Surveyor harmless from any liability arising out of Surveyor's termination of its services hereunder due to Client's failure to perform and/or pay in accordance with the provisions of this agreement. In the event of termination of this agreement, Client shall then promptly pay Surveyor for all of the fees, charges and services performed by Surveyor in accordance with the compensation arrangements under this agreement or on an agreed hourly basis.

15. The Client agrees not to solicit or be solicited by any employee, former employee or subconsultant of Allen & Company, Inc. for employment for this project or any other Client's project for one year after completion and/or termination of Allen & Company services without written consent. In event Client fails to adhere by said agreement, then Client will be billed for one year at the employee's billable rate.

16. Should litigation be necessary to enforce any term or provision of this agreement, or to collect any portion of the amount payable under this agreement, then all litigation and collection expenses, witness fees and court costs, and attorney's fees shall be paid to the prevailing party.

17. Should any provision herein be found or deemed to be invalid, this agreement shall be construed as not containing such provisions and all other provisions which are otherwise lawful shall remain in full force and effect, and to this end the provisions of this agreement are declared to be severable.

18. Services provided within this agreement are for the exclusive use of the Client.

19. There are no understandings or agreements except as herein expressly stated.

20. All "Standard Hourly Rates" will be maintained for 60 days from the date the contract is signed.

INITIALS _________
## DeBary Stormwater Projects
### CEI Services

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<thead>
<tr>
<th>Site</th>
<th>Senior Inspector</th>
<th>Project Administrator</th>
<th>Senior Project Engineer</th>
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Note: Project Administrator Hours based on 10% of Senior Inspector hours
Senior Project Engineer Hours based on 3% of Senior Inspector Hours

### Group C Total Hours:
- 20 hrs
- 10% Project Administrator = 2 hrs
- 3% Senior Project Engineer = 1 hr

- 20 hrs x $77.87 = $1,557.40
- 2 hrs x $104.22 = $208.44
- 1 hr x $152.86 = $152.86
- 1/5 Lab Material Testing = $200
- Total Group C = $2,118.70

### Total Costs

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<td><strong>Grand Total</strong></td>
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Hours are estimated based on part time inspection of each site
Lab Materials testing is for Proctors etc. as required
February 24, 2022

Describing a specific agreement between Kimley-Horn and Associates, Inc. ("Kimley-Horn") and The City of DeBary (the "Client" or the "City") in accordance with the terms of the Continuing Contract for Professional Engineering Services ("Contract") dated January 6, 2021, which is incorporated herein by reference.

Identification of Project:

Project: City of DeBary Stormwater Improvement Project: Group D (Sites 12, 18, and 20)

- Site 12: 218 Lago Vista Street / 123 Sunrise Boulevard
- Site 18: 201-218 Grande Vista Street
- Site 20: 221, 232-234 Agua Vista Street

Project Manager: Brent A. Lenzen, P.E.

Project Understanding:

This Individual Purchase Order (IPO) identifies the scope, schedule, and fee for engineering services associated with Group D of the City of DeBary Drainage Improvement Project. Group D include stormwater improvement sites 12, 18 and 20.

Stormwater Improvement Site 12
Requires engineering services related to existing flooding occurring along both sides of Sunrise Boulevard from Bayou Vista Street to Lago Vista Street, as well as both sides of Lago Vista Street from Sunrise Boulevard north to the existing outfall to the depressional area outfall. Low areas occur throughout this problem area with no relief or clear path to the existing outfall.

Stormwater Improvement Site 18
Requires engineering services related to existing flooding occurring along both sides of Grande Vista Street from the intersection with Plantation Road south to 218 Grande Vista Street. Low areas occur throughout this problem area with no existing outfall.

Stormwater Improvement Site 20
Requires engineering services related to flooding along residential properties of 221, 232-234 Agua Vista Street. An existing low area occurs between residential properties with no relief or clear path to existing outfalls.

Specific Scope of Services:

Task 1 – Drainage Design

Kimley-Horn will analyze the existing drainage system and provide a brief technical memorandum of findings to identify options to resolve the maintenance problems within the Group D site limits. The memorandum will document field reviews, flooding reports, and drainage calculations; and provide recommended solution(s) and sketches. This task includes one (1) field review during a storm event and a meeting with the City Representative.

For sites 12, 18 and 20 of Group D, a description of these services consists of the following:

- Site 12
  - Analyze existing drainage patterns at 218 Lago Vista Street and 123 Sunrise Boulevard
  - Propose inlet and piping system along both sides of Lago Vista Street from Sunrise Boulevard
Kimley-Horn

north to the existing outfall to the depressional area outfall
  - Propose inlet and piping system along both sides of Sunrise Boulevard from Bayou Vista Street to Lago Vista Street
  - Upgrade existing outfall to the low depressional area (218 Lago Vista Drive) to provide a better connection to depressional area

- Site 18
  - Analyze existing drainage patterns at 201-218 Grande Vista Street
  - Propose inlet and piping connection system between existing low point within project area limits and existing low area along Lago Vista Street between 220 and 222 Linda Vista Street or between 216 and 220 Linda Vista Street
  - Design stormwater management facility

- Site 20
  - Analyze existing drainage patterns at 221, 232-234 Agua Vista Street
  - Propose inlet and piping system along Grande Vista Street from Plantation Road south to 218 Grande Vista Street

Kimley-Horn will design a drainage system to help address the above stated issues. This design is limited to the above stated services for each site.

Task 2 – Construction Plans

Based on the designs identified in Task 1, Kimley-Horn will prepare a plan set for Group D including construction plan for the drainage improvements that will include sites 12, 18, and 20. The plan sheets will be prepared on 11”x17” half size sheets. Kimley-Horn will submit 30% plans to the City for review and comment prior to developing final plans for submittal to the City. Kimley-Horn will respond to one (1) round of comments from the City. It is anticipated that Temporary Traffic Control Plans (TTCP) will be prepared by the Contractor and is not included this Task.

For each site included in Group D, Kimley-Horn will conduct one (1) coordination meeting with utility owners to coordinate impact of the proposed improvements on their facilities. Kimley-Horn will submit construction plans to affect utility companies once during the design phase in an effort to identify conflicts for relocation from the respective utilities and submit them to the City for inclusion in the bid documents.

This task does not include utility design and if required, can be performed as an additional service.

The construction plans set will include one (1) of the following items:
  - Key Sheet
  - General Notes
  - Project Layout Sheet

The construction plans set will also include one (1) of the following items for each site contained in Group D for each of the sites 12, 18, and 20:
  - Plan/Profile Sheets
  - Cross Sections
  - Erosion Control Plans
  - Construction Details

Task 3 – Permitting Coordination

It is anticipated that the drainage improvements for sites 12 and 20 will not require a St. Johns River Water Management District (SJRWMD) Environmental Resource Permit (ERP). Kimley-Horn will prepare a permit exemption verification application. It is anticipated that the drainage improvements in site 18 will require a SJRWMD ERP. Kimley-Horn will prepare a general permit application. Kimley-Horn will respond to one (1) request for additional information from the SJRWMD. Permitting services beyond the requirements outlined above will require additional scope and fees.
Task 4 – Survey and Mapping Services

Kimley-Horn will retain the services of Allen & Company, Inc. to perform the survey for area per site stated below. Right of way survey will include preparation of depicting computed existing/apparent right-of-way lines within the project limits. Refer to attached subconsultant proposal for additional information.

Task 5 – Environmental

Kimley-Horn has retained the services of BDA Environmental Consultants to perform the environmental analysis for the sites of Group B (sites 12, 18, and 20). A BDA scientist will review the site for wetlands that may be considered jurisdictional by the St. Johns River Water Management District (SJRWMD), flag wetlands or surface waters, and will assess the site for the occurrence and potential for occurrence of wildlife species listed as Threatened or Endangered (Listed Species). BDA scientific staff will coordinate with the project engineer to prepare the environmental report to accompany the application for a SJRWMD Environmental Resource Permit (ERP), as well as prepare and submit the application for a Florida Department of Environmental Protection (FDEP) Environmental Permit. A detailed description and breakdown of hours for BDA’s services is attached at the back of this scope for reference.

Task 6 – Bid Assistance Services

Kimley-Horn will prepare one (1) opinion of probable construction cost and one (1) contractor bid tabulation form for each site included in Group D for use by the City during the bidding process. Kimley-Horn will attend one (1) pre-bid meeting and provide input as directed by the City for each site included in Group D. Kimley-Horn will prepare responses to questions submitted by the contractors to the City during the bidding period.

Task 7 – Construction Phase Services

Kimley-Horn will review drainage structure shop drawings submitted by the Contractor in accordance with standard FDOT procedures. The City will be responsible for the receipt, distribution, and disposition of all contractor submittals, including project logs. The term "shop drawings" include all drawings, diagrams, illustrations, transportation procedures, manuals, and design calculations submitted by the Contractor to define some portion of the project.

Kimley-Horn will provide written responses to the City for up to two (2) Contractor Requests for Information (RFI) for each site included in Group D.

For each site included in Group D, Kimley-Horn will attend up to two (2) progress meetings during construction as requested by the City. This task does not include engineering inspection services.

Task 8 – Construction Engineering and Inspection (CEI)

Kimley-Horn has retained the services of SAI Consulting Engineers, Inc. to provide Construction Engineering and Inspection ("CEI") Services. This task includes the following items:

- Part-time field inspection services
- Daily work reports for days our staff is on-site
- On-Site materials testing services (Densities, concrete tests etc.)
- Laboratory materials testing (earthwork proctors etc.) through a sub-consultant
- Attend project meetings
- Contractor’s schedule review

SAI’s fee breakdown is attached at the back of this scope for reference.
**Deliverables**

Kimley-Horn will provide the following deliverables associated with this project:

- Construction Plans
- Technical memorandum
- SJRWMD Permit Exemption (Sites 12 and 20)
- SJRWMD General Permit (Site 18)
- FDEP Environmental Permit

**Additional Services**
The following services are not included in this IPO but may be performed if authorized by the City. Payment for these additional services will be agreed upon prior to their performance.

- Attendance at meetings in addition to those noted in the scope of services
- Certified Arborist evaluation for tree preservation
- Temporary Traffic Control Plans
- Subsurface utility verification
- Geotechnical services
- Utility Plans

**Information Provided By Client:**
The City will provide the following information, upon which Kimley-Horn can rely:

- Available right of way data
- Available record or as-built plans
- Available permits
- Data regarding the existing road conditions
- Lidar/Contours

**Schedule:**

Tasks 1-6 are anticipated to be completed within 120 calendar days of notice to proceed. The completion of Task 7 and 8 will depend on the construction schedule.

**Fee and Billing:**

Kimley-Horn will complete the above scope of services for the lump sum fees detailed below, inclusive of office overhead expenses. Services provided under this will be invoiced on a monthly basis. All invoices will include a description of services provided. Approval from the City shall be required for all invoiced travel expenses and meetings. Fee breakdown tables for the lump sum tasks noted below have been included in Appendix A for reference.
Group D Fee Breakdown

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<th>Task</th>
<th>Description</th>
<th>Lump Sum Fee</th>
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<tr>
<td>Task 1</td>
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<td>Construction Plans</td>
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<td><strong>Sub-Total (Labor)</strong></td>
<td><strong>$152,470</strong></td>
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Attachments: Appendix A

ACCEPTED:
THE CITY OF DEBARY, FLORIDA

BY: __________________________

TITLE: _________________________

DATE: _________________________

KIMLEY-HORN AND ASSOCIATES, INC.

By: __________________________

Brent A. Lenzen, P.E., Associate/Assistant Secretary

Date: February 24, 2022
APPENDIX A

LUMP SUM FEE BREAKDOWN
## APPENDIX A - CONSULTANT'S COMPENSATION PROPOSAL
### CIVIL BREAKDOWN OF FEES

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<th>Rate Category</th>
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<th>Senior Project Manager</th>
<th>Professional Engineer (PE)</th>
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<th>Senior CAD Designer</th>
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Sub-Total Construction Plans: $70,000

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Sub-Total Permit Coordination: $70,000

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Sub-Total Site Consultation: $70,000

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Kimley-Horn and Associates, Inc.

City of Deary

10/18/2021
PROJECT PROPOSAL

Date: November 15, 2021
Client: Kimley-Horn
Project Type: Offsite Route / Topographic Surveys
Project Name: Debar Stormwater Study
Prepared By: James Rickman, P.S.M., Vice President / Executive Director of Land
Phone: 407.654.5355. Ext. 102
Email: Jim@allen-company.com
November 15, 2021

Kimley-Horn
116 South Kentucky Avenue
Lakeland, FL 33801
Attn: Katie Gleason - Katie.Gleason@kimley-horn.com

RE: Debary Stormwater Study - Letter of Agreement - Exhibit A (20210935-1)

Katie Gleason:

We appreciate your consideration of ALLEN & COMPANY, INC. to provide professional Land Surveying services for the above referenced project. These services will include items listed on Exhibit “A” to be billed Lump Sum as shown on Exhibit “A”, attached, plus out-of-pocket expenses incurred on the client’s behalf. Also, included in this contract are the attached “Standard Provisions of Agreement for Professional Services”.

The survey will be prepared in accordance with the minimum technical standards for surveys as set forth in Chapter 5J-17 Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

The following additional provisions are included in this contract:

1. The terms of this agreement shall be valid for client acceptance for a period of sixty (60) days from the date of execution by Allen & Company, Inc. after which time this contract offer becomes null and void if not accepted formally (evidenced by receipt of an executed copy of this document).

2. This agreement may be terminated by either party within fifteen (15) days written notice. In the event of termination, Allen & Company, Inc. shall be compensated to the date of termination, including direct expenses then due.

3. All rates and fees quoted in this document shall be effective for a period of twelve (12) months, after which time they may be renegotiated with the client.
4. All original documents shall be retained by Allen & Company, Inc. and will remain their property. This information is proprietary and will not be shared with others without prior written consent. The client will be provided with reproducible copies of all original documents upon request, and at client expense.

5. The client will pay invoices upon receipt and understands interest charges of 1.5% per month will be applied to any unpaid balance. Allen & Company, Inc. may elect to stop work until payment is received. If work is stopped for thirty (30) days or more, Allen & Company, Inc. may be compensated for start-up costs when work resumes.

6. Upon client request, we will contract and/or coordinate with applicable transportation, environmental, geotechnical, and engineering consultants, and will rely upon their work; however, Allen & Company, Inc. assumes no liability for the accuracy of their work.

Thank you for this opportunity and we look forward to working with you on this exciting new project. Please sign, date and return a copy of this agreement as your authorization to proceed with these professional services. Should you have any questions, please do not hesitate to call.

Sincerely,

ALLEN & COMPANY, INC.

James Rickman

James L. Rickman P.S.M. Vice President

ACCEPTED BY (Sign & Print): ___________________________ DATE: ______________
<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>CONTRACT AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Offsite Route and Topographic Survey of Group A Drainage Improvements – Sites 13, 14, 15 &amp; 19. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$17,000.00</td>
</tr>
<tr>
<td>2. Offsite Route and Topographic Survey of Group B Drainage Improvements – Sites 2 through 6. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$20,000.00</td>
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<tr>
<td>3. Offsite Route and Topographic Survey of Group C Drainage Improvements – Sites 8 &amp; 9. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$10,000.00</td>
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<td>4. Offsite Route and Topographic Survey of Group D Drainage Improvements – Sites 12, 18 &amp; 20. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$21,500.00</td>
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<td>5. Offsite Route and Topographic Survey of Group E Drainage Improvements – Sites 16, 17, 23 &amp; 27. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
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<td>6. Offsite Route and Topographic Survey of Benson Junction Road Drainage Improvements – Site 10 – Option A. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$13,000.00</td>
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<td>7. Offsite Route and Topographic Survey of Benson Junction Road Drainage Improvements – Site 10 – Option B. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$10,000.00</td>
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$125,500.00
If you have any questions or comments concerning this proposal exhibit, please email proposals@allen-company.com

Sign & Return
EXHIBIT B

- Allen & Company, Inc. will provide all survey services on work described herein.

- Allen & Company, Inc. will utilize 2D GPR to scan for utilities and EM Equipment to locate utilities where access to utilities is available.

- A Sunshine 811 "LOCATE" ticket will be requested for the areas described to determine the utility providers within the project limits and to notify them of the request for coordination with the Allen & Company, Inc. utility locator.

- Allen & Company, Inc. approximate locate area is outlined in red on the attached image. The exact locate area will need to be designated at time of work.

- Allen & Company, Inc. will use paint and flags to mark located utilities and will provide a technician's field drawing of the located utilities.

- Allen & Company, Inc.'s scope of services does not include the locating of abandoned utilities that are no longer locatable, vacant conduits, gravity sewer, storm lines, small irrigation lines, and low voltage lines. (Unless otherwise specified at an additional cost).

- Client is responsible for ensuring that all electrical and lighting systems are energized and that all lights with outdoor light sensor systems are in use at time of locate work.

- If available, Allen & Company, Inc. requests that client provide as-builts, engineering prints, etc. of existing utilities.

- GPR Scans can only be performed in accessible areas that are clear of obstacles such as construction materials, pipes, vehicles, machinery, dirt/materials mounds, landscaping, trees, uneven terrain, water, etc.

- If needed, Allen & Company, Inc. can provide a quote for 3D GPR that typically provides additional/more comprehensive data.
(A) LIMITS OF GPR AND ELECTROMAGNETIC SERVICES: If Services are Provided
ACI will make every effort to horizontally detect the underground utilities, objects or voids
described in the Scope of Work or as requested at the time of work within the designated work
area(s). However, ACI cannot mark utilities/objects/voids that are undetectable. Therefore, ACI
cannot guarantee that all subsurface utilities/objects/voids will be accounted for. Locate
limitations that ACI will not be held liable for include but are not limited to:

- GROUND PENETRATING RADAR (GPR):
  - GPR investigations are highly site specific and can be limited by attenuation of GPR signals by
    subsurface materials.
  - GPR investigations are limited by uneven terrain conditions, high grass (over 3"), bushes, trees, debris, etc.
  - All vertically stacked utilities/objects may not be detected since GPR signals are reflected by the top
    most utility/object.
  - Some utilities/objects may not return a reflected signal to the GPR receiver.
  - GPR scans cannot be made immediately next to buildings/objects due to equipment restrictions.
  - Pipes with little or no liquid content at time of locate work may not be detected with GPR.
  - Locations of existing utilities scanned by ground penetrating radar (GPR) are to be deemed
    approximate in nature and in no way are to be construed as exact. Allen & Company, Inc. (ACI) will
    not be held responsible for damage to existing utilities located by GPR scanning.

- ELECTROMAGNETIC LOCATING:
  - The number of access points within designated locate area(s) may be limited or non-existent.
  - Utility or property owner may restrict or deny the use of utility access points.
  - Utility may not adequately carry the imposed current from the electromagnetic locate equipment.
  - Fiber & other non-metallic lines with no or non-working tracer wire are untraceable with
    electromagnetic locate equipment.
  - Locations of existing utilities designated by Electromagnetic Equipment (EM) are to be deemed
    approximate in nature and in no way are to be construed as exact. Allen & Company, Inc. (ACI) will
    not be held responsible for damage to existing utilities located by EM equipment.
(B) DESIGN ENGINEER and CONTRACTORS
Due to locate limitations, the client’s/owner’s Design Engineer is expected to gather and identify existing facility information from various prints and underground facility owners/operators to confirm that no other subsurface utilities/objects are present in the project area, and Contractors are responsible to abide by Florida Statutes 556.106 - Sunshine 811.

(C) MACHINE DEPTHS: (If Service is provided)
Machine depths are approximate readings, are not guaranteed depths, are provided for informational purposes only, and should not be relied upon for any type of subsurface work. ACI will not accept any responsibility for actions taken based on provided machine depths.

(D) VERTICAL EXCAVATION (DIRT SOFT DIG): Information/Limitations: (If Service is provided)
Soft Digs are made within grassed or otherwise unpaved surface conditions to a maximum depth of approximately 10 feet to determine the depth of the utility/object. If requested, ACI also will provide the size and material type.
• Soft Dig vertical depth measurements are made from the top of each exposed utility/object to the ground surface.
• The vertical depth range and visual inspection ability is dependent on events such as ground water level.
• Client must obtain/provide ACI with any required soft dig permits before soft dig work is performed. Client will be responsible for any permitting soft dig fines assessed by governing agency.

(E) CORE BORE WITH VERTICAL EXCAVATION (DIRT SOFT DIG): Information/Limitations: (If Service is provided)
A Core Bore is made in asphalt or concrete to vertically expose a utility/object to determine the depth of the utility/object from the top of the utility/object to the pavement surface.
• Vertical Excavation limits apply (See Item D).
• Test hole will be backfilled with like materials compacted in 6" lifts or with a flowable fill mixture.
• The current asphalt thickness will be replaced with double asphalt thickness.
• Asphalt/Concrete Core Bore Permits are to be furnished to ACI by the client prior to work being scheduled. Client is responsible for cost of all permits, MOT, Traffic Control, and any permitting fines assessed by governing agency.

(F) CERTIFICATE OF INS (COI): New/Revised COI Requests
• Client COI requirements must be provided to ACI prior to the Authorization to Proceed being issued.
• ACI will invoice client for all costs associated with client COI requirements that incur billable charges to ACI.
The Client and Surveyor agree that the following Provisions shall be a part of their agreement:

1. Neither the Client nor Surveyor shall assign its interest in this agreement without the written consent of the other.

2. All agreements on Surveyor's part are contingent upon, and Surveyor shall not be responsible for damages or be in default or be deemed to be in default by reason of: delays in performance by reason of strikes, lockouts, accidents, acts of God and other delays unavoidable or beyond Surveyor's reasonable control, or due to shortages or unavailability of labor at established area wage rate or delays caused by failure of Client or Client's agents to furnish information or to approve or disapprove Surveyor's work promptly, or due to late or slow, or faulty performance by Client, other contractors or governmental agencies, the performance of whose work is precedent to or concurrent with the performance of Surveyor's work, in the case of the happening of any such cause of delay, the time of completion shall be extended accordingly.

3. In the event that any changes are made in the plans and specifications by the Client or persons other than Surveyor which affect Surveyor's work, any and all liability arising out of such changes is waived as against Surveyor and the Client assumes full responsibility for such changes unless Client has given Surveyor prior notice and has received from Surveyor written consent for such changes.

4. Surveyor is not responsible, and liability is waived by client as against Surveyor, for use by Client or any other person of any plans or drawings not signed by Surveyor.

5. All tracings, survey notes, and other original documents are instruments of service and shall be the property of Surveyor, except whereby law or precedent these documents become public property.

6. Surveyor's liability to the Client for injury or damage to persons or property arising out of work performed for the Client and for which legal liability may be found to rest upon Surveyor, other than for professional errors and omissions, will be limited to Surveyor's general liability insurance coverage. For any damage on account of any error, omission or other professional negligence, Surveyor's liability will be limited to a sum not-to-exceed Surveyor's fee.

7. Fees and all other charges will be billed monthly as the work progresses and the net amount shall be due at the time of billing.

8. Interest 1-1/2% per month (but not exceeding the maximum rate allowable by law) will be payable on any amounts not paid within 30 days of the billing date, payment thereafter to be applied first to accrued interest and then to the principal unpaid amount. Any attorney's fees or other costs incurred in collecting any delinquent amount shall be paid by the Client.

9. The Client shall pay the costs of checking inspection fees, zoning and annexation application fees, assessment fees, soils Surveying fees, soils testing fees, aerial topography fees, and all other fees, permits, bond premiums, title company charges, blueprints and reproductions, and all other charges not specifically covered by the terms of this agreement.

10. In the event all or any portion of the work prepared or partially prepared by Surveyor is suspended, abandoned, or terminated, the Client shall pay Surveyor for the work performed on an hourly basis, not to exceed any maximum contract amount specified herein.

INITIALS ________
11. Any Opinion of the Construction Cost prepared by Surveyor represents his Judgment as a design professional and is supplied for the general guidance of the Client. Since Surveyor has no control over the cost of labor and material, or over competitive bidding or market conditions, Surveyor does not guarantee the accuracy of such opinions as compared to contractor bids or actual cost to the Client.

12. The Client agrees that in accordance with generally accepted construction practices, the construction contractor will be required to assume sole and complete responsibility for Job site conditions during the course of construction of the project, including safety of all persons and property and that this requirement shall be made to apply continuously and not be limited to normal working hours.

13. In the performance of its professional services, Surveyor will use that degree of care and skill ordinarily exercised under similar conditions in similar localities and no other warranties express or implied are made or intended in any of Surveyor's proposals, contracts or reports. The Client agrees to defend, indemnify, and hold harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability proximately arising from the sole negligence of Surveyor.

14. In the event the Client fails to pay Surveyor within sixty (60) days after invoices are rendered, then Client agrees that Surveyor shall have the right to consider said default a total breach of this agreement and the duties of Surveyor under this agreement terminated upon five (5) days written notice. This agreement may be terminated by either Client or Surveyor upon thirty (30) days written notice. In the event of substantial failure of the other party to perform in accordance with the terms of this agreement, Client expressly agrees to hold Surveyor harmless from any liability arising out of Surveyor's termination of its services hereunder due to Client's failure to perform and/or pay in accordance with the provisions of this agreement. In the event of termination of this agreement, Client shall then promptly pay Surveyor for all of the fees, charges and services performed by Surveyor in accordance with the compensation arrangements under this agreement or on an agreed hourly basis.

15. The Client agrees not to solicit or be solicited by any employee, former employee or subconsultant of Allen & Company, Inc. for employment for this project or any other Client's project for one year after completion and/or termination of Allen & Company services without written consent. In event Client fails to adhere by said agreement, then Client will be billed for one year at the employee's billable rate.

16. Should litigation be necessary to enforce any term or provision of this agreement, or to collect any portion of the amount payable under this agreement, then all litigation and collection expenses, witness fees and court costs, and attorney's fees shall be paid to the prevailing party.

17. Should any provision herein be found or deemed to be invalid, this agreement shall be construed as not containing such provisions and all other provisions which are otherwise lawful shall remain in full force and effect, and to this end the provisions of this agreement are declared to be severable.

18. Services provided within this agreement are for the exclusive use of the Client.

19. There are no understandings or agreements except as herein expressly stated.

20. All "Standard Hourly Rates" will be maintained for 60 days from the date the contract is signed.

INITIALS _________
February 22, 2022
File: 2022013-050

SENT VIA ELECTRONIC MAIL

Mr. Brent Lenzen, P.E.
Kimley-Horn
189 South Orange Avenue, Suite 1000
Orlando, Florida 32801
Phone: (407) 427-1610
E-mail: Brent.Lenzen@kimley-horn.com

RE: Proposal for Environmental Services
City of DeBary Drainage Improvements
City of DeBary, Florida

Dear Mr. Lenzen:

Breedlove, Dennis & Associates, Inc. (BDA) is pleased to provide the following proposal for environmental services on the City of DeBary Drainage Improvements project site located at 218 Lago Vista Street, City of DeBary, Volusia County, Florida (Site). Pursuant to your request, the following environmental services will be provided:

Task No. 1 – Environmental Site Review and Delineation

BDA scientists will review the Site for wetlands that may be considered jurisdictional by the St. Johns River Water Management District (SJRWMD) pursuant to Chapter 62-340 of the Florida Administrative Code (FAC), and Florida Department of Environmental Protection pursuant to Chapter 62-340 FAC for state assumed waters, if any, and the City of DeBary pursuant to the Land Development Code (Section 4-232). BDA will field flag wetlands or surface waters, if any, and GPS the approximate flag locations with a hand-held Garmin. Any wetland delineation conducted will be suitable for planning purposes but will not be binding until inspected and approved by local, state, and federal agency staff. Please note that wetland flags will need to be located by a Florida licensed surveyor as part of the regulatory review; this task does not include costs associated with the wetland survey.

BDA will also review in-house databases, including the Natural Resources Conservation Service soils map, SJRWMD Florida Land Use, Cover and Forms Classification System data, publicly available databases and available aerial photography to assist with this analysis.
As part of the Site review, BDA scientists will assess the Site for the occurrence and potential for occurrence of wildlife species listed as Threatened or Endangered (Listed Species) by the U.S. Fish and Wildlife Service pursuant to the Endangered Species Act, 1973, 16 United States Code 1531-1544, December 28, 1973, as amended or the Florida Fish and Wildlife Conservation Commission (FWC) pursuant to Chapter 68A-27 FAC (Listed Species). Assessment for the occurrence and likelihood of occurrence of Listed Species will include documentation through direct observation, auditory signal, or sign (tracks, scat, etc.). BDA scientists will also collect data on habitat types occurring onsite for comparison with known habitat preferences of Listed Species, including listed plants, known to occur in Volusia County, Florida. BDA will also review in-house databases associated with the extent and documented ranges and occurrence records of Listed Species, to include a review of the FWC bald eagle (Haliaeetus leucocephalus) nest database and wading bird rookery database to identify possible active eagle nests and wading bird rookeries within the vicinity of the Site.

The results of our data collection and analysis will be incorporated into the supporting documents for SJRWMD and/or Florida Department of Environmental Protection (FDEP) environmental permitting Tasks.

Please advise us of any special conditions for access or notifications that must be provided.

Task 2 - St. Johns Water Management District Environmental Permitting

BDA scientific staff will coordinate with the project engineer to prepare the environmental report to accompany the application for a SJRWMD Environmental Resource Permit (ERP). The purpose of this report is to address the environmental review criteria that the SJRWMD will require as part of the ERP application review, including current Site conditions and the mitigation plan. Typically, this report will complement the engineering submittal as an attachment to the application, and will include the following information:

- Overview of the project
- Description of upland and wetland vegetative communities
- A review for the occurrence of listed wildlife and plant species
- Description of wetland impacts, if any
- Mitigation and monitoring plan, as applicable
- Documentation to address the environmental review criteria in the SJRWMD Applicant’s Handbook, Volume I
- Documentation to satisfy public interest criteria
- Preparation of supporting exhibits/graphics

The project boundary, preferably in Computer Aided Design or Geographic Information System, and/or
legal description will be needed prior to initiating work and is expected from the project engineer. The project engineer will also supply the final Site plan or stormwater/earthworks plan (preferably in digital form). Any subsequent modifications to the project boundary or Site plan that necessitate changes to the above-referenced report or the accompanying graphics will be billed as additional requested services.

Should the SJRWMD require additional information, BDA will coordinate with SJRWMD staff and the project engineer as required and prepare a response for one request for additional environmental information. BDA will also attend one field meetings with SJRWMD to review the extent of wetlands and the mitigation plan, if necessary.

Task 3 - Florida Department of Environmental Protection Environmental Permitting

FDEP will regulate the filling within wetlands pursuant to Section 404 of the Clean Water Act. A project generally will require an Individual Permit (IP) if impacts to the jurisdictional wetlands or surface waters are greater than or equal to 0.5 acre, and a General Permit if wetland impacts are less than 0.5 acre. If no Section 404 waters are present on the Site, then a No Permit Required (NPR) determination can be requested from FDEP. It is unknown at this time if a permit will be required from FDEP, and, if required, which type of permit will be necessary. As such, detail is provided for permitting requirements, but a cost range is included since the application requirements and time lines are different depending on the type of permit required. The application report will typically include the following information:

No Permit Required determination:
- Completed “Information Required for a “waters of the United States” Determination in State Assumed Waters” form,
- Supporting graphics, including historic aerials.

General Permit:
- Overview of the project,
- Description of upland and wetland/surface water communities,
- Description of wetland/surface water impacts, including cumulative impacts.
- Mitigation plan,
- Review of federally listed wildlife and plant species,
- Supporting graphics.

Individual Permits:
- Overview of the project,
- Description of upland and wetland/surface water communities,
- Description of wetland/surface water impacts, including cumulative impacts.
- Mitigation plan,
• Review of federally listed wildlife and plant species,
• Public interest review criteria,
• Alternative analysis,
• Avoidance and minimization criteria, and
• Supporting graphics.

This task will include one response to a Request for Additional Information (as needed) and one Site review with FDEP staff to review the extent of wetlands, jurisdiction, and the mitigation plan. The preparation of any additional information beyond this scope of work will be addressed in a work scope addendum.

**Listed Species**

Following the Site review, a separate work scope will be provided if necessary to address permitting of Listed Species.

**Cost of Services and Invoicing**

The estimated cost for the proposed services identified above is as follows:

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<th>Task</th>
<th>Description</th>
<th>Cost</th>
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<td>1</td>
<td>Environmental Site Review and Delineation</td>
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<td>2</td>
<td>SJRWMD Environmental Permitting</td>
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<td>3</td>
<td>FDEP No Permit Required</td>
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The total lump sum cost will be one of the following:

• Task 1, Task 2, Task 3 NPR: $13,230.00, or
• Task 1, Task 2, Task 3 GP: $15,120.00, or
• Task 1, Task 2, Task 3 IP: $18,575.00

Not that the lump sum cost includes only the tasks above, including only the number of responses and field reviews. Anything additional, including permitting or coordination for listed species, will require a work scope addendum.

For the hourly breakdown, see attached table.
Billing will be on a monthly basis in accordance with the enclosed Schedule of Professional Fees and subject to the enclosed Terms and Conditions, with the final lump sum amount due upon project completion. Space has been provided below for your acceptance of this proposal, and your signature hereon will constitute a contract between us for the work. We can begin immediately upon receipt of the signed proposal and your authorization to proceed. Please return the signed copy to our office. A copy of the fully executed contract will be returned for your files. Thank you for your consideration of our company for environmental services.

Sincerely yours,

[Signatures]

Jennifer L. Rodinski, Ph.D., PWS
Principal Scientist

W. Jeffrey Pardue, C.E.P., M.S., M.B.A.
Senior Vice President

Accepted by:

Brent Lenzen, P.E.
Kimley-Horn

W. Jeffrey Pardue, C.E.P., M.S., M.B.A.
Senior Vice President
Breedlove, Dennis & Associates, Inc.

JLR/WJP/tnp
Enclosures
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# SCHEDULE OF PROFESSIONAL FEES

**Effective March 28, 2015**

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<td>Clerk</td>
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Terms:  Net 30 days. Unpaid balances will be subject to interest at the rate of 1.5% per month or the maximum permissible under state law, whichever is less, starting 30 days from the invoice date.

A 10% fee will be added to the following items: laboratory fees, sub-consultant fees, and overnight travel.

Expert witness at 125% of schedule fees.
1. Other support provided at the request of the Client or representatives of the Client including, but not limited to, team meetings, agency negotiations, public presentations, mitigation design, permitting assistance, sufficiency responses or additional analyses not mentioned elsewhere in this Proposal will be billed on a time and materials basis according to the attached rate schedule. All requested services must be approved by the Client before additional support can be initiated.

2. Unless specified elsewhere in the Proposal, the proposed costs constitute Breedlove, Dennis & Associates, Inc.'s (BDA) estimate of the charges required to complete the Project as defined. Final costs for this Project may vary from the estimated costs. For many projects, all activities are often initially not fully definable. As the Project progresses, the facts uncovered may alter the scope of work and consequently the cost of completion. BDA will inform the Client of such situations so that negotiations of change in scope and fees can be accomplished as required.

3. BDA's fees are based on the actual time required by the individuals assigned to the Project task, plus reimbursable expenses. Reimbursable expenses mean the actual expenses incurred directly or indirectly in connection with the Project. Reimbursable expenses include, but are not limited to long distance telephone calls, computer charges, living and travel out-of-town, inter-city travel, reproduction of reports, drawings and documents, and special fees. Client shall compensate the consultant for reimbursable expenses. Individual hourly rates vary according to the degree of responsibility involved and the skill required. BDA will submit our bill for these services monthly. Payment is due upon submission.

4. After January 1, 2022, all hourly and daily rates quoted within this contract may increase by 5%, at the determination of BDA, upon written notice to Client, and may increase by 5% annually thereafter.

5. This Proposal to perform services for this Project shall remain open for acceptance for a period of sixty (60) days from the date thereof, after which time BDA reserves the right to review, revise or withdraw its Proposal.

6. All information furnished by Client to BDA shall be returned to Client upon the conclusion of the Work unless the same shall have been consumed or merged into the Work. BDA may retain copies of any such information furnished to BDA by Client and BDA shall, in all events, retain full possession and ownership of its field and Project notes and all other documents or data generated, consumed or merged into any reports, opinions, or applications required in connection with the Project and the Work.

7. This Contract may be terminated by either Party for reason or for no reason by giving thirty (30) days written any notice to the other Party. Said notice shall be sufficient if it is delivered to the Party personally or mailed by certified mail to the Party's mailing address. Upon any termination under this paragraph, BDA will prepare a final invoice following the date of a final termination notice which date shall be the "Effective Date of Termination." Where the method of payment is based on time and materials, the final invoice will be based on reimbursement for all services and expenses associated with the Project up to the Effective Date of Termination.

8. Neither BDA nor Client shall be liable to the other for any damages whatsoever caused by termination of this
Contract or failure to perform under this Contract, except for services actually performed and costs and commitments actually incurred by BDA under this Contract, prior to the Effective Date of Termination. In no event shall either Party be liable to the other for any other claim of direct, indirect, special, incidental, or consequential damages (including loss of profits) whether based on contract, tort, or another legal theory.

9. The Parties to this Contract agree to make the submission to mediation of any dispute or controversy arising out of this Contract, as set forth herein, an express condition precedent to any legal or equitable action or proceeding of any nature whatsoever. All disputes between the Parties to this Contract arising out of or in connection with this Contract shall be referred for mediation to a mediator who is a member of the Florida Bar in good standing, and who is mutually acceptable to all Parties subject to the dispute. Each Party to all disputes submitted for mediation shall pay an equal share of the costs and fees charged by the mediator.

10. The Client acknowledges that it has secured legal rights to the property upon which the project will be developed. The Client further acknowledges and agrees that the type of services to be performed by BDA are covered under Florida Statutes 713.03 (Liens for professional services) and that the non-payment of fees owed under this Agreement may result in a mechanic's lien or other encumbrances being placed on the property upon which the project is/will be located.

11. This Contract shall be governed by and interpreted in accordance with the laws of the State of Florida, and the Parties expressly agree that any mediation proceeding, or any action at law or suit in equity, shall be instituted and maintained only in the Courts of Orange County, Florida, and each Party waives the right to change of venue. It is agreed by and between the Parties that this agreement was executed in the State of Florida, United States of America. In the event BDA retains legal counsel to enforce any of the provisions of this agreement, the Client agrees to pay all reasonable attorneys fees and any additional attorney fees pursuing collection of this judgement.

12. This agreement, and any specified attachment, or exhibits attached constitute the entire agreement between BDA and Client and all promises, representations, understandings, and agreements with the respect to the subject matter hereof and inducements to the making of this agreement relied upon by either Party have been expressed herein, and may not be altered, amended, or modified unless in writing executed by the Parties hereto.

13. Neither this agreement nor any interest herein may be assigned by the Client without BDA's prior written consent. No Party shall be liable for delay in the performance hereunder do to causes beyond their control, including, but not limited to, acts of God, fire strikes, acts of war, or the intervention of governmental authority, but any such failure shall be remedied as soon as reasonably possible.

14. Each Party executes this agreement as an independent contractor and nothing herein shall be construed to form a joint venture, partnership, or any similar form of association.

15. In the event of default by Client in the payment of any sum to BDA when due, or in the performance of any of Client's obligations under this agreement, BDA shall have the right to terminate this agreement, until such time as the default may be cured. Client shall reimburse BDA for all costs and expenses to enforce collection of any monies from Client.
## DeBary Stormwater Projects
### CEI Services

<table>
<thead>
<tr>
<th>Site</th>
<th>Senior Inspector</th>
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<td>Group E, Site 27</td>
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**Total Hours:** 300 30 9

**Note:** Project Administrator Hours based on 10% of Senior Inspector hours  
Senior Project Engineer Hours based on 3% of Senior Inspector Hours

### Group D Total Costs:
- 40 hrs x $77.87 = $3,114.80
- 4 hrs x $104.22 = $416.88
- 2 hrs x $152.86 = $305.72
- 1/5 Lab Material Testing = $200
- **Total Group D = $4,037.40**

## Total Costs

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**Grand Total:** $28,863.34

Hours are estimated based on part time inspection of each site  
Lab Materials testing is for Proctors etc. as required
INDIVIDUAL PROJECT ORDER NUMBER 7

February 24, 2022

Describing a specific agreement between Kimley-Horn and Associates, Inc. ("Kimley-Horn") and The City of DeBary (the "Client" or the "City") in accordance with the terms of the Continuing Contract for Professional Engineering Services ("Contract") dated January 6, 2021, which is incorporated herein by reference.

Identification of Project:

Project: City of DeBary Stormwater Improvement Project: Group E (Sites 16, 17A, 23, and 27)
   Site 16: 144-148 Debary Drive
   Site 17A: 253 Sunrise Boulevard / 250 Fraser Road
   Site 23: 115 Angeles Road
   Site 27: 286 Deleon Road

Project Manager: Brent A. Lenzen, P.E.

Project Understanding:

This Individual Purchase Order (IPO) identifies the scope, schedule, and fee for engineering services associated with Group E of the City of DeBary Drainage Improvement Project. Group E include stormwater improvement sites 16, 17A, 23, and 27.

Stormwater Improvement Site 16
Requires engineering services related to existing flooding occurring along both sides of Debary Drive from just east of Alicante Road to Plumosa Road, as well as along the western side of Plumosa Road. Low areas occur throughout this problem area with no relief or clear path to existing drainage inlets.

Stormwater Improvement Site 17A
Requires engineering services related to flooding in between residential properties of 249 and 253 Sunrise Boulevard and 250 and 254 Fraser Road. An existing low area occurs between residential properties with no relief or clear path to existing outfalls.

Stormwater Improvement Site 23
Requires engineering services related to existing flooding occurs along the western side of residential property 115 Angeles Road. Flooding has been reported along the western side of this property and has no relief to continue towards existing outfalls.

Stormwater Improvement Site 27
Requires engineering services related to existing flooding occurring in front of residential property 286 Deleon Road. Flooding has been reported along both sides of Deleon Road and has no relief to continue towards existing drainage inlets.

Specific Scope of Services:

Task 1 – Drainage Design

Kimley-Horn will analyze the existing drainage system and provide a brief technical memorandum of findings to identify options to resolve the maintenance problems within the Group E site limits. The memorandum will document field reviews, flooding reports, and drainage calculations; and provide recommended solution(s) and sketches. This task includes one (1) field review during a storm event and a meeting with the City Representative.
For site 16, 17A, 23, and 27 of Group E, a description of these services consists of the following:

- **Site 16**
  - Analyze existing drainage from 142 Debary Drive east to the intersection of Debary Drive and Plumosa Road. Analyze existing drainage system from the intersection of Debary Drive and Plumosa Road to the intersection of Plumosa Road and Valencia Road.
  - Re-grade existing swales along both sides of Debary Drive
  - Propose inlet and piping system along the north side of Debary Drive
  - Proposed inlet pipe system along the western side of Plumosa Road, connect to existing drainage system at the intersection of Plumosa Road and Valencia Road
  - Develop model to determine not adverse impacts to existing downstream pipe system and lake outfall

- **Site 17A**
  - Analyze existing drainage system along the north side of Fraser Road
  - Re-grade existing swales in front of 248 and 250 Fraser Road
  - Propose inlet and pipe system in front of 248 and 250 Fraser Road.
  - Fill the existing drainage ditch running along the east property lines of 250 Fraser Road and 249 Sunrise Boulevard. Propose 400' pipe system along the east property lines of 250 Fraser Road and 249 Sunrise Boulevard to connect to proposed drainage inlet between 250 and 252 Sunrise Boulevard

- **Site 23**
  - Analyze existing drainage in front of and between 113 and 115 Angeles Road
  - Re-grade existing swales between 113 and 115 Angeles Road, identified proper freeboard and width of the conveyance system between parcels

- **Site 27**
  - Analyze existing drainage system along both side of Deleon Road from the intersection of Alano Road and Deleon Road to the intersection of may Place and Deleon Road
  - Re-grade existing swales on the north side of Deleon Road from the intersection of Alano Road and Deleon Road to the intersection of may Place and Deleon Road
  - Propose inlet and pipe system along northern side of Deleon Road from Alano Road to May place to collect existing flooding and connect existing drainage inlets

Kimley-Horn will design a drainage system to help address the above stated issues. This design is limited to the above stated services for each site.

**Task 2 – Construction Plans**

Based on the designs identified in Task 1, Kimley-Horn will prepare a plan set for Group E including construction plan for the drainage improvements that will include sites 16, 17A, 23, and 27. The plan sheets will be prepared on 11"x17" half size sheets. Kimley-Horn will submit 30% plans to the City for review and comment prior to developing final plans for submittal to the City. Kimley-Horn will respond to one (1) round of comments from the City. It is anticipated that Temporary Traffic Control Plans (TTCP) will be prepared by the Contractor and is not included this Task.

For each site included in Group E, Kimley-Horn will conduct one (1) coordination meeting with utility owners to coordinate impact of the proposed improvements on their facilities. Kimley-Horn will submit construction plans to affect utility companies once during the design phase in an effort to identify conflicts for relocation from the respective utilities and submit them to the City for inclusion in the bid documents.

This task does not include utility design and if required, can be performed as an additional service.

The construction plans set will include one (1) of the following items:
- Key Sheet
- General Notes
- Project Layout Sheet
The construction plans set will also include one (1) of the following items for each site contained in Group E for each of the sites 16, 17A, 23, and 27:

- Plan/Profile Sheets
- Cross Sections
- Erosion Control Plans
- Construction Details

**Task 3 – Permitting Coordination**

It is anticipated that the drainage improvements for sites 17A, 23, and 27 will not require a St. Johns River Water Management District (SJRWMD) Environmental Resource Permit (ERP). Kimley-Horn will prepare a permit exemption verification application. It is anticipated that the drainage improvements in site 16 will require a SJRWMD ERP. Kimley-Horn will prepare a general permit application. Kimley-Horn will respond to one (1) request for additional information from the SJRWMD. Permitting services beyond the requirements outlined above will require additional scope and fees.

**Task 4 – Survey and Mapping Services**

Kimley-Horn will retain the services of Allen & Company, Inc. to perform the survey for area per site stated below. Right of way survey will include preparation of depicting computed existing/apparent right-of-way lines within the project limits. Refer to attached subconsultant proposal for additional information.

**Task 5 – Bid Assistance Services**

Kimley-Horn will prepare one (1) opinion of probable construction cost and one (1) contractor bid tabulation form for each site included in Group E for use by the City during the bidding process. Kimley-Horn will attend one (1) pre-bid meeting and provide input as directed by the City for each site included in Group E. Kimley-Horn will prepare responses to questions submitted by the contractors to the City during the bidding period.

**Task 6 – Construction Phase Services**

Kimley-Horn will review drainage structure shop drawings submitted by the Contractor in accordance with standard FDOT procedures. The City will be responsible for the receipt, distribution, and disposition of all contractor submittals, including project logs. The term "shop drawings" include all drawings, diagrams, illustrations, transportation procedures, manuals, and design calculations submitted by the Contractor to define some portion of the project.

Kimley-Horn will provide written responses to the City for up to two (2) Contractor Requests for Information (RFI) for each site included in Group E.

For each site included in Group E, Kimley-Horn will attend up to two (2) progress meetings during construction as requested by the City. This task does not include engineering inspection services.

**Task 7 – Construction Engineering and Inspection (CEI) Services**

Kimley-Horn has retained the services of SAI Consulting Engineers, Inc. to provide Construction Engineering and Inspection ("CEI") Services. This task includes the following items:

- Part-time field inspection services
- Daily work reports for days our staff is on-site
- On-Site materials testing services (Densities, concrete tests etc.)
- Laboratory materials testing (earthwork proctors etc.) through a sub-consultant
- Attend project meetings
- Contractor’s schedule review

SAI’s fee breakdown is attached at the back of this scope for reference.
Deliverables
Kimley-Horn will provide the following deliverables associated with this project:

- Construction Plans
- Technical memorandum
- SJRWMD Permit Exemption (sites 17A, 23, and 27)
- SJRWMD General Permit (site 16)

Additional Services
The following services are not included in this IPO but may be performed if authorized by the City. Payment for these additional services will be agreed upon prior to their performance.

- Attendance at meetings in addition to those noted in the scope of services
- Certified Arborist evaluation for tree preservation
- Temporary Traffic Control Plans
- Subsurface utility verification
- Geotechnical services
- Utility Plans

Information Provided By Client:
The City will provide the following information, upon which Kimley-Horn can rely:

- Available right of way data
- Available record or as-built plans
- Available permits
- Data regarding the existing road conditions
- Lidar/ Contours

Schedule:
Tasks 1-5 are anticipated to be completed within 120 calendar days of notice to proceed. The completion of Task 6 and 7 will depend on the construction schedule.

Fee and Billing:
Kimley-Horn will complete the above scope of services for the lump sum fees detailed below, inclusive of office overhead expenses. Services provided under this will be invoiced on a monthly basis. All invoices will include a description of services provided. Approval from the City shall be required for all invoiced travel expenses and meetings. Fee breakdown tables for the lump sum tasks noted below have been included in Appendix A for reference.
## Group E Fee Breakdown

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<th>Task</th>
<th>Description</th>
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<tr>
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<td>Construction Engineering and Inspection (CEI) Services</td>
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**Sub-Total (Labor)** $135,200

Attachments: Appendix A

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**ACCEPTED:**
THE CITY OF DEBARY, FLORIDA

**By:**

**TITLE:**

**DATE:**

---

KIMLEY-HORN AND ASSOCIATES, INC.

**By:** [Signature]

**Brent A. Lenzen, P.E., Associate/Assistant Secretary**

**Date:** February 24, 2022
APPENDIX A

LUMP SUM FEE BREAKDOWN
### Appendix A - Consultant's Compensation Proposal

#### Civil Breakdown of Fees

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<thead>
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<th>Role (FTEs)</th>
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<th>Senior Project Manager</th>
<th>Professional Engineer (PC)</th>
<th>Engineer (E)</th>
<th>Senior CAD Designer</th>
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#### Drainage Design

| Site 7   | 0 | 6 | 4 | $1,500
| Site 14  | 0 | 6 | 1 | $750
| Site 16  | 0 | 6 | 1 | $750
| Site 19  | 0 | 6 | 1 | $750
| Site 20  | 0 | 6 | 1 | $750
| Site 21  | 0 | 6 | 1 | $750
| Site 22  | 0 | 6 | 1 | $750
| Site 23  | 0 | 6 | 1 | $750
| Sub-Total Drainage Design | 0 | 6 | 4 | $6,000

#### Construction Plan

| Site 7   | 0 | 6 | 1 | $9,750
| Site 14  | 0 | 6 | 1 | $9,750
| Site 16  | 0 | 6 | 1 | $9,750
| Site 19  | 0 | 6 | 1 | $9,750
| Site 20  | 0 | 6 | 1 | $9,750
| Site 21  | 0 | 6 | 1 | $9,750
| Site 22  | 0 | 6 | 1 | $9,750
| Site 23  | 0 | 6 | 1 | $9,750
| Sub-Total Construction Plan | 0 | 6 | 10 | $97,500

#### Bid Coordination

| Site 7   | 0 | 6 | 1 | $1,750
| Site 14  | 0 | 6 | 1 | $1,750
| Site 16  | 0 | 6 | 1 | $1,750
| Site 19  | 0 | 6 | 1 | $1,750
| Site 20  | 0 | 6 | 1 | $1,750
| Site 21  | 0 | 6 | 1 | $1,750
| Site 22  | 0 | 6 | 1 | $1,750
| Site 23  | 0 | 6 | 1 | $1,750
| Sub-Total Bid Coordination | 0 | 6 | 10 | $17,500

#### Construction Phase Services

| Site 7   | 0 | 6 | 2 | $558
| Site 14  | 0 | 6 | 2 | $558
| Site 16  | 0 | 6 | 2 | $558
| Site 19  | 0 | 6 | 2 | $558
| Site 20  | 0 | 6 | 2 | $558
| Site 21  | 0 | 6 | 2 | $558
| Site 22  | 0 | 6 | 2 | $558
| Site 23  | 0 | 6 | 2 | $558
| Sub-Total Construction Phase Services | 0 | 6 | 20 | $1,116

**Total Lump Sum Fee:**

| 0 | 6 | 27 | $8,814

---

Kimley-Horn and Associates, Inc.

City of Deboray

10/19/2021
PROJECT PROPOSAL

Date: November 15, 2021
Client: Kimley-Horn
Project Type: Offsite Route / Topographic Surveys
Project Name: Debar Stormwater Study
Prepared By: James Rickman, P.S.M., Vice President / Executive Director of Land
Phone: 407.654.5355. Ext. 102
Email: Jim@allen-company.com
November 15, 2021

Kimley-Horn
116 South Kentucky Avenue
Lakeland, FL 33801
Attn: Katie Gleason - Katie.Gleason@kimley-horn.com

RE: Debary Stormwater Study - Letter of Agreement - Exhibit A (20210935-1)

Katie Gleason:

We appreciate your consideration of ALLEN & COMPANY, INC. to provide professional Land Surveying services for the above referenced project. These services will include items listed on Exhibit “A” to be billed Lump Sum as shown on Exhibit “A”, attached, plus out-of-pocket expenses incurred on the client’s behalf. Also, included in this contract are the attached “Standard Provisions of Agreement for Professional Services”.

The survey will be prepared in accordance with the minimum technical standards for surveys as set forth in Chapter 5J-17 Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

The following additional provisions are included in this contract:

1. The terms of this agreement shall be valid for client acceptance for a period of sixty (60) days from the date of execution by Allen & Company, Inc. after which time this contract offer becomes null and void if not accepted formally (evidenced by receipt of an executed copy of this document).

2. This agreement may be terminated by either party within fifteen (15) days written notice. In the event of termination, Allen & Company, Inc. shall be compensated to the date of termination, including direct expenses then due.

3. All rates and fees quoted in this document shall be effective for a period of twelve (12) months, after which time they may be renegotiated with the client.
4. All original documents shall be retained by Allen & Company, Inc. and will remain their property. This information is proprietary and will not be shared with others without prior written consent. The client will be provided with reproducible copies of all original documents upon request, and at client expense.

5. The client will pay invoices upon receipt and understands interest charges of 1.5% per month will be applied to any unpaid balance. Allen & Company, Inc. may elect to stop work until payment is received. If work is stopped for thirty (30) days or more, Allen & Company, Inc. may be compensated for start-up costs when work resumes.

6. Upon client request, we will contract and/or coordinate with applicable transportation, environmental, geotechnical, and engineering consultants, and will rely upon their work; however, Allen & Company, Inc. assumes no liability for the accuracy of their work.

Thank you for this opportunity and we look forward to working with you on this exciting new project. Please sign, date and return a copy of this agreement as your authorization to proceed with these professional services. Should you have any questions, please do not hesitate to call.

Sincerely,

ALLEN & COMPANY, INC.

James Rickman
James L. Rickman P.S.M. Vice President

ACCEPTED BY (Sign & Print): ___________________________ DATE: ________________
EXHIBIT A

Customer Information:
Kimley-Horn
116 South Kentucky Avenue
Lakeland, FL 33801

Quote Description:

20210935-1 - Debary Stormwater Study

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<tr>
<th>DESCRIPTION</th>
<th>CONTRACT AMOUNT</th>
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<tr>
<td>1. Offsite Route and Topographic Survey of Group A Drainage Improvements – Sites 13, 14, 15 &amp; 19. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location.</td>
<td>$17000.00</td>
</tr>
<tr>
<td>2. Offsite Route and Topographic Survey of Group B Drainage Improvements – Sites 2 through 6. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location.</td>
<td>$20000.00</td>
</tr>
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<td>3. Offsite Route and Topographic Survey of Group C Drainage Improvements – Sites 8 &amp; 9. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location.</td>
<td>$10000.00</td>
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<td>4. Offsite Route and Topographic Survey of Group D Drainage Improvements – Sites 12, 18 &amp; 20. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location.</td>
<td>$21500.00</td>
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<td>5. Offsite Route and Topographic Survey of Group E Drainage Improvements – Sites 16, 17, 23 &amp; 27. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location.</td>
<td>$34000.00</td>
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<td>6. Offsite Route and Topographic Survey of Benson Junction Road Drainage Improvements – Site 10 – Option A. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location.</td>
<td>$13000.00</td>
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<td>7. Offsite Route and Topographic Survey of Benson Junction Road Drainage Improvements – Site 10 – Option B. Includes all above ground features (i.e. sidewalks, signs, roadways, storm structures with inverts, sanitary manholes and inverts, etc...) and spot elevations at intervals to depict detailed topographic data. Also included is an Underground Utility Designation (see attached Exhibit – Survey Locations). Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location.</td>
<td>$10000.00</td>
</tr>
</tbody>
</table>

$125,500.00
If you have any questions or comments concerning this proposal exhibit, please email proposals@allen-company.com

Sign & Return
• Allen & Company, Inc. will provide all survey services on work described herein.

• Allen & Company, Inc. will utilize 2D GPR to scan for utilities and EM Equipment to locate utilities where access to utilities is available.

• A Sunshine 811 "LOCATE" ticket will be requested for the areas described to determine the utility providers within the project limits and to notify them of the request for coordination with the Allen & Company, Inc. utility locator.

• Allen & Company, Inc. approximate locate area is outlined in red on the attached image. The exact locate area will need to be designated at time of work.

• Allen & Company, Inc. will use paint and flags to mark located utilities and will provide a technician's field drawing of the located utilities.

• Allen & Company, Inc.'s scope of services does not include the locating of abandoned utilities that are no longer locatable, vacant conduits, gravity sewer, storm lines, small irrigation lines, and low voltage lines. (Unless otherwise specified at an additional cost).

• Client is responsible for ensuring that all electrical and lighting systems are energized and that all lights with outdoor light sensor systems are in use at time of locate work.

• If available, Allen & Company, Inc. requests that client provide as-buils, engineering prints, etc. of existing utilities.

• GPR Scans can only be performed in accessible areas that are clear of obstacles such as construction materials, pipes, vehicles, machinery, dirt/materials mounds, landscaping, trees, uneven terrain, water, etc.

• If needed, Allen & Company, Inc. can provide a quote for 3D GPR that typically provides additional/more comprehensive data.
(A) LIMITS OF GPR AND ELECTROMAGNETIC SERVICES: If Services are Provided
ACI will make every effort to horizontally detect the underground utilities, objects or voids
described in the Scope of Work or as requested at the time of work within the designated work
area(s). However, ACI cannot mark utilities/objects/voids that are undetectable. Therefore, ACI
cannot guarantee that all subsurface utilities/objects/voids will be accounted for. Locate
limitations that ACI will not be held liable for include but are not limited to:

• GROUND PENETRATING RADAR (GPR):
  - GPR investigations are highly site specific and can be limited by attenuation of GPR signals by
    subsurface materials.
  - GPR investigations are limited by uneven terrain conditions, high grass (over 3"), bushes, trees, debris,
    etc.
  - All vertically stacked utilities/objects may not be detected since GPR signals are reflected by the top
    most utility/object.
  - Some utilities/objects may not return a reflected signal to the GPR receiver.
  - GPR scans cannot be made immediately next to buildings/objects due to equipment restrictions.
  - Pipes with little or no liquid content at time of locate work may not be detected with GPR.
  - Locations of existing utilities scanned by ground penetrating radar (GPR) are to be deemed
    approximate in nature and in no way are to be construed as exact. Allen & Company, Inc. (ACI) will
    not be held responsible for damage to existing utilities located by GPR scanning.

• ELECTROMAGNETIC LOCATING:
  - The number of access points within designated locate area(s) may be limited or non-existent.
  - Utility or property owner may restrict or deny the use of utility access points.
  - Utility may not adequately carry the imposed current from the electromagnetic locate equipment.
  - Fiber & other non-metallic lines with no or non-working tracer wire are untovable with
    electromagnetic locate equipment.
  - Locations of existing utilities designated by Electromagnetic Equipment (EM) are to be deemed
    approximate in nature and in no way are to be construed as exact. Allen & Company, Inc. (ACI) will not
    be held responsible for damage to existing utilities located by EM equipment.
(B) DESIGN ENGINEER and CONTRACTORS
Due to locate limitations, the client’s/owner’s Design Engineer is expected to gather and identify existing facility information from various prints and underground facility owners/operators to confirm that no other subsurface utilities/objects are present in the project area, and Contractors are responsible to abide by Florida Statutes 556.106 - Sunshine 811.

(C) MACHINE DEPTHS: (If Service is provided)
Machine depths are approximate readings, are not guaranteed depths, are provided for informational purposes only, and should not be relied upon for any type of subsurface work. ACI will not accept any responsibility for actions taken based on provided machine depths.

(D) VERTICAL EXCAVATION (DIRT SOFT DIG): Information/Limitations: (If Service is provided)
Soft Digs are made within grassed or otherwise unpaved surface conditions to a maximum depth of approximately 10 feet to determine the depth of the utility/object. If requested, ACI also will provide the size and material type.
• Soft Dig vertical depth measurements are made from the top of each exposed utility/object to the ground surface.
• The vertical depth range and visual inspection ability is dependent on events such as ground water level.
• Client must obtain/provide ACI with any required soft dig permits before soft dig work is performed. Client will be responsible for any permitting soft dig fines assessed by governing agency.

(E) CORE BORE WITH VERTICAL EXCAVATION (DIRT SOFT DIG): Information/Limitations: (If Service is provided)
A Core Bore is made in asphalt or concrete to vertically expose a utility/object to determine the depth of the utility/object from the top of the utility/object to the pavement surface.
• Vertical Excavation limits apply (See Item D).
• Test hole will be backfilled with like materials compacted in 6” lifts or with a flowable fill mixture.
• The current asphalt thickness will be replaced with double asphalt thickness.
• Asphalt/Concrete Core Bore Permits are to be furnished to ACI by the client prior to work being scheduled. Client is responsible for cost of all permits, MOT, Traffic Control, and any permitting fines assessed by governing agency.

(F) CERTIFICATE OF INS (COI): New/Revised COI Requests
• Client COI requirements must be provided to ACI prior to the Authorization to Proceed being issued.
• ACI will invoice client for all costs associated with client COI requirements that incur billable charges to ACI.
STANDARD PROVISIONS OF AGREEMENT FOR PROFESSIONAL SERVICES

The Client and Surveyor agree that the following Provisions shall be a part of their agreement:

1. Neither the Client nor Surveyor shall assign its interest in this agreement without the written consent of the other.

2. All agreements on Surveyor’s part are contingent upon, and Surveyor shall not be responsible for damages or be in default or be deemed to be in default by reason of: delays in performance by reason of strikes, lockouts, accidents, acts of God and other delays unavoidable or beyond Surveyor’s reasonable control, or due to shortages or unavailability of labor at established area wage rate or delays caused by failure of Client or Client’s agents to furnish information or to approve or disapprove Surveyor’s work promptly, or due to late or slow, or faulty performance by Client, other contractors or governmental agencies, the performance of whose work is precedent to or concurrent with the performance of Surveyor’s work, in the case of the happening of any such cause of delay, the time of completion shall be extended accordingly.

3. In the event that any changes are made in the plans and specifications by the Client or persons other than Surveyor which affect Surveyor’s work, any and all liability arising out of such changes is waived as against Surveyor and the Client assumes full responsibility for such changes unless Client has given Surveyor prior notice and has received from Surveyor written consent for such changes.

4. Surveyor is not responsible, and liability is waived by client as against Surveyor, for use by Client or any other person of any plans or drawings not signed by Surveyor.

5. All tracings, survey notes, and other original documents are instruments of service and shall be the property of Surveyor, except whereby law or precedent these documents become public property.

6. Surveyor’s liability to the Client for injury or damage to persons or property arising out of work performed for the Client and for which legal liability may be found to rest upon Surveyor, other than for professional errors and omissions, will be limited to Surveyor’s general liability insurance coverage. For any damage on account of any error, omission or other professional negligence, Surveyor’s liability will be limited to a sum not-to exceed Surveyor’s fee.

7. Fees and all other charges will be billed monthly as the work progresses and the net amount shall be due at the time of billing.

8. Interest 1-1/2% per month (but not exceeding the maximum rate allowable by law) will be payable on any amounts not paid within 30 days of the billing date, payment thereafter to be applied first to accrued interest and then to the principal unpaid amount. Any attorney’s fees or other costs incurred in collecting any delinquent amount shall be paid by the Client.

9. The Client shall pay the costs of checking inspection fees, zoning and annexation application fees, assessment fees, soils Surveying fees, soils testing fees, aerial topography fees, and all other fees, permits, bond premiums, title company charges, blueprints and reproductions, and all other charges not specifically covered by the terms of this agreement.

10. In the event all or any portion of the work prepared or partially prepared by Surveyor is suspended, abandoned, or terminated, the Client shall pay Surveyor for the work performed on an hourly basis, not to exceed any maximum contract amount specified herein.

INITIALS

16 E Plant Street, Winter Garden, FL 34787 • Phone 407.654.5355 • Fax: 407.654.5356 • Email: proposals@allen-company.com

www.allen-company.com
11. Any Opinion of the Construction Cost prepared by Surveyor represents his Judgment as a design professional and is supplied for the general guidance of the Client. Since Surveyor has no control over the cost of labor and material, or over competitive bidding or market conditions, Surveyor does not guarantee the accuracy of such opinions as compared to contractor bids or actual cost to the Client.

12. The Client agrees that in accordance with generally accepted construction practices, the construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property and that this requirement shall be made to apply continuously and not be limited to normal working hours.

13. In the performance of its professional services, Surveyor will use that degree of care and skill ordinarily exercised under similar conditions in similar localities and no other warranties express or implied are made or intended in any of Surveyor's proposals, contracts or reports. The Client agrees to defend, indemnify, and hold harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability proximately arising from the sole negligence of Surveyor.

14. In the event the Client fails to pay Surveyor within sixty (60) days after invoices are rendered, then Client agrees that Surveyor shall have the right to consider said default a total breach of this agreement and the duties of Surveyor under this agreement terminated upon five (5) days written notice. This agreement may be terminated by either Client or Surveyor upon thirty (30) days written notice. In the event of substantial failure of the other party to perform in accordance with the terms of this agreement. Client expressly agrees to hold Surveyor harmless from any liability arising out of Surveyor's termination of its services hereunder due to Client's failure to perform and/or pay in accordance with the provisions of this agreement. In the event of termination of this agreement, Client shall then promptly pay Surveyor for all of the fees, charges and services performed by Surveyor in accordance with the compensation arrangements under this agreement or on an agreed hourly basis.

15. The Client agrees not to solicit or be solicited by any employee, former employee or subconsultant of Allen & Company, Inc. for employment for this project or any other Client's project for one year after completion and/or termination of Allen & Company services without written consent. In event Client fails to adhere by said agreement, then Client will be billed for one year at the employee's billable rate.

16. Should litigation be necessary to enforce any term or provision of this agreement, or to collect any portion of the amount payable under this agreement, then all litigation and collection expenses, witness fees and court costs, and attorney's fees shall be paid to the prevailing party.

17. Should any provision herein be found or deemed to be invalid, this agreement shall be construed as not containing such provisions and all other provisions which are otherwise lawful shall remain in full force and effect, and to this end the provisions of this agreement are declared to be severable.

18. Services provided within this agreement are for the exclusive use of the Client.

19. There are no understandings or agreements except as herein expressly stated.

20. All "Standard Hourly Rates" will be maintained for 60 days from the date the contract is signed.

INITIALS ______
## DeBary Stormwater Projects
### CEI Services

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<th>Site</th>
<th>Senior Inspector</th>
<th>Project Administrator</th>
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**Total Hours:** 300 30 9

**Note:**
- Project Administrator Hours based on 10% of Senior Inspector hours
- Senior Project Engineer Hours based on 3% of Senior Inspector Hours

### Total Costs

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**Grand Total:** $28,863.34

Hours are estimated based on part time inspection of each site

Lab Materials testing is for Proctors etc. as required
INDIVIDUAL PROJECT ORDER NUMBER 8

February 25, 2022

Describing a specific agreement between Kimley-Horn and Associates, Inc. ("Kimley-Horn") and The City of DeBary (the "Client" or the "City") in accordance with the terms of the Continuing Contract for Professional Engineering Services ("Contract") dated January 6, 2021, which is incorporated herein by reference.

Identification of Project:

Project: City of DeBary Stormwater Improvement Project: West Highbanks Road Closed Storm Sewer System (Site 1)

Project Manager: Brent A. Lenzen, P.E.

Project Understanding:

This Individual Purchase Order (IPO) identifies the scope, schedule, and fee for engineering services associated with the City of DeBary Drainage Improvement Project: West Highbanks Road Closed Storm Sewer System (Site 1).

West Highbanks Road currently experiences stormwater flooding associated with the open convenance system along the north side of the road. The City has requested that the Kimley-Horn provides modeling, design, and permitting services for stormwater improvements associated with converting the existing ditch to a closed drainage system. This includes the design and permitting of 4,500 linear foot of stormwater pipe on West Highbanks Road from system outfall north of High Elwood Lane to Dutchmans Bend Road.

Based on discussions with the City, Kimley-Horn has been tasked to complete flood mitigation designs along West Highbanks Road. Kimley-Horn will provide a stormwater pipe sizing recommendation based on proposed conditions ICPR4 model scenarios and summarizing the alternative model results. Kimley-Horn will prepare a brief technical memorandum of findings to identify options to resolve the flooding problems. Options will consider additional capacity for sea level rise. The memorandum will document design alternatives, provided a recommended solution and sketches that will assist in the City to approve Kimley-Horn’s recommendations.

All design work shall comply with the direction of City provided at the memorandum review and prior to proceeding to the final design phase which includes Drainage Design and Construction Plans. Final design work shall comply with the requirements of the appropriate regulatory agencies.

Specific Scope of Services:

Task 1 – Drainage Study and Memorandum

Kimley-Horn will prepare a drainage study and provide a brief technical memorandum of findings to identify options to resolve the flooding problems. The memorandum will document design alternatives, provided recommended solution and sketches that will assist the City to approve Kimley-Horn’s recommendation. This task includes one (1) field review during a storm event. Kimley-Horn will provide the following services:

A. Attending meetings with City staff at the project kickoff meeting to identify available design information and record drawings, flooding complaints, Right of Way documentation, and utility information.

B. Develop Alternatives Model Scenarios using ICPR4. Kimley-Horn will provide a stormwater pipe sizing recommendation based on proposed conditions ICPR4 model scenarios and summarizing the alternative model results based on the 2-year, 10-year, 25-year and 100-year/24-hour storm events.

C. The alternative analysis will consider opportunities to use parcels owned by the City for stormwater management.
D. Options will consider additional capacity for sea level rise.
E. Consultant’s subconsultant will coordinate and attend pre-application meetings with the permitting agencies as necessary.

Task 2 – Drainage Design

Based on the preferred alternative established in the Drainage Study Task, Kimley-Horn will prepare the final design package for the stormwater improvements in accordance with City’s direction, FDOT Drainage Manual, and requirements by regulatory agencies.

Drainage Map(s) will be prepared for the project at a scale of 1" = 200’. The drainage maps will show roadway drainage basins, pond locations, existing drainage features, offsite basins and flow patterns/arrows. Design information relative to the proposed storm sewer pipes, drainage structures and swales will be shown on the drainage plan and profile sheets. Proposed drainage structure cross sections are not included in this Task.

Kimley-Horn will design roadside swales and stormwater management as needed to accommodate the Project. Drainage calculations will be prepared and documented in a Drainage Report.

The drainage design will incorporate water quantity and quality analysis results completed as part of the Drainage Study including design of one detention pond proposed study phase of this project.

Existing underground utilities will be shown based on information provided by the utility companies or as identified during surveying efforts.

Task 3 – Construction Plans

Based on the designs identified in Task 1, Kimley-Horn will prepare a plan set including construction plan for the stormwater improvements that will include West Highbanks Road from system outfall north of High Elwood Lane to Dutchmans Bend Road. The plan sheets will be prepared on 11”x17” half size sheets. Kimley-Horn will submit 60% plans to the City for review and comment prior to developing final plans for submittal to the City. Kimley-Horn will respond to one (1) round of comments from the City. It is anticipated that Temporary Traffic Control Plans (TTCP) will be prepared by the Contractor and is not included this Task.

Kimley-Horn will conduct one (1) coordination meeting with utility owners to coordinate impact of the proposed improvements on their facilities. Kimley-Horn will submit construction plans to the utility companies once during the design phase in an effort to identify conflicts for relocation from the respective utilities and submit them to the City for inclusion in the bid documents.

This task does not include utility design and if required, can be performed as an additional service.

The construction plans set will include one (1) of the following items:
- Key Sheet
- General Notes
- Project Layout Sheet
- Plan/Profile Sheets
- Cross Sections
- Erosion Control Plans
- Construction Details

Task 4 – Permitting Coordination

It is anticipated that the drainage improvements will require a St. Johns River Water Management District (SJRWMD) Environmental Resource Permit (ERP) and a FDEP permit. Kimley-Horn will prepare the permit applications associated with the SJRWMD and the FDEP permits. Kimley-Horn will respond to one (1) request for additional information (RAI) from the SJRWMD and one (1) RAI from the FDEP. Any permit fees or mitigation costs will be the responsibility of the Client. Permitting services beyond the requirements outlined above will require additional scope and fees.
Task 5 – Environmental

Kimley-Horn has retained the services of BDA Environmental Consultants to perform the environmental analysis for Highbanks Road. A BDA scientist will review the site for wetlands that may be considered jurisdictional by the St. Johns River Water Management District (SJRWMD), flag wetlands or surface waters, and will assess the site for the occurrence and potential for occurrence of wildlife species listed as Threatened or Endangered (Listed Species). BDA scientific staff will coordinate with the project engineer to prepare the environmental report to accompany the application for a SJRWMD Environmental Resource Permit (ERP), as well as prepare and submit the application for a Florida Department of Environmental Protection (FDEP) Environmental Permit. A detailed description and breakdown of hours for BDA’s services is attached at the back of this scope for reference.

Task 6 – Survey and Mapping Services

Kimley-Horn will retain the services of Allen & Company, Inc. to perform the survey for the West Highbanks Road from system outfall north of High Elwood Lane to Dutchmans Bend Road. Right of way survey will include preparation of depicting computed existing/apparent right-of-way lines within the project limits. Refer to attached subconsultant proposal for additional information.

Task 7 – Geotechnical Services

Kimley-Horn will retain the services of Terracon, Inc. to perform auger borings and field permeability tests for stormwater pond area. Refer to attached subconsultant proposal for additional information.

Task 8 – Bid Assistance Services

Kimley-Horn will prepare one (1) opinion of probable construction cost and one (1) contractor bid tabulation form for use by the City during the bidding process. Kimley-Horn will attend one (1) pre-bid meeting and provide input as directed by the City. Kimley-Horn will prepare responses to questions submitted by the contractors to the City during the bidding period.

Task 9 – Construction Phase Services

Kimley-Horn will review drainage structure shop drawings submitted by the Contractor in accordance with standard FDOT procedures. The City will be responsible for the receipt, distribution, and disposition of all contractor submittals, including project logs. The term “shop drawings” include all drawings, diagrams, illustrations, transportation procedures, manuals, and design calculations submitted by the Contractor to define some portion of the project.

Kimley-Horn will provide written responses to the City for up to two (2) Contractor Requests for Information (RFI).

Kimley-Horn will attend up to two (2) progress meetings during construction as requested by the City. This task does not include engineering inspection services.

Task 10 – Construction Engineering and Inspection (CEI)

Kimley-Horn has retained the services of SAI Consulting Engineers, Inc. to provide Construction Engineering and Inspection (“CEI”) Services. This task includes the following items:

- Part-time field inspection services
- Daily work reports for days our staff is on-site
- On-Site materials testing services (Densities, concrete tests etc.)
- Laboratory materials testing (earthwork proctors etc.) through a sub-consultant
- Attend project meetings
- Contractor’s schedule review

SAI’s fee breakdown is attached at the back of this scope for reference.
Deliverables

Kimley-Horn will provide the following deliverables associated with this project:

- Construction Plans
- Technical memorandum
- SJRWMD Permit Package

Additional Services

The following services are not included in this IPO but may be performed if authorized by the City. Payment for these additional services will be agreed upon prior to their performance.

- Attendance at meetings in addition to those noted in the scope of services
- Certified Arborist evaluation for tree preservation
- Temporary Traffic Control Plans
- Geotechnical services
- Utility Plans
- Subsurface Utility Verification (SUE)

Information Provided By Client:

The City will provide the following information, upon which Kimley-Horn can rely:

- Available right of way data
- Available record or as-built plans
- Available permits
- Data regarding the existing road conditions
- LIDAR/Contours

Schedule:

Tasks 1-8 are anticipated to be completed within 180 calendar days of notice to proceed. The completion of Task 9 and 10 will depend on the construction schedule.

Fee and Billing:

Kimley-Horn will complete the above scope of services for the lump sum fees detailed below, inclusive of office overhead expenses. Services provided under this will be invoiced on a monthly basis. All invoices will include a description of services provided. Approval from the City shall be required for all invoiced travel expenses and meetings. Fee breakdown tables for the lump sum tasks noted below have been included in Appendix A for reference.
## Fee Breakdown

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Sub-Total (Labor) $250,620

Attachments: Appendix A

---

ACCEPTED:
The City of Debary, Florida

BY: ________________________________

TITLE: ________________________________

DATE: ________________________________

KIMLEY-HORN AND ASSOCIATES, INC.

By: ________________________________

Brent A. Lenzen, P.E., Associate/Assistant Secretary

Date: February 25, 2022
APPENDIX A

LUMP SUM FEE BREAKDOWN
### APPENDIX A - CONSULTANT'S COMPENSATION PROPOSAL

#### CIVIL BREAKDOWN OF FEES

**Kimley-Horn and Associates, Inc.**

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**Kimley-Horn and Associates, Inc.**

City of Osceola

2020/02/22
BDA
ENVIRONMENTAL CONSULTANTS

February 24, 2022
File: 2022015-050

SENT VIA ELECTRONIC MAIL

Mr. Brent Lenzen, P.E.
Kimley-Horn
189 South Orange Avenue, Suite 1000
Orlando, Florida 32801
Phone: (407) 427-1610
E-mail: Brent.Lenzen@kimley-horn.com

RE: Proposal for Environmental Services
Highbanks Road - Environmental Services
City of DeBary, Florida

Dear Mr. Lenzen:

Breedlove, Dennis & Associates, Inc. (BDA) is pleased to provide the following proposal for environmental services on the City of DeBary Highbanks Road - Environmental Services project site located north of Fort Florida Road, City of DeBary, Volusia County, Florida (Site). Pursuant to your request, the following environmental services will be provided:

Task No. 1 – Environmental Site Review and Delineation

BDA scientists will review the Site for wetlands and surface waters that may be considered jurisdictional by the St. Johns River Water Management District (SJRWMD) pursuant to Chapter 62-340 of the Florida Administrative Code (FAC), and Florida Department of Environmental Protection pursuant to Chapter 62-340 FAC for state assumed waters, and the City of DeBary pursuant to the Land Development Code (Section 4-232). BDA will field flag wetlands or surface waters within the Site boundary and GPS the approximate flag locations with a hand-held Garmin. Any wetland delineation conducted will be suitable for planning purposes but will not be binding until inspected and approved by local, state, and federal agency staff. Please note that wetland flags will need to be located by a Florida licensed surveyor as part of the regulatory review; this task does not include costs associated with the wetland survey.

BDA will also review in-house databases, including the Natural Resources Conservation Service soils map, SJRWMD Florida Land Use, Cover and Forms Classification System data, publicly available databases and aerial photography to assist with this review.
As part of the Site review, BDA scientists will assess the Site for the occurrence and potential for occurrence of wildlife species listed as Threatened or Endangered (Listed Species) by the U.S. Fish and Wildlife Service pursuant to the Endangered Species Act, 1973, 16 United States Code 1531-1544, December 28, 1973, as amended or the Florida Fish and Wildlife Conservation Commission (FWC) pursuant to Chapter 68A-27 FAC (Listed Species). Assessment for the occurrence and likelihood of occurrence of Listed Species will include documentation through direct observation, auditory signal, or sign (tracks, scat, etc.). BDA scientists will also collect data on habitat types occurring onsite for comparison with known habitat preferences of Listed Species, including listed plants, known to occur in Volusia County, Florida. BDA will also review in-house databases associated with the extent and documented ranges and occurrence records of Listed Species, to include a review of the FWC bald eagle (Haliaeetus leucocephalus) nest database and wading bird rookery database to identify possible active eagle nests and wading bird rookeries within the vicinity of the Site.

The results of our data collection and analysis will be incorporated into the supporting documents for SJRWMD and/or Florida Department of Environmental Protection (FDEP) environmental permitting Tasks.

Please advise us of any special conditions for access or notifications that must be provided.

**Task 2 - St. Johns Water Management District Environmental Permitting**

BDA scientific staff will coordinate with the project engineer to prepare the environmental report to accompany the application for a SJRWMD Environmental Resource Permit (ERP). The purpose of this report is to address the environmental review criteria that the SJRWMD will require as part of the ERP application review, including current Site conditions and the mitigation plan. Typically, this report will complement the engineering submittal as an attachment to the application, and will include the following information:

- Overview of the project
- Description of upland and wetland vegetative communities
- A review for the occurrence of listed wildlife and plant species
- Description of wetland impacts, if any
- Mitigation and monitoring plan, as applicable
- Documentation to address the environmental review criteria in the SJRWMD Applicant's Handbook, Volume I
- Documentation to satisfy public interest criteria
- Preparation of supporting exhibits/graphics

The project boundary, preferably in Computer Aided Design or Geographic Information System, and/or
legal description will be needed prior to initiating work and is expected from the project engineer. The project engineer will also supply the final Site plan or stormwater/earthworks plan (preferably in digital form). Any subsequent modifications to the project boundary or Site plan that necessitate changes to the above-referenced report or the accompanying graphics will be billed as additional requested services.

Should the SJRWMD require additional information, BDA will coordinate with SJRWMD staff and the project engineer as required and prepare a response for one request for additional environmental information. BDA will also attend one field meetings with SJRWMD to review the extent of wetlands and the mitigation plan, if necessary.

Task 3 - Florida Department of Environmental Protection Environmental Permitting

FDEP will regulate the filling within wetlands pursuant to Section 404 of the Clean Water Act. A project generally will require an Individual Permit (IP) if impacts to the jurisdictional wetlands or surface waters are greater than or equal to 0.5 acre, and a General Permit if wetland impacts are less than 0.5 acre. If no Section 404 waters are present on the Site or there are no impacts to Section 404 waters, then a No Permit Required (NPR) determination can be requested from FDEP. It is likely that the pond within the Highbanks Marina site would be regulated as a Section 404 water by FDEP, but it is not known which type of permit will be necessary for the work on the Site. As such, detail is provided for permitting requirements, but a cost range is included since the application requirements and time lines are different depending on the type of permit required. The application report will typically include the following information:

**General Permit:**
- Overview of the project,
- Description of upland and wetland/surface water communities,
- Description of wetland/surface water impacts, including cumulative impacts.
- Mitigation plan,
- Review of federally listed wildlife and plant species,
- Supporting graphics.

**Individual Permits:**
- Overview of the project,
- Description of upland and wetland/surface water communities,
- Description of wetland/surface water impacts, including cumulative impacts.
- Mitigation plan,
- Review of federally listed wildlife and plant species,
- Public interest review criteria,
- Alternative analysis,
Mr. Brent Lenzen, P.E.
February 24, 2022
Page 4

- Avoidance and minimization criteria, and
- Supporting graphics.

This task will include one response to a Request for Additional Information (as needed) and one Site review with FDEP staff to review the extent of wetlands, jurisdiction, and the mitigation plan. The preparation of any additional information beyond this scope of work will be addressed in a work scope addendum.

**Listed Species**

Following the Site review, a separate work scope will be provided if necessary to address permitting of Listed Species.

**Cost of Services and Invoicing**

The estimated cost for the proposed services identified above is as follows:

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<th>Task</th>
<th>Description</th>
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<td>Environmental Site Review and Delineation</td>
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<td>2</td>
<td>SJRWMD Environmental Permitting</td>
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<td>FDEP Individual Permit</td>
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The total lump sum cost will be one of the following:

- Task 1, Task 2, Task 3 GP: $17,990.00, or
- Task 1, Task 2, Task 3 IP: $20,895.00

Not that the lump sum cost includes only the tasks above, including only the number of responses and field reviews. Anything additional, including permitting or coordination for listed species, will require a work scope addendum.

For the hourly breakdown, see attached table.

Billing will be on a monthly basis in accordance with the enclosed Schedule of Professional Fees and subject to the enclosed Terms and Conditions, with the final lump sum amount due upon project completion. Space has been provided below for your acceptance of this proposal, and your signature hereon will constitute a contract between us for the work. We can begin immediately upon receipt of the signed proposal and your authorization to proceed. Please return the signed copy to our office. A copy of
the fully executed contract will be returned for your files. Thank you for your consideration of our company for environmental services.

Sincerely yours,

[Signature]

Jennifer L. Rasiniski, Ph.D., PWS
Principal Scientist

W. Jeffrey Parde, C.E.P., M.S., M.B.A.
Senior Vice President

Accepted by:

Brent Lenzen, P.E.
Kimley-Horn

[Signature]

W. Jeffrey Pardue, C.E.P., M.S., M.B.A.
Senior Vice President
Breedlove, Dennis & Associates, Inc.

JLR/WJP/tnp

Enclosures
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# SCHEDULE OF PROFESSIONAL FEES

**Effective March 28, 2015**

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<td>145.00</td>
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<tr>
<td>Senior Scientist</td>
<td>140.00</td>
</tr>
<tr>
<td>Scientist IV</td>
<td>110.00</td>
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<tr>
<td>Scientist III</td>
<td>100.00</td>
</tr>
<tr>
<td>Scientist II</td>
<td>90.00</td>
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<tr>
<td>Scientist I</td>
<td>75.00</td>
</tr>
<tr>
<td>Environmental Specialist IV</td>
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<tr>
<td>Environmental Specialist III</td>
<td>75.00</td>
</tr>
<tr>
<td>Environmental Specialist II</td>
<td>65.00</td>
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<tr>
<td>Environmental Specialist I</td>
<td>55.00</td>
</tr>
<tr>
<td>Senior Geographic Information Systems (GIS) Analyst</td>
<td>140.00</td>
</tr>
<tr>
<td>GIS Analyst III</td>
<td>120.00</td>
</tr>
<tr>
<td>GIS Analyst II</td>
<td>110.00</td>
</tr>
<tr>
<td>GIS Analyst I</td>
<td>100.00</td>
</tr>
<tr>
<td>Word Processor</td>
<td>50.00</td>
</tr>
<tr>
<td>Librarian</td>
<td>35.00</td>
</tr>
<tr>
<td>Clerk</td>
<td>30.00</td>
</tr>
</tbody>
</table>

Terms: Net 30 days. Unpaid balances will be subject to interest at the rate of 1.5% per month or the maximum permissible under state law, whichever is less, starting 30 days from the invoice date.

A 10% fee will be added to the following items: laboratory fees, sub-consultant fees, and overnight travel.

Expert witness at 125% of schedule fees.
BDA
ENVIRONMENTAL CONSULTANTS

TERMS AND CONDITIONS

1. Other support provided at the request of the Client or representatives of the Client including, but not limited to, team meetings, agency negotiations, public presentations, mitigation design, permitting assistance, sufficiency responses or additional analyses not mentioned elsewhere in this Proposal will be billed on a time and materials basis according to the attached rate schedule. All requested services must be approved by the Client before additional support can be initiated.

2. Unless specified elsewhere in the Proposal, the proposed costs constitute Breedlove, Dennis & Associates, Inc.’s (BDA) estimate of the charges required to complete the Project as defined. Final costs for this Project may vary from the estimated costs. For many projects, all activities are often initially not fully definable. As the Project progresses, the facts uncovered may alter the scope of work and consequently the cost of completion. BDA will inform the Client of such situations so that negotiations of change in scope and fees can be accomplished as required.

3. BDA’s fees are based on the actual time required by the individuals assigned to the Project task, plus reimbursable expenses. Reimbursable expenses mean the actual expenses incurred directly or indirectly in connection with the Project. Reimbursable expenses include, but are not limited to long distance telephone calls, computer charges, living and travel out-of-town, inter-city travel, reproduction of reports, drawings and documents, and special fees. Client shall compensate the consultant for reimbursable expenses. Individual hourly rates vary according to the degree of responsibility involved and the skill required. BDA will submit our bill for these services monthly. Payment is due upon submission.

4. After January 1, 2022, all hourly and daily rates quoted within this contract may increase by 5%, at the determination of BDA, upon written notice to Client, and may increase by 5% annually thereafter.

5. This Proposal to perform services for this Project shall remain open for acceptance for a period of sixty (60) days from the date thereof, after which time BDA reserves the right to review, revise or withdraw its Proposal.

6. All information furnished by Client to BDA shall be returned to Client upon the conclusion of the Work unless the same shall have been consumed or merged into the Work. BDA may retain copies of any such information furnished to BDA by Client and BDA shall, in all events, retain full possession and ownership of its field and Project notes and all other documents or data generated, consumed or merged into any reports, opinions, or applications required in connection with the Project and the Work.

7. This Contract may be terminated by either Party for reason or for no reason by giving thirty (30) days written any notice to the other Party. Said notice shall be sufficient if it is delivered to the Party personally or mailed by certified mail to the Party's mailing address. Upon any termination under this paragraph, BDA will prepare a final invoice following the date of a final termination notice which date shall be the "Effective Date of Termination." Where the method of payment is based on time and materials, the final invoice will be based on reimbursement for all services and expenses associated with the Project up to the Effective Date of Termination.

8. Neither BDA nor Client shall be liable to the other for any damages whatsoever caused by termination of this
Contract or failure to perform under this Contract, except for services actually performed and costs and commitments actually incurred by BDA under this Contract, prior to the Effective Date of Termination. In no event shall either Party be liable to the other for any other claim of direct, indirect, special, incidental, or consequential damages (including loss of profits) whether based on contract, tort, or another legal theory.

9. The Parties to this Contract agree to make the submission to mediation of any dispute or controversy arising out of this Contract, as set forth herein, an express condition precedent to any legal or equitable action or proceeding of any nature whatsoever. All disputes between the Parties to this Contract arising out of or in connection with this Contract shall be referred for mediation to a mediator who is a member of the Florida Bar in good standing, and who is mutually acceptable to all Parties subject to the dispute. Each Party to all disputes submitted for mediation shall pay an equal share of the costs and fees charged by the mediator.

10. The Client acknowledges that it has secured legal rights to the property upon which the project will be developed. The Client further acknowledges and agrees that the type of services to be performed by BDA are covered under Florida Statutes 713.03 (Liens for professional services) and that the non-payment of fees owed under this Agreement may result in a mechanic's lien or other encumbrances being placed on the property upon which the project is/will be located.

11. This Contract shall be governed by and interpreted in accordance with the laws of the State of Florida, and the Parties expressly agree that any mediation proceeding, or any action at law or suit in equity, shall be instituted and maintained only in the Courts of Orange County, Florida, and each Party waives the right to change of venue. It is agreed by and between the Parties that this agreement was executed in the State of Florida, United States of America. In the event BDA retains legal counsel to enforce any of the provisions of this agreement, the Client agrees to pay all reasonable attorneys fees and any additional attorney fees pursuing collection of this judgement.

12. This agreement, and any specified attachment, or exhibits attached constitute the entire agreement between BDA and Client and all promises, representations, understandings, and agreements with the respect to the subject matter hereof and inducements to the making of this agreement relied upon by either Party have been expressed herein, and may not be altered, amended, or modified unless in writing executed by the Parties hereto.

13. Neither this agreement nor any interest herein may be assigned by the Client without BDA's prior written consent. No Party shall be liable for delay in the performance hereunder do to causes beyond their control, including, but not limited to, acts of God, fire strikes, acts of war, or the intervention of governmental authority, but any such failure shall be remedied as soon as reasonably possible.

14. Each Party executes this agreement as an independent contractor and nothing herein shall be construed to form a joint venture, partnership, or any similar form of association.

15. In the event of default by Client in the payment of any sum to BDA when due, or in the performance of any of Client's obligations under this agreement, BDA shall have the right to terminate this agreement, until such time as the default may be cured. Client shall reimburse BDA for all costs and expenses to enforce collection of any monies from Client.
PROJECT PROPOSAL

Date: December 13, 2021
Client: Kimley-Horn
Project Type: Offsite Route / Topographic Survey
Project Name: W Highbanks Rd Drainage Design
Prepared By: James Rickman, P.S.M., Vice President / Executive Director of Land
Phone: 407.654.5355. Ext. 102
Email: Jim@allen-company.com
December 13, 2021

Kimley-Horn
116 South Kentucky Avenue
Lakeland, FL 33801
Attn: Brent Lenzen - Brent.Lenzen@kimley-horn.com
CC: Katie Gleason - Katie.Gleason@kimley-horn.com

RE: W Highbanks Rd Drainage Design - Letter of Agreement - Exhibit A (20211005-1)

Brent Lenzen:

We appreciate your consideration of ALLEN & COMPANY, INC. to provide professional Land Surveying services for the above referenced project. These services will include items listed on Exhibit “A” to be billed Lump Sum as shown on Exhibit “A”, attached, plus out-of-pocket expenses incurred on the client’s behalf. Also, included in this contract are the attached “Standard Provisions of Agreement for Professional Services”.

The survey will be prepared in accordance with the minimum technical standards for surveys as set forth in Chapter 5J-17 Florida Administrative Code, pursuant to Section 472.027, Florida Statutes.

The following additional provisions are included in this contract:

1. The terms of this agreement shall be valid for client acceptance for a period of sixty (60) days from the date of execution by Allen & Company, Inc. after which time this contract offer becomes null and void if not accepted formally (evidenced by receipt of an executed copy of this document).

2. This agreement may be terminated by either party within fifteen (15) days written notice. In the event of termination, Allen & Company, Inc. shall be compensated to the date of termination, including direct expenses then due.

3. All rates and fees quoted in this document shall be effective for a period of twelve (12) months, after which time they may be renegotiated with the client.
4. All original documents shall be retained by Allen & Company, Inc. and will remain their property. This information is proprietary and will not be shared with others without prior written consent. The client will be provided with reproducible copies of all original documents upon request, and at client expense.

5. The client will pay invoices upon receipt and understands interest charges of 1.5% per month will be applied to any unpaid balance. Allen & Company, Inc. may elect to stop work until payment is received. If work is stopped for thirty (30) days or more, Allen & Company, Inc. may be compensated for start-up costs when work resumes.

6. Upon client request, we will contract and/or coordinate with applicable transportation, environmental, geotechnical, and engineering consultants, and will rely upon their work; however, Allen & Company, Inc. assumes no liability for the accuracy of their work.

Thank you for this opportunity and we look forward to working with you on this exciting new project. Please sign, date and return a copy of this agreement as your authorization to proceed with these professional services. Should you have any questions, please do not hesitate to call.

Sincerely,

ALLEN & COMPANY, INC.

James Rickman
James L. Rickman P.S.M. Vice President

ACCEPTED BY (Sign & Print): ________________________________ DATE: ____________
EXHIBIT A

16 E. Plant Street
Winter Garden, FL 34787
Phone (407) 654-5355 • Fax: (407) 654-5356
Email: proposals@allen-company.com

Customer Information:
Kimley-Horn
116 South Kentucky Avenue
Lakeland, FL 33801

Quote Description:

20211005-1 - W Highbanks Rd Drainage Design

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>CONTRACT AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offsite Route and Topographic Survey of West Highbanks Road. (approximately 5,000 linear feet – see attached exhibit – area of scope). Includes location of all above ground features (i.e. trees, sidewalks, signs, roadways, storm structures with inverts, Sanitary manholes and inverts, etc...), spot elevations at intervals to depict detailed topographic data and 10 feet outside existing right-of-way. Also included is an Underground Utility Designation. Also see attached Exhibit B for Scope of Procedures and Limitations for SUE location</td>
<td>$29000.00</td>
</tr>
</tbody>
</table>

$29,000.00

QUESTIONS OR COMMENTS?
If you have any questions or comments concerning this proposal exhibit, please email proposals@allen-company.com

__________________________
Sign & Return
• Allen & Company, Inc. will provide all survey services on work described herein.

• Allen & Company, Inc. will utilize 2D GPR to scan for utilities and EM Equipment to locate utilities where access to utilities is available.

• A Sunshine 811 "LOCATE" ticket will be requested for the areas described to determine the utility providers within the project limits and to notify them of the request for coordination with the Allen & Company, Inc. utility locator.

• Allen & Company, Inc. approximate locate area is outlined in red on the attached image. The exact locate area will need to be designated at time of work.

• Allen & Company, Inc. will use paint and flags to mark located utilities and will provide a technician's field drawing of the located utilities.

• Allen & Company, Inc.'s scope of services does not include the locating of abandoned utilities that are no longer locatable, vacant conduits, gravity sewer, storm lines, small irrigation lines, and low voltage lines. (Unless otherwise specified at an additional cost).

• Client is responsible for ensuring that all electrical and lighting systems are energized and that all lights with outdoor light sensor systems are in use at time of locate work.

• If available, Allen & Company, Inc. requests that client provide as-builts, engineering prints, etc. of existing utilities.

• GPR Scans can only be performed in accessible areas that are clear of obstacles such as construction materials, pipes, vehicles, machinery, dirt/materials mounds, landscaping, trees, uneven terrain, water, etc.

• If needed, Allen & Company, Inc. can provide a quote for 3D GPR that typically provides additional/more comprehensive data.
TERMS AND CONDITIONS

(A) LIMITS OF GPR AND ELECTROMAGNETIC SERVICES: If Services are Provided
ACI will make every effort to horizontally detect the underground utilities, objects or voids described in the Scope
of Work or as requested at the time of work within the designated work area(s). However, ACI cannot mark
utilities/objects/voids that are undetectable. Therefore, ACI cannot guarantee that all subsurface
utilities/objects/voids will be accounted for. Locate limitations that ACI will not be held liable for include but are
not limited to:

• GROUND PENETRATING RADAR (GPR):
  - GPR investigations are highly site specific and can be limited by attenuation of GPR signals by subsurface
    materials.
  - GPR investigations are limited by uneven terrain conditions, high grass (over 3"), bushes, trees, debris, etc.
  - All vertically stacked utilities/objects may not be detected since GPR signals are reflected by the top most
    utility/object.
  - Some utilities/objects may not return a reflected signal to the GPR receiver.
  - GPR scans cannot be made immediately next to buildings/objects due to equipment restrictions.
  - Pipes with little or no liquid content at time of locate work may not be detected with GPR.
  - Locations of existing utilities scanned by ground penetrating radar (GPR) are to be deemed approximate in nature
    and in no way are to be construed as exact. Allen & Company, Inc. (ACI) will not be held responsible for damage to
    existing utilities located by GPR scanning.

• ELECTROMAGNETIC LOCATING:
  - The number of access points within designated locate area(s) may be limited or non-existent.
  - Utility or property owner may restrict or deny the use of utility access points.
  - Utility may not adequately carry the imposed current from the electromagnetic locate equipment.
  - Fiber & other non-metallic lines with no or non-working tracer wire are untoneable with electromagnetic locate
    equipment.
  - Locations of existing utilities designated by Electromagnetic Equipment (EM) are to be deemed approximate in
    nature and in no way are to be construed as exact. Allen & Company, Inc. (ACI) will not be held responsible for
    damage to existing utilities located by EM equipment.
(B) DESIGN ENGINEER and CONTRACTORS
Due to locate limitations, the client's/owner's Design Engineer is expected to gather and identify existing facility information from various prints and underground facility owners/operators to confirm that no other subsurface utilities/objects are present in the project area, and Contractors are responsible to abide by Florida Statutes 556.106 - Sunshine 811.

(C) MACHINE DEPTHS: (If Service is provided)
Machine depths are approximate readings, are not guaranteed depths, are provided for informational purposes only, and should not be relied upon for any type of subsurface work. ACI will not accept any responsibility for actions taken based on provided machine depths.

(D) VERTICAL EXCAVATION (DIRT SOFT DIG): Information/Limitations: (If Service is provided)
Soft Digs are made within grassed or otherwise unpaved surface conditions to a maximum depth of approximately 10 feet to determine the depth of the utility/object. If requested, ACI also will provide the size and material type.
• Soft Dig vertical depth measurements are made from the top of each exposed utility/object to the ground surface.
• The vertical depth range and visual inspection ability is dependent on events such as ground water level.
• Client must obtain/provide ACI with any required soft dig permits before soft dig work is performed. Client will be responsible for any permitting soft dig fines assessed by governing agency.

(E) CORE BORE WITH VERTICAL EXCAVATION (DIRT SOFT DIG): Information/Limitations: (If Service is provided)
A Core Bore is made in asphalt or concrete to vertically expose a utility/object to determine the depth of the utility/object from the top of the utility/object to the pavement surface.
• Vertical Excavation limits apply (See Item D).
• Test hole will be backfilled with like materials compacted in 6" lifts or with a flowable fill mixture.
• The current asphalt thickness will be replaced with double asphalt thickness.
• Asphalt/Concrete Core Bore Permits are to be furnished to ACI by the client prior to work being scheduled. Client is responsible for cost of all permits, MOT, Traffic Control, and any permitting fines assessed by governing agency.

(F) CERTIFICATE OF INS (COI): New/Revised COI Requests
• Client COI requirements must be provided to ACI prior to the Authorization to Proceed being issued.
• ACI will invoice client for all costs associated with client COI requirements that incur billable charges to ACI
The Client and Surveyor agree that the following Provisions shall be a part of their agreement:

1. Neither the Client nor Surveyor shall assign its interest in this agreement without the written consent of the other.

2. All agreements on Surveyor’s part are contingent upon, and Surveyor shall not be responsible for damages or be in default or be deemed to be in default by reason of: delays in performance by reason of strikes, lockouts, accidents, acts of God and other delays unavoidable or beyond Surveyor’s reasonable control, or due to shortages or unavailability of labor at established area wage rate or delays caused by failure of Client or Client’s agents to furnish information or to approve or disapprove Surveyor’s work promptly, or due to late or slow, or faulty performance by Client, other contractors or governmental agencies, the performance of whose work is precedent to or concurrent with the performance of Surveyor’s work, in the case of the happening of any such cause of delay, the time of completion shall be extended accordingly.

3. In the event that any changes are made in the plans and specifications by the Client or persons other than Surveyor which affect Surveyor’s work, any and all liability arising out of such changes is waived as against Surveyor and the Client assumes full responsibility for such changes unless Client has given Surveyor prior notice and has received from Surveyor written consent for such changes.

4. Surveyor is not responsible, and liability is waived by client as against Surveyor, for use by Client or any other person of any plans or drawings not signed by Surveyor.

5. All tracings, survey notes, and other original documents are instruments of service and shall be the property of Surveyor, except whereby law or precedent these documents become public property.

6. Surveyor’s liability to the Client for injury or damage to persons or property arising out of work performed for the Client and for which legal liability may be found to rest upon Surveyor, other than for professional errors and omissions, will be limited to Surveyor’s general liability insurance coverage. For any damage on account of any error, omission or other professional negligence, Surveyor’s liability will be limited to a sum not-to-exceed Surveyor’s fee.

7. Fees and all other charges will be billed monthly as the work progresses and the net amount shall be due at the time of billing.

8. Interest 1.1/2% per month (but not exceeding the maximum rate allowable by law) will be payable on any amounts not paid within 30 days of the billing date, payment thereafter to be applied first to accrued interest and then to the principal unpaid amount. Any attorney’s fees or other costs incurred in collecting any delinquent amount shall be paid by the Client.

9. The Client shall pay the costs of checking inspection fees, zoning and annexation application fees, assessment fees, soils Surveying fees, soils testing fees, aerial topography fees, and all other fees, permits, bond premiums, title company charges, blueprints and reproductions, and all other charges not specifically covered by the terms of this agreement.

10. In the event all or any portion of the work prepared or partially prepared by Surveyor is suspended, abandoned, or terminated, the Client shall pay Surveyor for the work performed on an hourly basis, not to exceed any maximum contract amount specified herein.

INITIALS ________
11. Any Opinion of the Construction Cost prepared by Surveyor represents his Judgment as a design professional and is supplied for the general guidance of the Client. Since Surveyor has no control over the cost of labor and material, or over competitive bidding or market conditions, Surveyor does not guarantee the accuracy of such opinions as compared to contractor bids or actual cost to the Client.

12. The Client agrees that in accordance with generally accepted construction practices, the construction contractor will be required to assume sole and complete responsibility for Job site conditions during the course of construction of the project, including safety of all persons and property and that this requirement shall be made to apply continuously and not be limited to normal working hours.

13. In the performance of its professional services, Surveyor will use that degree of care and skill ordinarily exercised under similar conditions in similar localities and no other warranties express or implied are made or intended in any of Surveyor’s proposals, contracts or reports. The Client agrees to defend, indemnify, and hold harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability proximately arising from the sole negligence of Surveyor.

14. In the event the Client fails to pay Surveyor within sixty (60) days after invoices are rendered, then Client agrees that Surveyor shall have the right to consider said default a total breach of this agreement and the duties of Surveyor under this agreement terminated upon five (5) days written notice. This agreement may be terminated by either Client or Surveyor upon thirty (30) days written notice in the event of substantial failure of the other party to perform in accordance with the terms of this agreement. Client expressly agrees to hold Surveyor harmless from any liability arising out of Surveyor’s termination of its services hereunder due to Client’s failure to perform and/or pay in accordance with the provisions of this agreement. In the event of termination of this agreement, Client shall then promptly pay Surveyor for all of the fees, charges and services performed by Surveyor in accordance with the compensation arrangements under this agreement or on an agreed hourly basis.

15. The Client agrees not to solicit or be solicited by any employee, former employee or subconsultant of Allen & Company, Inc. for employment for this project or any other Client’s project for one year after completion and/or termination of Allen & Company services without written consent. In event Client fails to adhere by said agreement, then Client will be billed for one year at the employee’s billable rate.

16. Should litigation be necessary to enforce any term or provision of this agreement, or to collect any portion of the amount payable under this agreement, then all litigation and collection expenses, witness fees and court costs, and attorney’s fees shall be paid to the prevailing party.

17. Should any provision herein be found or deemed to be invalid, this agreement shall be construed as not containing such provisions and all other provisions which are otherwise lawful shall remain in full force and effect, and to this end the provisions of this agreement are declared to be severable.

18. Services provided within this agreement are for the exclusive use of the Client.

19. There are no understandings or agreements except as herein expressly stated.

20. All "Standard Hourly Rates" will be maintained for 60 days from the date the contract is signed.

INITIALS ________
December 8, 2021

Kimley-Horn
189 South Orange Avenue, Suite 1000
Orlando, Florida 32801

Attn: Mr. Brent Lenzen, P.E.
P: (407) 427-1610
E: Brent.Lenzen@kimley-horn.com

Re: Proposal for Geotechnical Engineering Services
Proposed Stormwater Pond
405,407, and 409 W. Highbanks Road
Debary, Volusia County, Florida
Terracon Proposal No. PH1215411

Dear Mr. Lenzen:

We appreciate the opportunity to submit this proposal to Kimley-Horn (KHA) to provide Geotechnical Engineering services for the above referenced project. The following are exhibits to the attached Agreement for Services.

- Exhibit A: Project Understanding
- Exhibit B: Scope of Services
- Exhibit C: Compensation and Project Schedule
- Exhibit D: Site Location and Nearby Geotechnical Data
- Exhibit E: Anticipated Exploration Plan

Our base fee to perform the Scope of Services described in this proposal is $6,420 for the Geotechnical Engineering services. See Exhibit C for more details of our fees and consideration of additional services.

Your authorization for Terracon to proceed in accordance with this proposal can be issued by providing a sub-consultant agreement to our office.

Sincerely,
Terracon Consultants, Inc.

Shenna McMaster, P.E.
Senior Geotechnical Engineer

Eric A. McAra, P.E.
Senior Associate
Geotechnical Department Manager
EXHIBIT A - PROJECT UNDERSTANDING

Our Scope of Services is based on our understanding of the project as described by KHA and the expected subsurface conditions as described below. We have not visited the project site to confirm the information provided. Aspects of the project, undefined or assumed, are highlighted as shown below. We request the design team verify all information prior to our initiation of field exploration activities.

Site Location and Anticipated Conditions

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parcel Information</td>
<td>The project is located at 405,407, and 409 W. Hightbanks Road in Debary, Volusia County, Florida. Latitude/Longitude (approximate): 28.889893° N; 81.346273° W (See Exhibit D)</td>
</tr>
<tr>
<td>Current Ground Cover</td>
<td>405 and 409 W. Hightbanks Road were previously single-family residences. Google Earth imagery indicates the structures have been demolished and the lots are vacant with isolated trees. 407 W. Hightbanks Road is in its natural state and is heavily vegetated.</td>
</tr>
<tr>
<td>Existing Topography (from USGS Quad)</td>
<td>Site is relatively flat with ground surface elevations near +25 feet. Marshy, low-lying areas are mapped in the vicinity of the site.</td>
</tr>
<tr>
<td>Site Access</td>
<td>We expect the site, and all exploration locations, are accessible with our truck or ATV-mounted drilling equipment. Up to 5 hours of clearing may be required for access to boring locations.</td>
</tr>
<tr>
<td>Expected Subsurface Conditions</td>
<td>Our experience near the vicinity of the proposed development indicates subsurface conditions consist of sand with varying amounts of silt and clay and relatively high groundwater conditions</td>
</tr>
</tbody>
</table>

Planned Construction

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Provided</td>
<td>Project description in email from you dated 12/6/2021</td>
</tr>
<tr>
<td>Project Description</td>
<td>The project involves the construction of a stormwater pond at the site. We understand the pond will be up to 15 feet in depth.</td>
</tr>
</tbody>
</table>
EXHIBIT B - SCOPE OF SERVICES

Our proposed Scope of Services consists of field exploration, laboratory testing, and engineering/project delivery. These services are described in the following sections.

Field Exploration

The field exploration program consists of the following:

<table>
<thead>
<tr>
<th>Number of Borings</th>
<th>Planned Boring Depth (feet)</th>
<th>Planned Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>20</td>
<td>Stormwater pond location</td>
</tr>
</tbody>
</table>

1. Below ground surface.

We will also obtain a bulk soil sample from the borings for a laboratory permeability test.

Boring Layout: We use handheld GPS equipment to locate borings with an estimated horizontal accuracy of +/-20 feet. Field measurements from existing site features may be utilized.

Subsurface Exploration Procedures: We will advance soil borings with a truck or ATV-mounted drill rig. The machine auger borings are performed by hydraulically turning a 4-inch diameter continuous flight auger into the ground in 5 foot increments. Additional flights are added until the desired termination depth is achieved. The auger is then extracted without further rotation and representative soil samples are retrieved from the auger.

The samples will be placed in appropriate containers, taken to our soil laboratory for testing, and classified by a Geotechnical Engineer. In addition, we will observe and record groundwater levels during drilling and sampling.

Our exploration team will prepare field boring logs as part of standard drilling operations including sampling depths, penetration distances, and other relevant sampling information. Field logs include visual classifications of materials encountered during drilling, and our interpretation of subsurface conditions between samples. Final boring logs, prepared from field logs, represent the Geotechnical Engineer's interpretation, and include modifications based on observations and laboratory tests.

Property Disturbance: We will backfill borings with auger cuttings upon completion. Our services do not include repair of the site beyond backfilling our boreholes. Excess auger cuttings will be dispersed in the general vicinity of the boreholes. Because backfill material often settles below the surface after a period, we recommend boreholes to be periodically checked and backfilled, if necessary. We can provide this service, or grout the boreholes for additional fees, at your request.
Safety

Terracon is not aware of environmental concerns at this project site that would create health or safety hazards associated with our exploration program; thus, our Scope considers standard OSHA Level D Personal Protection Equipment (PPE) appropriate. Our Scope of Services does not include environmental site assessment services, but identification of unusual or unnatural materials encountered while drilling will be noted on our logs and discussed in our report.

Exploration efforts require borings (and possibly excavations) into the subsurface, therefore Terracon complies with local regulations to request a utility location service through Sunshine State One Call of Florida (SSOCOF). We consult with the owner/client regarding potential utilities, or other unmarked underground hazards. Based upon the results of this consultation, we consider the need for alternative subsurface exploration methods, as the safety of our field crew is a priority.

Private utilities should be marked by the owner/client prior to commencement of field exploration. Terracon will not be responsible for damage to private utilities not disclosed to us. If the owner/client is unable to accurately locate private utilities, Terracon can assist the owner/client by coordinating or subcontracting with a private utility locating service. Fees associated with the additional services are not included in our current Scope of Services but will be forwarded to our client for approval prior to initiating. The detection of underground utilities is dependent upon the composition and construction of the utility line; some utilities are comprised of non-electrically conductive materials and may not be readily detected. The use of a private utility locate service would not relieve the owner of their responsibilities in identifying private underground utilities.

Site Access: Client shall secure all necessary site related approvals, permits, licenses, and consents necessary to commence and complete the scope of services and will execute any necessary site access agreement. Terracon will be responsible for supervision and site safety measures for our own employees but shall not be responsible for the supervision or health and safety precautions from any third parties, including the Client’s contractors, subcontractors, or other parties present at the site.

In addition, Terracon retains the right to stop work without penalty at any time we believe it is in the best interests of Terracon’s employees or subcontractors to do so in order to reduce the risk of exposure to the coronavirus. The client agrees it will respond quickly to all requests for information made by Terracon related to Terracon’s pre-task planning and risk assessment processes. The client acknowledges its responsibility for notifying Terracon of any circumstances that present a risk of exposure to the coronavirus or individuals who have tested positive for COVID-19 or are self-quarantining due to exhibiting symptoms associated with the coronavirus. By acceptance of this proposal, without information to the contrary, we consider this as authorization to access the property for conducting field exploration in accordance with the Scope of Services.
Laboratory Testing

The project engineer will review field data and assign laboratory tests to understand the engineering properties of various soil strata. Exact types and number of tests cannot be defined until completion of field work. The anticipated laboratory testing may include the following:

- Water content
- Atterberg limits
- Organic content
- Grain size analysis
- Constant head permeability (includes 1 test)

Our laboratory testing program often includes examination of soil samples by an engineer. Based on the material's texture and plasticity, we will describe and classify soil samples in accordance with the Unified Soil Classification System (USCS).

Engineering and Project Delivery

Results of our field and laboratory programs will be evaluated by a professional engineer. The engineer will develop a geotechnical site characterization and develop appropriate geotechnical engineering recommendations for the project.

Your project will be delivered using our GeoReport® system. Upon initiation, we provide you and your design team the necessary link and password to access the website (if not previously registered). Each project includes a calendar to track the schedule, an interactive site map, a listing of team members, access to the project documents as they are uploaded to the site, and a collaboration portal. The typical delivery process includes the following:

- Project Planning – Proposal information, schedule and anticipated exploration plan will be posted for review and verification
- Site Characterization – Findings of the site exploration
- Geotechnical Engineering – Recommendations and geotechnical engineering report

When utilized, our collaboration portal documents communication, eliminating the need for long email threads. This collaborative effort allows prompt evaluation and discussion of options related to the design and associated benefits and risks of each option. With the ability to inform all parties as the work progresses, decisions and consensus can be reached faster. In some cases, only minimal uploads and collaboration will be required, because options for design and construction are limited or unnecessary. This is typically the case for uncomplicated projects with no anomalies found at the site.

When services are complete, we upload a printable version of our completed geotechnical engineering report, including the professional engineer's seal and signature, which documents
our services. Previous submittals, collaboration and the report are maintained in our system. This allows future reference and integration into subsequent aspects of our services as the project goes through final design and construction.

The geotechnical engineering report will provide the following:

- Boring logs with field and laboratory data
- Stratification based on visual soil classification
- Groundwater levels observed during drilling
- Site and Boring location plans
- Subsurface exploration procedures
- Description of subsurface conditions
- Estimated seasonal groundwater fluctuations
- Geotechnical engineering stormwater management design parameters (seasonal high, seasonal low and average wet season groundwater levels; permeability, porosity, and depth to confining layer).
EXHIBIT C - COMPENSATION AND PROJECT SCHEDULE

Compensation

Based upon our understanding of the site, the project as summarized in Exhibit A, and our planned Scope of Services outlined in Exhibit B, our base fee is shown in the following table:

<table>
<thead>
<tr>
<th>Task</th>
<th>Estimated Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subsurface Exploration, Laboratory Testing, Geotechnical Consulting &amp; Reporting</td>
<td>$6,420$1</td>
</tr>
</tbody>
</table>

1. See attached Scope of Services and Fee Estimate

Additional services not part of the base fee include the following:

<table>
<thead>
<tr>
<th>Additional Services (see Exhibit B)</th>
<th>Lump Sum Fee</th>
<th>Initial for Authorization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Utility Locate Service 1</td>
<td>$1,000</td>
<td></td>
</tr>
</tbody>
</table>

1. If the owner/client is unable to accurately locate private utilities, we can subcontract a private utility locating firm and/or utilize geophysical equipment, if necessary. The detection of underground utilities is dependent upon the composition and construction of utility lines. Some utilities are comprised of non-electrically conductive materials and may not be readily detected. The use of a private locate service does not relieve the owner of their responsibilities in identifying private underground utilities.

Our scope of services includes 5 hours for limited clearing for access to boring locations but does not include services associated with wet ground conditions or repair of damaged landscaping or vegetation. If such services are desired by the owner/client, we should be notified so we can adjust our scope of services.

Unless instructed otherwise, we will submit our invoice(s) to the address shown at the beginning of this proposal. If conditions are encountered that require Scope of Services revisions and/or result in higher fees, we will contact you for approval, prior to initiating services. A supplemental proposal stating the modified Scope of Services as well as its effect on our fee will be prepared. We will not proceed without your authorization.

Project Schedule

We developed a schedule to complete the Scope of Services based upon our existing availability and understanding of your project schedule. However, this does not account for delays in field exploration beyond our control, such as weather conditions, permit delays, or lack of permission to access the boring locations. In the event the schedule provided is inconsistent with your needs, please contact us so we may consider alternatives. We anticipate the Geotechnical Report will be submitted within 40 calendar days.
<table>
<thead>
<tr>
<th>GeoReport® Delivery</th>
<th>Posting Date from Notice to Proceed (^1, ^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Planning</td>
<td>2 days</td>
</tr>
<tr>
<td>Site Characterization</td>
<td>28 days(^3)</td>
</tr>
<tr>
<td>Geotechnical Engineering</td>
<td>40 days</td>
</tr>
</tbody>
</table>

1. Upon receipt of your notice to proceed we will activate the schedule component of our GeoReport® website with specific, anticipated calendar days for the three delivery points noted above as well as other pertinent events such as field exploration crews on-site, etc. Days are total calendar days from notice to proceed and are not accumulative.

2. We will maintain a current calendar of activities within our GeoReport® website. In the event of a need to modify the schedule, the schedule will be updated to maintain a current awareness of our plans for delivery.

3. Preliminary information can be provided at request after field work has been completed.
# SCOPE OF SERVICES AND FEE ESTIMATE

**PROPOSED STORMWATER POND**

405,407, AND 409 HIGHBANKS ROAD

DEBARY, VOLUSIA COUNTY, FLORIDA

TERRACON PROPOSAL NO. PH1205411

<table>
<thead>
<tr>
<th>DESCRIPTION OF WORK</th>
<th>QTY.</th>
<th>RATE</th>
<th>UNIT</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. FIELD EXPLORATION</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Crew and Equipment Mobilization</td>
<td>1</td>
<td>$450.00</td>
<td>per trip</td>
<td>$450.00</td>
</tr>
<tr>
<td>--- Standard Drilling Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Auger Borings (3 to 20 feet)</td>
<td>60</td>
<td>$11.50</td>
<td>per l.f.</td>
<td>$690.00</td>
</tr>
<tr>
<td>--0 to 50' depth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Site Reconnaissance / Utility Coordination</td>
<td>10</td>
<td>$70.00</td>
<td>per hour</td>
<td>$700.00</td>
</tr>
<tr>
<td>--- Senior Engineering Technician</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Drill Crew Time (Clearing - 2 man crew)</td>
<td>5</td>
<td>$175.00</td>
<td>per hour</td>
<td>$875.00</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$2,715.00</td>
</tr>
</tbody>
</table>

| **II. LABORATORY TESTING** |      |      |      |        |
| A. Visual Examination / Stratify | 1   | $145.00 | per hour | $145.00 |
|   --- Project Manager/Engineer |      |      |      |        |
| B. Grain Size Analysis | 6   | $50.00 | each | $300.00 |
|   --- Wash Sieve No. 200 |      |      |      |        |
| C. Organic Content | 2   | $45.00 | each | $90.00 |
| D. Liquid and Plastic Limits | 3   | $80.00 | each | $240.00 |
| E. Natural Moisture | 11  | $15.00 | each | $165.00 |
| F. Constant Head Permeability Testing | 1   | $250.00 | each | $250.00 |
| **Subtotal** |      |      |      | $1,190.00 |

| **IV. ENGINEERING AND TECHNICAL SERVICES** |      |      |      |        |
| A. Principal Engineer | 2   | $195.00 | per hour | $390.00 |
| B. Project Manager/Engineer | 12  | $145.00 | per hour | $1,740.00 |
| C. CADD Operator | 3   | $85.00 | per hour | $255.00 |
| D. Secretarial | 2   | $65.00 | per hour | $130.00 |
| **Subtotal** |      |      |      | $2,515.00 |

**TOTAL FOR GEOTECHNICAL ENGINEERING SERVICES** $6,420.00
Highbanks Road- CEI Services

<table>
<thead>
<tr>
<th>Hours</th>
<th>Billing Rate</th>
<th>Total Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>280</td>
<td>$77.87</td>
<td>$21,803.60</td>
</tr>
<tr>
<td>28</td>
<td>$104.22</td>
<td>$2,918.16</td>
</tr>
<tr>
<td>8.4</td>
<td>$152.86</td>
<td>$1,284.02</td>
</tr>
</tbody>
</table>

Laboratory Materials Testing $500.00

Total Costs $26,505.78

Costs are based on part time inspection.
The Inspector will complete Daily Work Reports for the days they visit the project.
Cost includes attendance of Pre-construction conference and project meetings.
Cost includes review of Contractor's work schedule.
Costs do not include a Resident Compliance Specialist for EEO compliance.
Based on 7-month project duration.

Administrative Duties to be handled by others including:
- RFI's
- Shop Drawing Reviews
- Meetings and meeting minutes
- Review of Pay Applications
- As-built reviews
- Permit Certifications
<table>
<thead>
<tr>
<th>Priority</th>
<th>Project #</th>
<th>Address</th>
<th>Description</th>
<th>Bldg. Flood</th>
<th>Septic Issues</th>
<th>Well Issues</th>
<th>No. Props. Affected</th>
<th>Esmt Needed</th>
<th>Recommended Solution / Option</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NORTHWEST</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium 1</td>
<td>4</td>
<td>West Highbanks Road (North) Closed Storm Sewer</td>
<td>Fill in deep roadside ditches, improve area drainage (Dutchmans Bend Rd to Marina)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
<td>Yes</td>
<td>existing ditch conversion to closed system. Option to consider additional capacity for sea level rise effects</td>
</tr>
<tr>
<td>High 2</td>
<td>5-6</td>
<td>474 Eagle Brook Court</td>
<td>Localized flooding, low lying properties, limited storm sewer infrastructure, grading alone may not help.</td>
<td>Very close</td>
<td>No</td>
<td>No</td>
<td>4+</td>
<td>Possibly</td>
<td>extend storm sewer with inlets along the road front, possible extension to rear yards with new easements</td>
</tr>
<tr>
<td>Low 3</td>
<td>-</td>
<td>116 Glen Abbey Lane</td>
<td>Groundwater seepage, possible underdrain malfunction, high/perched water table</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>No</td>
<td>Underdrain replacement/new installation</td>
</tr>
<tr>
<td>Low 4</td>
<td>-</td>
<td>221 Glen Abbey Lane</td>
<td>Groundwater seepage, possible underdrain malfunction, high/perched water table</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>No</td>
<td>Underdrain replacement/new installation</td>
</tr>
<tr>
<td>Low 5</td>
<td>-</td>
<td>387 Glen Abbey Lane</td>
<td>Dead-end exfiltration system, high water table during rainy season, flooding around inlets, no erosion</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>No</td>
<td>connect to nearby underdrain, convert to regular storm sewer, leave sideyards with new easements</td>
</tr>
<tr>
<td>Medium 6</td>
<td>7-8</td>
<td>202 Yorkville Place</td>
<td>Dead-end exfiltration system, high water table during rainy season, flooding around inlets, no erosion</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1+</td>
<td>No</td>
<td>evaluate drainage throughout both cul-de-sacs, extend storm sewer.</td>
</tr>
<tr>
<td>High 7</td>
<td>9-10</td>
<td>James Pond Pump Station; 333 E. Highbanks Rd</td>
<td>Road flooding; flat low lying area, no storm infrastructure near or on property</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>3</td>
<td>No</td>
<td>Permanent pump station, existing force main drylines; extend south properties storm sewer connection to Adelaide Street system.</td>
</tr>
<tr>
<td><strong>SOUTHWEST</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low 8</td>
<td>11-12</td>
<td>20 Catalina Drive</td>
<td>Low point, area runoff drains through property to rear</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1+</td>
<td>Possibly</td>
<td>1st - retention swales from road highpoint to highpoint; 2nd - storm sewer to divert to nearby pond w easements</td>
</tr>
<tr>
<td>Low 9</td>
<td>13</td>
<td>60 Azalea Drive</td>
<td>Side yard flooding, low lying area - minor &quot;bowl&quot;.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>1st - retention swales from road highpoint to highpoint; 2nd - reshape sideyards to control puddle w easements</td>
</tr>
<tr>
<td>High 10</td>
<td>14-15</td>
<td>Benson Junction Flooding</td>
<td>Drainage connection to FDOT system disconnected, backs up to wetland and floods road</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>2+</td>
<td>No</td>
<td>Storm sewer system to drain to Shell Road</td>
</tr>
<tr>
<td>Low 11</td>
<td>16</td>
<td>Alexander Island / Ft. Florida Road</td>
<td>Improve roadside drainage, fill in deep roadside ditches</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
<td>No</td>
<td>Boardwalk along existing berm (floating capability); Storm sewer trunk line under Ft. Fla Rd EDP</td>
</tr>
<tr>
<td><strong>SOUTHEAST</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium 12</td>
<td>17-18</td>
<td>218 Lago Vista St. (119-123 Sunrise Blvd.)</td>
<td>Low lying properties, paved roadside with very minor to no swale, no nearby storm sewer</td>
<td>Very close</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>reshape roadside swale to drain onto Bayou Vista r/w; or drain to nearby retention w land purchase.</td>
</tr>
<tr>
<td>Low 13</td>
<td>19-20</td>
<td>29-31 Bass Lake Drive</td>
<td>Drainage not getting to exist. Inlets-blocked by drainfield or driveways, low lying</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>4+</td>
<td>No</td>
<td>29 Bass Lake - inlet to cross road, 33 Bass Lake - inlets to cross garage d/w and roadside swale reshape.</td>
</tr>
<tr>
<td>Low 14</td>
<td>21</td>
<td>22, 24 &amp; 34 Madera Road</td>
<td>Lakeside properties where eastern properties drain through to reach lake, lake level effects</td>
<td>close</td>
<td>No</td>
<td>No</td>
<td>3+</td>
<td>?</td>
<td>reshape roadside swale to direct drainage to side lot lines, possibly reshape side yards; New pump conn.</td>
</tr>
<tr>
<td>Low 15</td>
<td>22</td>
<td>53 Madera Road</td>
<td>End of street, drainage collects on its way to lake.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>No</td>
<td>Reshape roadside swales as retention to &quot;lessen the load&quot;, from road highpoint on both sides of Lakewood Dr.</td>
</tr>
<tr>
<td>Low 16</td>
<td>23-24</td>
<td>144-148 Debary Drive</td>
<td>Low point of road, drainage flows through to reach private depression to rear of lots</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>3+</td>
<td>?</td>
<td>possible purchase of 144 Debary Dr for area retention</td>
</tr>
<tr>
<td>Low 17</td>
<td>25-26</td>
<td>253 Sunrise Boulevard/250 Fraser Rd/ 257 Debary Dr Dredging</td>
<td>Water not moving in sideyard ditch, ditch is discharge point for wetland across street</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1+</td>
<td>Yes</td>
<td>1. do nothing; 2. formalize ditch connection to wetland behind 249 Sunrise w easement; 3. pipe ditch w esmts.</td>
</tr>
<tr>
<td>Low 18</td>
<td>27-28</td>
<td>201-218 Grande Vista Street</td>
<td>Low lying, minor &quot;bowl&quot;, front property corner flooding destroyed driveway</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>4+</td>
<td>No</td>
<td>reshape roadside swales, inlets to drain to nearby retention w land purchase.</td>
</tr>
<tr>
<td>Low 19</td>
<td>29</td>
<td>32 Estrella Road / 142 Lakewood Drive</td>
<td>Road dips down and remains flooded, &quot;bowl&quot; area</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>1st. ret. swales from road HP to HP all directions; 2nd - storm sewer to nearby City prop. -Verona Rd.</td>
</tr>
<tr>
<td>Low 20</td>
<td>30-31</td>
<td>221, 232-234 Aqua Vista Street</td>
<td>Low lying properties, road runoff channels along property frontage; Basement home with sump pump</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>2</td>
<td>No</td>
<td>1. improve rd. discharge upstream (222-224 Aqua Vista); 2. Asphalt curb at 230-232; 3. impr. Downstream dnr.</td>
</tr>
<tr>
<td>High 21</td>
<td>32-33</td>
<td>Bill Keller Park - Lake Charles Pump Retrofit</td>
<td>Tied to Permitting of Woodbound Lakes Pump Station</td>
<td>Keep existing pumps, upgrade electrical with automation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Priority</td>
<td>Project #</td>
<td>Page #</td>
<td>Address</td>
<td>Description</td>
<td>Bldg. Flood</td>
<td>Septic Issues</td>
<td>Well Issues</td>
<td>No. Props. Affected</td>
<td>Estmt Needed</td>
</tr>
<tr>
<td>----------</td>
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<td>---------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>High</td>
<td>22</td>
<td>-</td>
<td>Bill Keller Park - surface water irrigation conversion</td>
<td>Tied to Permitting of Woodbound Lakes Pump Station</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>Low</td>
<td>23</td>
<td>34</td>
<td>113 Angeles Road</td>
<td>low lying, road drainage accumulates on front yard, yard below road.</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td>Medium</td>
<td>24</td>
<td>35-36</td>
<td>286 DeBary Drive</td>
<td>low lying, property at or below road elevations, drainage ponds side and front yards</td>
<td>close</td>
<td>No</td>
<td>No</td>
<td>1+</td>
<td>No</td>
</tr>
<tr>
<td>High</td>
<td>25</td>
<td>37</td>
<td>338 Gardenia Avenue</td>
<td>low lying, area drainage &quot;bowl&quot;, discharge needs maintenance, no easement</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>7</td>
<td>Yes</td>
</tr>
<tr>
<td>Medium</td>
<td>26</td>
<td>38</td>
<td>Tropical Lagoon Dredging</td>
<td>Improve drainage and restore capacity</td>
<td>No</td>
<td>Possible</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>High</td>
<td>27</td>
<td>39-40</td>
<td>286, 268, 271, 275 DeLeon Rd &amp; 62 Alano Rd</td>
<td>Flat low lying area, poor drainage along DeLeon, rear yard is in flood plain, exist. dead end exfil.</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>4+</td>
<td>No</td>
</tr>
</tbody>
</table>