BID COVER PAGE

City of Gainesville

Procurement Division
(352) 334-5021(main)
Issue Date: 12/19/22]

INVITATION TO BID: # PWDA-230027-DH
Pavement Management (Preservation & Surfacing) Continuing Services

PRE-BID MEETING: ☐ **Non-Mandatory** ☐ **Mandatory** ☒ **N/A** ☐ **Includes Site Visit**
DATE: **TIME:**
LOCATION:

QUESTION SUBMITTAL DUE DATE: January 23, 2023 @ 3:00 pm

All meetings and submittal deadlines are Eastern Time (ET).

DUE DATE FOR UPLOADING BID RESPONSE: January 30, 2023 at 3:00PM

SUMMARY OF SCOPE OF WORK:
Push button milling, asphalt surfacing, asphalt surface treating (crack seal, chip seal, scrub seal, micro-surfacing, cape seal and asphalt rejuvenation), roadway base work, roadway concrete work and pavement marking services.

For questions relating to this bid, contact: Diane Holder , holderds@gainesvillefl.gov

Bidder is not in arrears to City upon any debt, fee, tax or contract: ☐ Bidder is NOT in arrears ☐ Bidder IS in arrears
Bidder is not a defaulter, as surety or otherwise, upon any obligation to City: ☐ Bidder is NOT in default ☐ Bidder IS in default

Bidders who receive this bid from sources other than City of Gainesville Procurement Division or DemandStar MUST contact the Procurement Division prior to the due date to ensure any addenda are received in order to submit a responsible and responsive offer. Uploading an incomplete document may deem the offer non-responsive, causing rejection.

ADDENDA ACKNOWLEDGMENT: Prior to submitting my offer, I have verified that all addenda issued to date are considered as part of my offer: Addenda received (list all) #_____

Legal Name of Bidder:_____

DBA: _____

Authorized Representative Name/Title: _____

E-mail Address: _____ FEIN: _____

Street Address: _____

Mailing Address (if different): _____

Telephone: (_____) _____ Fax: (_____) _____

By signing this form, I acknowledge I have read and understand, and my business complies with all General Conditions and requirements set forth herein; and,

☐ Bid is in full compliance with the Specifications.

☐ Bid is in full compliance with specifications except as specifically stated and attached hereto.

SIGNATURE OF AUTHORIZED REPRESENTATIVE: _____

SIGNER'S PRINTED NAME: _____ **DATE:** _____

This page must be completed and uploaded to DemandStar.com with your Submittal.

PART 1 – INVITATION TO BID INFORMATION

Thank you for your interest in working with the City of Gainesville.

Pertinent information and required documents regarding this bid as part of a responsive offer are listed below:

1.1 DISTRIBUTION OF INFORMATION

The City posts and distributes information pertaining to its procurement solicitations on DemandStar (www.demandstar.com). The City has transitioned from accepting hard (paper) copy submittals to accepting submittals through "E-Bidding" on DemandStar.com. In order to submit a bid response to this solicitation the bidder must be registered with DemandStar.

It is the responsibility of the bidder to monitor DemandStar. Properly registered bidders can expect to receive automatic notification of solicitations for bids and proposals, by participating purchasing entities. Bidder failure to retrieve available, required procurement information from DemandStar and include the appropriate documentation and information in solicitation responses may result in disqualification.

1.2 PRE-BID MEETING/QUESTIONS/CLARIFICATIONS AND BID OPENING

If scheduled (refer to Bid Cover Page), attending a pre-proposal meeting is strongly recommended as the project's scope of work, procedures, and specifications will be discussed at this time. It is the only time during the bid process that bidders may ask questions directly of the end user.

NOTE: For a bidder's attendance of a mandatory pre-proposal meeting to count, the bidder must sign-in before the Procurement Specialist calls the end of that meeting. If the bidder is not signed in by that time, they will be disqualified from bidding on the project. If the mandatory pre-proposal meeting also includes a required site visit, then bidder must sign in, both at the pre-proposal meeting, and again at the end of the site visit, in order to have their attendance count and not be disqualified from submitting a proposal.

NOTE: Failure to attend a mandatory pre-proposal meeting will result in disqualification of your proposal.

If special accommodations are needed in order to attend a pre-bid meeting or a bid opening, please contact the Procurement Division at least 72 hours in advance.

All questions that occur outside of the pre-proposal meeting must be submitted to Procurement only, and must be received by the date indicated on the Bid Cover Page to be considered. Technical and/or specification questions will not be answered over the phone; they must be submitted by email directed to the Procurement Specialist conducting the solicitation (refer to Bid Cover Page). All questions will be answered via Addendum which will be posted on DemandStar.com for vendor access. All addenda must be acknowledged by the bidder on the Bid Cover Page.

*****IMPORTANT NOTICE REGARDING BID OPENING*****

The scheduled bid opening will occur via Zoom. The information to join is provided below. Attendance (live viewing) of the bid opening is not required. However, to join the bid opening you must register.

You are invited to a Zoom meeting.
When: Jan 30, 2023 03:00 PM Eastern Time (US and Canada)

Register in advance for this meeting:
https://us06web.zoom.us/meeting/register/tZUqduipqDsjHNd-CwEbw_YMhCdHIaY55YUT

After registering, you will receive a confirmation email containing information about joining the meeting...

All meetings and submittal deadlines are Eastern Time (ET).

1.3 PROHIBITION OF LOBBYING

To ensure fair consideration, consistent and accurate dissemination of information for all bidders, the City prohibits communication to or with any department, employee, or agent evaluating or considering proposals during the submission process, except as authorized by the Procurement Division representative. **Additionally, the City prohibits communication initiated by a bidder to any city official or employee evaluating or considering the proposals (up to and including the City Commissioners) before the time an award decision has been made.** Any communication between bidder and the City required to obtain information or clarification for preparing a bid or to enable a proper, accurate evaluation of a proposal will be handled solely through the Procurement Division staff. **Any communications initiated between the bidder and the City outside these parameters may be grounds for disqualifying the offending bidder from consideration for award of the bid and/or any future bid.**

1.4 CONE OF SILENCE

During the Cone of Silence (formerly called Blackout period) as defined in the next paragraph, except as pursuant to an authorized appeal, no person may lobby (as defined in section 1.3) on behalf of a competing party in a particular procurement process, City officials or employees except the Procurement designated staff contact in the Procurement Division. Violation of this provision shall result in disqualification of the party on whose behalf the lobbying occurred.

The Cone of Silence is the period between the issue date of the ITB, which allows for immediate submittals to the City of Gainesville Procurement Division for an Invitation for Bid and the time the City Officials and Employee awards the contract.

1.5 MINIMUM QUALIFICATIONS

The response to the minimum qualification requirements should address each of the qualifications set out in the section this section. Bidders must provide documentation which demonstrates their ability to satisfy all of the minimum qualification requirements. Bidders who do not meet the minimum qualification requirements or who fail to provide supporting documentation will not be further considered. If a prescribed format, or required documentation for the response to minimum qualification requirements is stated below, bidders must use said format and supply said documentation.

Bids will only be considered from firms normally engaged in providing and performing services specified herein. Bidders shall be required to show that they have had experience in construction work of the same or similar nature and that their organization has been in formal existence and engaged in a similar type work for not less than 5 years. If bidder organization does not meet the 5 year requirement you are required to show the project team (project manager AND superintendent OR owner) for this project has experience in not less than 5 years for each individual. (Complete and submit with your bid the attached Project Manager and Superintendent or Owner's Experience form).

1.6 DETERMINATION OF RESPONSIBILITY OF BIDDERS

The specific qualifications of bidders for this specific Invitation to Bid are included above. Bidder must also demonstrate that it is responsible as defined in the City of Gainesville's Financial Services Procedures Manual, Section 41-522, as may be amended.

As a part of the bid evaluation process, City reserves the right to conduct a background investigation of bidder, including a record check by the Gainesville Police Department if the qualifications require it. Bidder's submission of a response constitutes acknowledgment of the process and consent to such investigation.

No contract will be awarded to any bidder who is in arrears to City upon any debt, fee, tax or contract, or who is a defaulter, as surety or otherwise, upon any obligation to City, or who is otherwise determined to be not responsible by City pursuant to Section 41-522, Financial Services Procedures Manual, following:

These criteria consider the bidder's capability to perform:

a) The ability of the bidder to successfully carry out a proposed contract.

b) Past performance (including reference check), experience, business and financial capabilities, skills, technical organization, legal eligibility and reliability.
c) Current litigation pending between the bidder and the City.
d) Bidder has paid all debts owed to the City.
e) Bidder possesses all required licenses.

If it is determined that the bidder is not responsible, City will notify bidder of its finding, including evidence used, and allow bidder the opportunity to come into compliance within three (3) business days of notification.

Please be advised that the City Attorney's office will not approve a contract with any vendor unless the corporation or partnership is registered with the Division of Corporations with the State of Florida (www.sunbiz.org).

1.7 RESPONSIVENESS OF BID

Each bid response will be reviewed to determine if the bid response is responsive to the submission requirements outlined in the ITB. A responsive bid is one which follows the requirements of the ITB, includes all required documentation, is submitted in the format outlined in the ITB, is of timely submission (via upload to DemandStar.com), and has the appropriate signatures as required on each document. Failure to comply with these requirements may deem the proposal non-responsive (see Section 41-444 of the Financial Services Procedures Manual).

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PART 2 – SCOPE OF WORK/SPECIFICATIONS

2.1 GENERAL DESCRIPTION

It is the intent of the City of Gainesville to obtain bid responses for push button milling, asphalt surfacing, asphalt surface treating (crack seal, chip seal, scrub seal, micro-surfacing, cape seal and asphalt rejuvenation), roadway base work, roadway concrete work and pavement marking services.

2.2 SCOPE OF WORK/SPECIFICATIONS

The detailed scope of work is outlined in the documents provided in Demandstar under this solicitation including but not limited to the construction plans & drawings, utility work schedules, permits and bid addendums. The scope of work is further outlined in the Agreement provided in Part 7, which details the terms & conditions and specifications for the work. The awarded bidder shall execute an Agreement that meets the term, conditions and specifications provided in the Agreement. All work shall be done in accordance with this solicitation and in accordance with the aforementioned Agreement.

2.3 ELIGIBILITY OF EQUIPMENT OR MATERIALS

When a particular manufacturer's name and catalog number "or equivalent" is specified, consideration will be given to other manufacturers. The term "or equivalent" shall be defined to mean of similar design and performance characteristics. If a product is being bid as an equivalent, complete technical data necessary to properly evaluate such product shall be submitted with the bid.

The City reserves the right to request additional data after the bid is opened and prior to the award. Failure to supply data necessary to properly evaluate a product will constitute sufficient reason for rejection of the bid.

All information specifically requested by this Solicitation shall be furnished attached to the bid. Failure to do so may invalidate the bid.

2.4 EXAMINATION OF SITE

Before submitting the bid proposal, it shall be the bidder's responsibility to visit the site of the proposed scope of work and familiarize the bidder with the nature and extent of the work and any local conditions, either surface or subsurface, that may in any way affect the work to be done and the equipment, materials and labor required. The bidder shall also thoroughly examine all documents related to this solicitation to inform the bidder regarding any and all conditions and requirements that may in any manner affect the work to be performed under the award of this solicitation. Failure to do so will not relieve the awarded bidder of complete performance the scope of work.

2.5 QUALITY

All materials shall be new. In no case will used, reconditioned or obsolete parts be acceptable. All equipment specifications are to be considered minimum requirements.

2.6 PERMITS, APPLICATION, LICENSE FEES & COMPLIANCE

The awarded vendor shall obtain and pay for all necessary permits, permit application fees license or any fees required to complete the scope of work in accordance with this solicitation. Each bidder shall comply with all laws, ordinances, regulations and building code requirements applicable to the work contemplated in this solicitation. The bidder is presumed to be familiar with all state and local laws, ordinances, code rules and regulations that may in any way affect the work. Ignorance on the part of the bidder will in no way relieve it of responsibility

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PART 3 – HOW TO SUBMIT A BID

3.1 HOW TO SUBMIT A BID

The bid response, containing all required documents, with authorized signatures, must be received by 3:00 p.m. on the due date indicated on the Bid Cover Page for this project. The bidder's complete pdf response being uploaded into DemandStar.com prior to the 3:00 p.m. deadline. This platform will not accept late submittals. Required signatures for bid forms may be applied using electronic signature software (i.e., DocuSign, Adobe Sign, etc.).

Upload the bid response as a pdf formatted document only, unless the solicitation states otherwise. The pdf document should be titled with bidder's name, bid number, and, if the response is submitted in parts, include "Part # of x".

Modifications to or withdrawal of a bidder's submittal can be made up to the deadline date. Modifications and withdrawals must be documented in DemandStar.com in order to be recognized by the City. Any bid not withdrawn will constitute an irrevocable offer, for a period of one hundred twenty (120) days, to provide the City adequate time to award the Contract for the services specified in this solicitation.

3.2 HOW TO ASSEMBLE YOUR BID

The following documents and forms must accompany any offer submitted, and will be the basis for review and award. A submittal without these documents may be deemed non-responsive. The City reserves the right to request all other missing forms and additional information from any bidder prior to award. *Please do not include items that are not specifically requested.*

- Completed Bid Cover Page
- Bid Form - (Leave no blanks; indicate N/A or No Bid where applicable)
- Drug-Free Workplace Form
- Bidder Verification Form
- Customer History Form
- Bidder's W-9
- Proof of Bidder's Insurability (refer to Part 7, Paragraph 8)
- Copy of any applicable, current licenses and/or certification required by City/County/State
- Documentation of Compliance with Minimum Qualifications
- Exceptions to the ITB (refer to Part 6, 6.2 Deviations)
- Proposed Subcontractor's Form
- Responsible Agent Form
- Project Manager and Superintendent or Owner's Experience form (if required as specified in Section 1.5)

The bid response must be signed by an officer of the business who is legally authorized to enter into a contractual relationship in the name of the bidder. An authorized representative who is not an officer may sign the response, but must attach a corporate resolution granting authorization to the representative to execute on behalf of the business.

The submittal of a response by a bidder will be considered by the City as constituting an offer by the bidder to perform the required services at the stated fees.

3.3 DISCLOSURE AND CONFIDENTIALITY

Florida's Public Records Law, Chapter 119, Florida Statutes, includes numerous exemptions to the general requirement to disclose information to the public in response to a public record's request. Exemptions are found in various provisions of the Florida Statutes, including but not limited to Section 119.071, Florida Statutes (General exemptions from inspection or copying of public records), and Section 119.0713, Florida Statutes (Local government agency exemptions from inspection or copying of public records). Section 815.045, Florida Statutes (Trade secret information), provides that trade secret information as defined in Section 812.081, Florida Statutes (Trade secrets; theft, embezzlement; unlawful copying; definitions; penalty) is confidential and exempt from disclosure because it is a felony to disclose such records. The Parties understand and agree that Florida's Public Records Law is very broad and that documents claimed by a Party to be confidential and exempt from public disclosure pursuant to the Public Records Law may in fact not be deemed such by a court of law. Accordingly, the following provisions shall apply:

(i) Identifying Trade Secret or Otherwise Confidential and Exempt Information. For any records or portions thereof that bidder claims to be Trade Secret or otherwise confidential and exempt from public disclosure under the Public Records Law, bidder shall:

a. Specifically identify the records or specific portions thereof that are confidential and exempt and reference the particular Florida Statute that grants such status. Provide one redacted copy of the record and one copy of the record with the confidential and exempt information highlighted as outlined in 1 and 2 on the following page. Bidder shall take care to redact only the confidential and exempt information within a record.

b. Provide an affidavit or similar type of evidence that describes and supports the basis for Contractor's claim that the information is confidential and exempt from public disclosure.

(ii) Request for Trade Secret or Otherwise Confidential and Exempt Information.

a. In the event City receives a public records request for a record with information labeled by bidder as Trade Secret or otherwise as confidential and exempt, City will provide the public record requester with the redacted copy of the record and will notify bidder of the public records request.

b. However and notwithstanding the above, in the event that City in its sole discretion finds no basis for bidder's claim that certain information is Trade Secret or otherwise confidential and exempt under Florida's Public Records Law, then City shall notify bidder in writing of such conclusion and provide bidder a reasonable amount of time to file for declaratory action requesting a court of law to deem the requested information as Trade Secret or otherwise as confidential and exempt under Florida's Public Records Law. If bidder fails to file for declaratory action within the reasonable amount of time provided, then City will disclose the information requested.

c. If a public records lawsuit is filed against CITY requesting public disclosure of the information labeled by bidder as Trade Secret or otherwise as confidential and exempt, CITY shall notify bidder and bidder shall intervene in the lawsuit to defend the nondisclosure of such information under Florida's Public Records Law.

d. Bidder hereby indemnifies and holds CITY, its officers and employees harmless from any and all liabilities, damages, losses, and costs of any kind and nature, including but not limited to attorney's fees, that arise from or are in any way connected with bidder's claim that any information it provided to CITY is Trade Secret or otherwise confidential and exempt from public disclosure under Florida's Public Records Law.

How to Designate Trade Secret or Otherwise Confidential and Exempt Information

If a bidder believes that its response contains trade secret or otherwise confidential and exempt information (as defined by Florida or Federal law) and should be withheld from disclosure to the public, in such cases the bidder must provide a redacted copy of the proposal for public access.

- Redacted means that the confidential/proprietary information in the proposal has been obscured so that it cannot be read.
- Unredacted means that the entire document, including the confidential/proprietary information, has not be obscured and is visible for the evaluation team to use in their evaluation process.

1. Upload a pdf version response of the complete UNREDACTED proposal. Include "UNREDACTED, CONFIDENTIAL" in document title. This is the version that will be used by the evaluators when they are reviewing your proposal. It is essential that the items that will be redacted are highlighted in yellow to prevent the evaluation team from discussing these items after the award. The first page of the document for the **unredacted** document should provide a general description of the information bidder has designated as confidential and/or exempt, and provide a reference to the appropriate Florida or Federal statute supporting the confidential and/or exempt classification.
2. Upload a pdf version response of the REDACTED copy of the proposal. Include "REDACTED" in the document title. This copy will be used to support any public records requests that may arise from this solicitation.

How the City will Handle Material Identified as Trade Secret or Otherwise Confidential and Exempt Information

The City's evaluators will be provided with the complete proposal, including any trade secret or otherwise confidential and exempt information. The City evaluators will maintain the confidentiality of the information through the evaluation process, including any recorded evaluation team meetings.

In the event a public record request is made to view the information which bidder claims is confidential and/or exempt, the City will notify the bidder and give the bidder a reasonable opportunity (generally 2 business days) to institute appropriate legal action to prevent the disclosure of the information claimed as confidential and/or exempt.

All public records submitted to the City, including those claimed as confidential and/or exempt, will be retained by the City and will not be returned to a bidder at the conclusion of the bidding process.

3.4 ONLY ONE BID

Only one bid from any individual, firm, corporation, organization or agency under the same or different name shall be considered. Should it appear to the City that any Bidder has a financial interest in more than one submission under this bid, all bids in which such Bidder has a financial interest will be rejected. The City considers a financial interest to include, but not be limited, to joint ventures, partnerships, and identified subcontractors.

3.5 FULLY INFORMED BIDDER

A Bidder is expected to fully inform itself as to the requirements of the Specifications and Contract terms and conditions; failure to do so will be at its own risk. A Bidder shall not expect to secure relief on the plea of error.

3.6 SUBCONTRACTORS

Bidder shall notify the City of the proposed use of subcontractors in the provision of services required herein by completing and returning the Proposed Subcontractors Form, provided in Part 8. No subcontractor shall be employed by the Contractor for the provision of these services without the written approval of the City. Bidders shall provide the estimated percentage of total dollar amount(s) as well as the total dollar amount(s) of the subcontracts.

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PART 4 – BID FORM

Pavement Management (Preservation & Surfacing) Continuing Services

Date: _____

The bidder hereby declares that he has examined the site of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done, and that he has examined the plans, specifications, agreement and all documents related to the above referenced solicitation for the work and comments hereto attached. The Bidder further declares that the only persons, company or parties interested in this Bid or the Agreement to be entered into, as principals, are named herein; that this Bid is made without connection with any other person, company or parties making a Bid; and it is in all respects fair and in good faith and without collusion or fraud.

The Bidder proposes and agrees, if this Bid is accepted, to contract with City of Gainesville, Florida, through the City Commission, , in the form of Agreement specified, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation, labor and service necessary to complete the work covered by the Bid Solicitation for: Pavement Management (Preservation & Surfacing) Continuing Services and to furnish the prescribed Performance and Payment Bond for as required by the final agreement; and to furnish the required evidence of the specified insurance.

Attached is a list of similar projects and a list of Subcontractors as covered in the Instructions to Bidders.

The Bidder agrees to accept in full compensation for each item the prices named in the schedule incorporated herein and attached as "Bid Schedule". The Bidder understands that the quantities shown on the "Bid Schedule" are approximate only and subject to increase or decrease. Should they be increased or decreased, work will be performed at the unit price bid herein. Actual quantities will be determined upon completion of the work.

This page must be completed and uploaded with your Submittal.

4.1 BID FORM/PAY ITEM LIST

Quantities requested will be placed in a single Work Order for work zones throughout the City; a single mobilization will be paid per treatment type per Work Order (crack seal, chip seal, micro-surfacing, etc). Once mobilized, the City will not require demobilization or remobilization until Work Order is completed. After hours mark-up percentage will be applied if the City request work to be performed nights, weekends and holidays and will be applied to each applicable pay item excluding mobilization. ***Each bidder shall fully complete at least one part of the bid to be considered responsive.***

Part 1 –Base Work

Type/Thickness	Unit	0 – 100	101 – 1000	1,001 – 5,000	5,001 – 10,000	Over 10,000
Mobilization	Lump Sum					
After-Hours Mark-up	Percentage					
Type B Stabilization	Square Yards					
4” Limerock Base	Square Yards					
6” Limerock Base	Square Yards					
8” Limerock Base	Square Yards					
10” Limerock Base	Square Yards					

Part 2 – Crack Seal

Crack Seal	Unit	0 – 100	101 – 1000	1,001 – 5,000	5,001 – 10,000	Over 10,000
Mobilization	Lump Sum					
After-Hours Mark-up	Percentage					
Spec. 305	Gallons					

Part 3 – Milling Asphalt Pavement

Depth	Unit	0 – 25,000	25,001 – 50,000	50,001 – 100,000	100,001 – 250,000	Over 250,000
Mobilization	Lump Sum					
After-Hours Mark-up	Percentage					
0.25 Inches	Square Yards					
0.50 Inches	Square Yards					
0.75 Inches	Square Yards					
1.00 Inches	Square Yards					
1.25 Inches	Square Yards					

This page must be completed and uploaded with your Submittal.

Depth	Unit	0 – 25,000	25,001 – 50,000	50,001 – 100,000	100,001 – 250,000	Over 250,000
1.5 Inches	Square Yards					
1.75 Inches	Square Yards					
2.0 Inches	Square Yards					
2.25 Inches	Square Yards					
2.5 Inches	Square Yards					
2.75 Inches	Square Yards					
3.0 Inches	Square Yards					
3.25 Inches	Square Yards					
3.5 Inches	Square Yards					

Part 4 – Asphalt Pavement Placement

Type	Unit	0 – 150	151 - 250	251 – 500	501 – 1000	Over 1,000
Mobilization	Lump Sum					
After-Hours Mark-up	Percentage					
Category 1 – SP-9.5	Tons					
Category 1 – SP-12.5	Tons					
Category 2 – SP-9.5	Tons					
Category 2 – SP-12.5	Tons					
Category 2 – FC-9.5	Tons					
Category 2 – FC-12.5	Tons					
Category 2 – SP-9.5 (PG 76-22)	Tons					
Category 2 – SP-12.5 (PG 76-22)	Tons					
Category 2 – FC-9.5 (PG 76-22)	Tons					
Category 2 – FC-12.5 (PG 76-22)	Tons					
Category 3 – SP-9.5	Tons					
Category 3 – SP-12.5	Tons					
Category 3 – FC-9.5	Tons					
Category 3 – FC-12.5	Tons					

This page must be completed and uploaded with your Submittal.

Type	Unit	0 – 150	151 - 250	251 – 500	501 – 1000	Over 1,000
Category 3 – SP-9.5 (PG 76-22)	Tons					
Category 3 – SP-12.5 (PG 76-22)	Tons					
Category 3 – FC-9.5 (PG 76-22)	Tons					
Category 3 – FC-12.5 (PG 76-22)	Tons					

Part 5 – Asphalt Pavement Pick-up Only

Type	Unit	0 – 150	151 - 250	251 – 500	501 – 1000	Over 1,000
After-Hours Mark-up	Percentage					
SP-9.5	Tons					
SP-12.5	Tons					
FC-9.5	Tons					
FC-12.5	Tons					
SP-9.5 (PG 76-22)	Tons					
SP-12.5 (PG 76-22)	Tons					
FC-9.5 (PG 76-22)	Tons					
FC-12.5 (PG 76-22)	Tons					

Part 6 – Chip Seal

Chip Seal – Spec. 335-1	Unit	10,000 – 25,000	25,001 – 50,000	50,001 – 100,000	100,001 – 250,000	Over 250,000
Mobilization	Lump Sum					
After-Hours Mark-up	Percentage					
Single Conventional	Square Yards					
Single Modified	Square Yards					
Double Conventional	Square Yards					
Double Modified	Square Yards					

This page must be completed and uploaded with your Submittal.

Part 7 – Micro-Surfacing

Micro-Surfacing – Spec. 335-2	**Unit**	**10,000 – 25,000**	**25,001 – 50,000**	**50,001 – 100,000**	**100,001 – 250,000**	**Over 250,000**
Mobilization	Lump Sum					
After-Hours Mark-up	Percentage					
Single Conventional	Square Yards					
Single Premium	Square Yards					
Double Conventional	Square Yards					
Double Premium	Square Yards					
Rut Filling	Unit	**0 – 150**	**151 - 250**	**251 – 500**	**501 – 1000**	**Over 1,000**
Conventional	Tons					
Premium	Tons					

Part 8 – Asphalt Rejuvenation

Asphalt Rejuvenation – Spec. 335-4	**Unit**	**10,000 – 25,000**	**25,001 – 50,000**	**50,001 – 100,000**	**100,001 – 250,000**	**Over 250,000**
Mobilization	Lump Sum					
After-Hours Mark-up	Percentage					
Asphalt Rejuvenation	Square Yards					
Asphalt Rejuvenation with TiO_2	Square Yards					

Part 9 –Rejuvenating Scrub Seal

Scrub – Spec. 335-5	**Unit**	**10,000 – 25,000**	**25,001 – 50,000**	**50,001 – 100,000**	**100,001 – 250,000**	**Over 250,000**
Mobilization	Lump Sum					
After-Hours Mark-up	Percentage					
Rejuvenating Scrub Seal	Square Yards					

This page must be completed and uploaded with your Submittal.

Part 10 –Concrete Work

Type	Unit	0 – 150	151 - 250	251 – 500	501 – 1000	Over 1,000
Mobilization	Lump Sum					
After-Hours Mark-up	Percentage					
4" Thick Sidewalk & Driveways	Square Yards					
6" Thick Sidewalk & Driveways	Square Yards					
8" Thick Sidewalk & Bus Stops	Square Yards					
6" Thick Concrete Curb Ramps	Square Yards					
Detectable Warning Surface	Square Foot					
Type A Curb	Linear Foot					
Type B Curb	Linear Foot					
Type D Curb	Linear Foot					
Type E Curb	Linear Foot					
Type F Curb	Linear Foot					
Drop Curb	Linear Foot					
Valley Gutter	Linear Foot					
Removal of Existing Concrete	Square Yards					

Part 11 – Pavement Markings – (White or yellow if applicable)

Long Line	Unit	0 – 5	5 - 10	10 – 25	25 – 50	Over 50
6" Solid Paint	Gross Mile					
6" Skip 10'-30' Paint	Gross Mile					
6" Solid Thermo	Gross Mile					
6" Skip 10'-30' Thermo	Gross Mile					

Supplemental Markings	Unit	0 – 150	151 - 250	251 – 500	501 – 1000	Over 1,000
6" Solid Paint (BLUE)	Linear Foot					

This page must be completed and uploaded with your Submittal.

Supplemental Markings	Unit	0 – 150	151 - 250	251 – 500	501 – 1000	Over 1,000
8” Solid Paint	Liner Foot					
12” Solid Paint	Liner Foot					
18” Solid Paint	Liner Foot					
24” Solid Paint	Liner Foot					
6” Skip 6’-10’ Paint	Gross Liner Foot					
6” Skip 2’-4’ Paint	Gross Liner Foot					
6” Skip 3’-9’ Paint	Gross Liner Foot					
6” Solid Thermo (BLUE)	Linear Foot					
8” Solid Thermo	Liner Foot					
12” Solid Thermo	Liner Foot					
18” Solid Thermo	Liner Foot					
24” Solid Thermo	Liner Foot					
6” Skip 6’-10’ Thermo	Gross Liner Foot					
6” Skip 2’-4’ Thermo	Gross Liner Foot					
6” Skip 3’-9’ Thermo	Gross Liner Foot					
Work Zone RPMs	Each					
Permanent RPMs	Each					
Yield Lines Paint	Square Foot					
Speed Hump/Speed Table Paint	Square Foot					
Misc. Paint (Bullnose, Curb, Etc.)	Square Foot					
Yield Lines Thermo	Square Foot					
Speed Hump/Speed Table Thermo	Square Foot					
Misc. Thermo (Bullnose, Curb, Etc.)	Square Foot					

Messages & Symbols	Unit	0 – 5	6 - 10	11 – 25	26 – 50	Over 50
Left (Message) Paint	Each					
Right (Message) Paint	Each					

This page must be completed and uploaded with your Submittal.

Messages & Symbols	Unit	0 – 5	6 - 10	11 – 25	26 – 50	Over 50
Stop (Message) Paint	Each					
Lane (4') (Message) Paint	Each					
Only (4') (Message) Paint	Each					
Only (8') (Message) Paint	Each					
Lane (8') (Message) Paint	Each					
Turn (Message) Paint	Each					
Merge (Message) Paint	Each					
Bus (Message) Paint	Each					
School (Message) Paint	Each					
Railroad (Message) Paint	Each					
Railroad (Bike Path) (Message) Paint	Each					
Wrong Way Arrow (Symbol) Paint	Each					
U-Turn (Symbol) Paint	Each					
Thru Arrow (Symbol) Paint	Each					
Left or Right Arrow (Symbol) Paint	Each					
Left or Right and Thru Arrow (Symbol) Paint	Each					
Left, Right and Thru Arrow (Symbol) Paint	Each					
Bike Lane Arrow (Symbol) Paint	Each					
Helmeted Bicyclist (Symbol) Paint	Each					
Shared Lane Marking (Symbol) (Paint	Each					

This page must be completed and uploaded with your Submittal.

Messages & Symbols	Unit	0 – 5	6 - 10	11 – 25	26 – 50	Over 50
Accessibility (3') (Symbol) Paint	Each					
Accessibility (5') (Symbol) Paint	Each					
Left (Message) Thermo	Each					
Right (Message) Thermo	Each					
Stop (Message) Thermo	Each					
Lane (4') (Message) Thermo	Each					
Only (4') (Message) Thermo	Each					
Only (8') (Message) Thermo	Each					
Lane (8') (Message) Thermo	Each					
Turn (Message) Thermo	Each					
Merge (Message) Thermo	Each					
Bus (Message) Thermo	Each					
School (Message) Thermo	Each					
Railroad (Message) Thermo	Each					
Railroad (Bike Path) (Message) Thermo	Each					
Wrong Way Arrow (Symbol) Thermo	Each					
U-Turn (Symbol) Thermo	Each					
Thru Arrow (Symbol) Thermo	Each					
Left or Right Arrow (Symbol) Thermo	Each					
Left or Right and Thru Arrow	Each					

This page must be completed and uploaded with your Submittal.

Messages & Symbols	**Unit**	**0 – 5**	**6 - 10**	**11 – 25**	**26 – 50**	**Over 50**
(Symbol) Thermo						
Left, Right and Thru Arrow (Symbol) Thermo	Each					
Bike Lane Arrow (Symbol) (Preformed Only) Thermo	Each					
Helmeted Bicyclist (Symbol) (Preformed Only) Thermo	Each					
Shared Lane Marking (Symbol) (Preformed Only) Thermo	Each					
Accessibility (3') (Symbol) Thermo	Each					
Accessibility (5') (Symbol) Thermo	Each					

Removal – Grinding	**Unit**	**0 – 150**	**151 - 250**	**251 – 500**	**501 – 1000**	**Over 1,000**
Mobilization	Lump Sum					
Painted Symbols and Messages	Square Foot					
Painted Stripe	Square Foot					
Thermoplastic Symbols and Messages	Square Foot					
Thermoplastic Stripe	Square Foot					

Removal – Water Blasting	**Unit**	**0 – 150**	**151 - 250**	**251 – 500**	**501 – 1000**	**Over 1,000**
Mobilization	Lump Sum					
Painted Symbols and Messages	Square Foot					
Painted Stripe	Square Foot					
Thermoplastic Symbols and Messages	Square Foot					
Thermoplastic Stripe	Square Foot					

This page must be completed and uploaded with your Submittal.

After-Hours Mark-up	**Percentage**					

List of Unit Abbreviations:

SY Square Yards	GL Gallons	SD Side Drain
LS Lump Sum	MG Thousand Gallons	ED Each Day
CY Cubic Yards	GM Gross Miles	CD Cross Drain
EA Each	LF Linear Feet	AC Acre
TN Tons	NM Net Miles	RCP Reinforced Concrete Pipe
HR Hour	AS Assembly	PI Per Intersection

Note: THE CITY RESERVES THE RIGHT TO AWARD THIS BID ON THE BASIS OF EACH LINE INDIVIDUALLY, ANY COMBINATION OF LINE ITEMS OR ALL LINE ITEMS COMBINED AS IT DETERMINES TO BE IN ITS BEST INTEREST. THE CITY RESERVES THE RIGHT TO NOT AWARD ANY LINE ITEM AS IT DETERMINES TO BE IN ITS BEST INTEREST.

Note: THE CITY RESERVES THE RIGHT TO ADD OR DELETE LOCATIONS, SERVICES, ITEMS, OR MATERIALS FROM THIS CONTRACT SHOULD IT BE IN THE BEST INTEREST OF THE CITY. THE CONTRACT PRICE MAY BE ADJUSTED UPON AGREEMENT OF THE CONTRACTOR AND THE CITY'S REPRESENTATIVE AND BASED UPON BID PRICES.

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PART 5 – AWARD

5.1 AWARD OF CONTRACT

The awards of a contract and/or purchase shall be to the lowest responsive, responsible bidder(s). Multiple awards are anticipated with this solicitation. Lowest bid(s) will be determined by adding each unit rate from each part of the bid form and award(s) will be determined by each part of the bid form.

A responsive bidder is one that provides all requested information, certifications, product information and pricing. A responsible bidder is one that has demonstrated through the past performance and the requested documentation that they have the resources and financial capability to provide the products/services identified by the City via this Invitation to Bid.

The City may reject a bid based upon past performance of a bidder. In determining the lowest responsive, responsible bidder the City will consider, but not be limited to, the items listed below:

- Price,
- The ability of the bidder to successfully carry out a proposed contract,
- Past performance (including reference checks), experience, business and financial capabilities, skills, technical organization, legal eligibility and reliability,
- Current litigation pending between bidder and City,
- All debts owed to City have been paid,
- Bidder has all required licenses,
- Bidder is authorized to do business in Florida (registered in SunBiz),
- The number and scope of conditions and/or exceptions attached to the bid,
- Proposed subcontractors
- Project Manager and Superintendent or Owner's Experience (if required as specified in Section 1.5)

The City reserves the right to make such investigations as it may deem necessary to establish the competency and financial ability of any Bidder to perform the work. If, after the investigation, the evidence of competency and financial ability is not satisfactory, the City reserves the right to reject the bid.

In the event the successful Bidder fails to execute the Contract, the City may then accept the bid of the next lowest responsive, responsible bidder or re-advertise the bid. If the bid of the next best Bidder is accepted, this acceptance shall bind such Bidder as though he were the original successful Bidder. City reserves the right to pursue such remedies as provided by law for Bidder's failure to execute the Contract.

The City of Gainesville reserves the right to accept or reject any or all bids, reserves the right to waive any or all irregularities, and to award the contract to the lowest, responsive and responsible Bidder whose bid is determined by the City to be in its best interest.

Successful Bidder must either update or complete City's vendor application, pay business tax (if applicable), and register with the State of Florida (if required by law).

5.2 TIE BIDS

Whenever two or more bids which are equal with respect to price, quality and service are received, preference shall be given in the following order: (1) Bidders submitting the attached Drug-Free Workplace form with their bid/proposal certifying they have a drug free workplace in accordance with Section 287.087, Florida Statutes; (2) Bidders located within the City of Gainesville, if not subject to the Local Preference Ordinance; (3) Bidders located within Alachua County; (4) Bidders located within the State of Florida; and (5) coin toss.

5.3 DRUG-FREE WORKPLACE

Preference shall be given to submitters providing a certification with their qualifications certifying they have a drug-free workplace whenever two or more bids which are equal with respect to price, quality, and service are received in accordance with Section 287.087, Florida Statutes. The attached form should be filled out and returned with the qualifications in order to qualify for this preference.

5.4 CONTRACT

The Contract to be entered into with the successful bidder will designate the successful bidder as the City's Contractor. The terms and conditions in the Contract Terms and Conditions, Part 7, shall be applicable and binding. The successful bidder will be required to execute an agreement with the City in substantially the same format as found in Part 7.

5.5 BID PROTEST

Participants in this solicitation may protest Invitation to Bid specifications or award in accordance with Section 41-580 of the Financial Services Procedures Manual.

5.6 ITB POSTPONEMENT/CANCELLATION/WAIVER OF IRREGULARITIES

The City may, at its sole and absolute discretion, reject any and all, or parts of any and all, proposals; re-advertise this ITB; postpone or cancel, at any time, this ITB process; or waive any irregularities in this ITB or in the bid responses received as a result of this ITB. See Section 41-444 Financial Services Procedures Manual.

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PART 6 – GENERAL INFORMATION

6.1 PURCHASES BY OTHER AGENCIES ("PIGGYBACKING")

All bidders submitting a response to this solicitation agree that such response also constitutes a bid to all state agencies, municipalities and political subdivisions of the state of Florida under the same terms and conditions, for the same prices and the same effective period as this bid, should the bidder deem it in the best interest of its business to do so. This provision in no way restricts or interferes with any state agency, municipality or political subdivision to rebid any or all items.

6.2 DEVIATIONS

Any deviation from the specifications must be explained in detail on sheets attached to the Bid Form and labeled "Clarifications and Exceptions", and each deviation must be itemized by number and must specifically refer to the applicable specification paragraph and page. Otherwise, it will be considered that items offered are in strict compliance with these Specifications and the successful bidder will be held responsible for meeting the Specifications. If bidder wishes its Standard Terms and Conditions to be considered as part of its bid, such terms and conditions must be made part of the "Clarifications and Exceptions". The City reserves the following rights: to waive clarifications and exceptions in awarding the bid in the best interest of the City; to accept or reject any or all bids; to waive any or all irregularities; and to award the contract to the most responsive responsible bidder whose bid is determined by the City to be in its best interest.

NOTE: Bidders are strongly encouraged to submit any deviations or exceptions to the City before the question submittal deadline or proposals are due, so that based upon the City's response in the addendum, the bidder can determine if it is in their best interest to submit a response or not.

6.3 ACCEPTANCE OF TERMS

Acceptance of the Contract, Specifications, terms and conditions is a mandatory aspect of being considered responsive. Bidders wanting to challenge any of the Contract, Specifications, terms and conditions or question alternatives to any Specifications listed herein must do so in writing prior to the deadline for submitting questions. If the City does not authorize a change prior to bid closing via addendum, the Contract, Specifications and terms and conditions stand; any counter-proposal on Contract, Specifications, or terms and conditions, will be rejected, as will the bid.

6.4 BIDDER'S DECLARATION AND UNDERSTANDING

The bidder, declares that the only person or parties interested in this Bid are those named herein, that this Bid is, in all respects, fair and without fraud, that it is made without collusion with any official of the City, and that the Bid is made without any connection or collusion with any person submitting another Bid on this contract.

The bidder further declares that no City Commissioner, other City officer, or City employee directly or indirectly owns more than five (5) percent of the total assets or capital stock of the bidding entity, nor will directly or indirectly benefit by more than five (5) percent from the profits or emoluments of this contract. (For purposes of this paragraph, indirect ownership or benefit does not include ownership or benefit by a spouse or minor child.)

The bidder further declares that it has carefully examined the Specifications and that this Bid is made according to the provisions and under the terms of the Specifications, which Specifications are hereby made a part of this Bid. Bidder further declares that any deviation from the specifications are explained on separate sheets labeled Clarifications and Exceptions attached to this Bid Form and that each deviation is itemized by number and specifically refers to the applicable specification paragraph and page.

6.5 LOCAL PREFERENCE

In bidding of, or letting contracts for procurement of, supplies, materials, equipment and services, as described in the purchasing policies, the city commission, or other purchasing authority, may give a preference to local businesses in making such purchase or awarding such contract in an amount not to exceed five percent of the local business' total bid price, and in any event the cost differential should not exceed $25,000.00. Total bid price shall include not only the base bid price but also all alterations to that base bid price resulting from alternates which were both part of the bid and actually purchased and awarded by the City Commission or other authority. In the case of requests for proposals, letter of interest, best evaluated bids, qualifications or other solicitations and competitive negotiation and selection in which objective factors are used to evaluate the responses. Local Businesses are assigned five (5) percent of the total points of the total evaluation points.

Local business means the vendor has a valid business tax receipt, issued by the City of Gainesville at least six months prior to bid or proposal opening date, to do business in said locality that authorizes the business to provide the goods, services, or construction to be purchased, and a physical business address located within the limits of said locality, in an area zoned for the conduct of such business, from which the vendor operates or performs business on a day-to-day basis. Post office boxes are not verifiable and shall not be used for the purpose of establishing said physical address. In order to be eligible for local preference, in the Bid or RFP evaluation, the vendor must provide a copy of the business tax receipt and Zoning Compliance Permit. The business tax receipt must be issued at least six months prior to bid or proposal opening date. For more information on City's Local Preference Policy: Municipal Code Article X Local Preference Policy.

6.6 SMALL AND SERVICE-DISABLED VETERAN BUSINESS CERTIFIED BY THE CITY OF GAINESVILLE

Small or Service-Disabled Veteran's Business Enterprise Definition: A Small Business or a Service-Disabled Veteran's Business, which is duly licensed and authorized to engage in business and maintains a permanent principal place of operation with full time personnel within Alachua, Bradford, Columbia, Gilchrist, Levy, Putnam, or Union County and possess a current City business tax receipt as required, and is so certified by the Small and Service-Disabled Veteran's Business Program Coordinator.

It is the policy of the City of Gainesville that small and service-disabled veteran businesses as defined in the Small and Service-Disabled Veteran Business Program, have the maximum practical opportunity to participate in contracting opportunities provided by the City. In keeping with this policy, each bidder is asked to state whether it will utilize small and service-disabled veteran businesses that are eligible for assistance to perform work on the project(s) being advertised.

For bidders not yet certified by the City, a small and service-disabled veteran application may be accessed via the Diversity Business Management System website. To be considered as a certified small and/or service-disabled veteran business, a bidder must have a current certificate at the time of the solicitation submittal due date. For more information on certified small and service-disabled veteran businesses, please visit the Office of Equity and Inclusion website.

6.7 LIVING WAGE POLICY & COMPLIANCE

Living Wage requirements, Ordinance 020663, as amended in Ordinance 030168, and in Ordinance 180999, and as shown on the City's web page, applies to contracts solicited by the City after midnight on March 31, 2021.

Section 2-619. – Living Wage Requirements.

(a) The following are requirements of each service contractor/subcontractor:

(1) A service contract or/subcontractor shall pay a living wage to each of its covered employees during the time they are providing the covered services.

(2) A copy of the living wage rate shall be posted by the service contractor/subcontractor in a prominent place where it can easily be seen by the covered employees and shall be supplied to any covered employee upon request.

(3) Each service contractor shall make all of its service subcontractors aware of the requirements of this division and shall include the contract provisions listed in the **Sample Contract** under the *Living Wage* paragraph in each of its service subcontracts to ensure compliance with this article. The city shall not be deemed a necessary or indispensable party in any litigation between the service contractor and a subcontractor.

(4) A service contractor/subcontractor shall not discharge, reduce the compensation of, or otherwise retaliate against any covered employee for filing a complaint, participating in any proceedings or otherwise asserting the requirement to pay a living wage under this division. A covered employee who claims their employer has not paid them a living wage as required by this division may file a written com plaint with the city.

(5) Each service contractor/subcontractor shall produce payroll records, and any other requested documentation to the city as necessary for the city to audit or investigate compliance with or a reported violation of this division.

The adjusted Living Wage for this contract will be $15.00 per hour (Living Wage with Health Benefits) or $17.25 per hour if Health Benefits are not offered. The living wage for this contract will increase annually on the anniversary date of the contract at the City's prevailing living wage rate, which is updated October 1 each year.

6.8 APPRENTICE AND DISADVANTAGE WORKER REQUIREMENTS

Awarded bidder shall comply with the requirements of the Apprentice and Disadvantaged Workers as outlined in Article XI, Chapter 2 of the City's Code of Ordinances for any Work Orders over $300,000 issued under the awarded Agreement(s). Failure of the contractor to comply with the ordinance may result in termination of the contract.

6.9 DEBARMENT, SUSPENSION, OTHERWISE EXCLUDED

By submitting this bid response, bidder agrees that it:

- Is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- Has not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against it for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements or receiving stolen property;
- Is not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission or any of the offenses enumerated in paragraph (2) of this certification; and
- Has not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

6.10 PUBLIC ENTITY CRIME INFORMATION STATEMENT

For your information, Section 287.133 (2)(a) , Florida Statutes, contains the following provisions: "A person or affiliate who has been placed on the convicted vendor list following a conviction for 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 in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list."

6.11 INVESTIGATION OF ALLEGED WRONGDOINGS, LITIGATION/ SETTLEMENTS/FINES/PENALTIES

The City Commission specifically requests that responders to this document indicate in writing any investigations of wrongdoings, litigation and/or settlements, and fines or penalties (anywhere in the U.S) involving the bidder and specific contractors listed as projected to provide services to the City. You may be required to respond to questions on this subject matter.

6.12 TAXES, CHARGES AND FEES

The Bidder agrees that any applicable Federal, State and Local sales and use taxes, which are to be paid by City of Gainesville, are included in the stated bid prices. Since the City of Gainesville is often exempt from taxes for equipment, materials and services, it is the responsibility of the Contractor to determine whether sales taxes are applicable. The Contractor is liable for any applicable taxes which are not included in the stated bid prices.

6.13 COSTS INCURRED BY BIDDERS

All expenses involved with the preparation and submission of bid responses to the City, or any work performed in connection therewith shall be borne by the bidder(s). No payment will be made for any responses received, nor for any other effort required of or made by the bidder(s) prior to commencement of work as defined by a contract approved by the City Commission (if so required).

6.14 RULES; REGULATIONS; LICENSING REQUIREMENT

The bidder shall comply with all laws, ordinances and regulations applicable to the services contemplated herein, including those applicable to conflict of interest and collusion. Bidders 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.

6.15 NON-DISCRIMINATION POLICY AND COMMERCIAL NON-DISCRIMINATION REQUIREMENT

As a condition of entering into this agreement, the company represents and warrants that it will comply with Title VI and Title VII of the Civil Rights Act of 1964 and all other federal, state or local laws prohibiting discrimination. The company shall not discriminate on the basis of race, color, religion, gender, national origin, marital status, sexual orientation, age, disability or gender

identity, or other unlawful forms of discrimination in the solicitation, selection, hiring, commercial treatment of subcontractors, vendors, suppliers or commercial customers, nor shall the company retaliate against any person for reporting instances of such discrimination.

The City reserves the right to investigate any claims of illegal discrimination by the Contractor and in the event a finding of discrimination is made and upon written notification thereof, the Contractor shall take all necessary steps to cure and rectify such action to the reasonable satisfaction of the City. The company understands and agrees that a violation of this clause shall be considered a material breach of this agreement and may result in termination of this agreement, disqualification of the company from participating in City contracts, or other sanctions. This clause is not enforceable by or for the benefit of, and creates no obligation to, any third party.

For more information on this policy and requirement, please visit the Office of Equity and Inclusion.

6.16 NON-WARRANTY OF INVITATION TO BID

Due care and diligence have been used in preparing this solicitation, The City does not guarantee that the conditions described within this solicitation are the conditions that will be found in the field when actual construction is commenced. The City shall not be responsible for any error or omission in these specifications, nor for the failure on the part of the bidders to determine the full extent of the request. It is the sole responsibility of the bidders to ensure that they have all information necessary for the submittal of bids.

6.17 INTERPRETATION OF ESTIMATED QUANTITIES

The estimated quantities of work to be done and materials to be furnished under this solicitation, given in the bid form, shall be considered as approximate only and shall be used solely for the comparison of Bids received. The City does not guarantee that the quantities represented will be the actual quantities required for completion of the work, nor shall the bidder plead misunderstanding or deception because of such estimate of quantities or of the character, location or other conditions pertaining to the work. Payment to the awarded bidder shall be made only for the actual quantities of work performed or materials furnished in accordance with the plans and the final Agreement, and it is understood that the quantities may be increased or decreased as provided in the Agreement without invalidating any of the unit or lump sum prices bid.

6.18 SUBCONTRACTS

With the bid proposal, the successful bidder will have submitted to the City, for acceptance, a list of the names of proposed Subcontractors (see Proposed Subcontractors Form – Part 8 – Exhibits). Prior to the execution and delivery of the Agreement, the City will notify the successful Bidder in writing if either the City, after due investigation, has reasonable objection to any Subcontractor, person or organization on such list. The failure of the City to make objection to any Subcontractor, person or organization on the list prior to the execution and delivery of the Agreement shall constitute an acceptance of such Subcontractor, person or organization. Acceptance of any such Subcontractor, person or organization shall not constitute a waiver of any right of the City to reject work, material or equipment that is either defective or not in conformance with the requirements of the Agreement.

If prior to the execution and delivery of the Agreement, the City has reasonable objection to and refuses to accept any Subcontractor, person or organization on such list, the successful Bidder may, prior to such execution and delivery, either (i) submit an acceptable substitute without an increase in his Bid price, or (ii) withdraw his Bid and forfeit any Bid security. If, after the execution and delivery of the Agreement, the City refuses to accept any Subcontractor, person or organization on such list, the Contractor will submit an acceptable substitute, the Contract Amount shall be increased or decreased by the difference in cost occasioned by such substitution and an appropriate Change Order shall be issued. No such increase in the Contract Amount shall be allowed if the disputed Subcontractor was not identified on the Subcontractor list submitted prior to award of the Agreement.

6.19 RESPONSIBLE AGENT

The bidder shall designate and submit a responsible agent and alternate as necessary, for all dealings, communications, notices or contracts between the City and the bidder. Any notice or communication to or from the responsible agent shall be deemed to be a communication to the bidder.

6.20 INTERNATIONAL PROPOSER REQUIREMENTS

The City is unable to send ACH payments to international banks. Therefore, ACH payments will only be made to U.S.A. banks. Additionally, the international company must be from a country that has a tax treaty with the U.S.A. International proposers must agree to these requirements and provide proof of same should they receive an award recommendation.

6.21 UNIT PRICES

Shall be tabulated to calculate no more than two (2) decimal places. Unit prices less than $0.005 will be rounded off down the cent; unit prices equal to or greater than $0.005 will be rounded up to the next cent. Unit prices on the Bid Form will be used to correct any extensions, and if adjusted, shall be identified on the detailed tabulation as corrected.

6.22 REIMBURSABLES

When cost estimating travel, the City's travel policy allows for Coach air travel only. In addition, long distance phone calls, printing, and other administrative costs may be billed at cost only – no mark-up). Evidence of these expenditures will be submitted when invoicing the City.

6.23 DELIVERY

All pricing to include all shipping/delivery charges and delivery is to be F.O.B. Destination (City location).

6.24 ALTERNATES/EQUIVALENTS

When alternate line items are offered in addition to the base bid, the City reserves the right to consider any combination of the base bid plus any alternate(s) deemed necessary in order to establish the overall bid. The recommendation of award will be based on the lowest overall bid deemed responsive and responsible as determined by the City. When Brand Names are specified, the bidder must prove demonstrated equivalency in writing prior to the deadline for submitting questions when other than the Brand Name is being offered. The City reserves the right to reject submittals from bidders which have failed to receive approvals of acceptable equivalents, or alternatives.

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PART 7 – CONTRACT TERMS AND CONDITIONS

CONTINUING SERVICES AGREEMENT
PAVEMENT MANAGEMENT (PRESERVATION & SURFACING)

THIS AGREEMENT entered into and effective this day _____ of _____, 20____, between, _____ ("Contractor") and City of Gainesville, Florida,a Florida municipal corporation ("City"). Collectively, the City and Contractor are hereinafter referred to as the "Parties".

WITNESSETH:

In consideration of the mutual promises and covenants contained herein, and other good and valuable consideration, thereceipt and sufficiency of which is acknowledged by the Parties, the Parties hereby agree as follows:

1 **THE WORK.** The Contractor shall furnish all labor, material, equipment, and services covered by all documentsattached as exhibits and incorporated by reference in this Agreement, hereinafter collectively referred to as "Contract Documents", which shall include all necessary work and all work incidental thereto (the "Work"). All Work shall be performed and completed in accordance with the Contract Documents. The Contract Documents are made part of this Agreement as set forth herein. Receipt of the Contract Documents are herein acknowledged by the Contractor.

2 **TERM AND PRICING .**

2.1. **Term.** The Agreement is effective upon execution by both Parties and continuing through September 30, 2023 unless earlier terminated as provided herein. The Parties have the option of renewing this Agreement for two (2) additional (2) year periods at the same terms and conditions outlined herein.

2.1.1. The City's performance and obligation to pay under this Agreement is contingent upon a specific annual appropriation by the City Commission. The Parties hereto understand that this Agreement is not a commitment of future appropriations. Therefore, the continuation of this Agreement beyond the end of any fiscal year shall be subject to both the appropriation and the availability of funds in accordance with Chapter 129, Florida Statutes, and that the failure of the City Commission to do so shall not constitute a breach or default of this Supplemental Agreement.

2.2. **Pricing.** The Contractor shall be paid a sum not to exceed $4,000,000 per fiscal year. The City shall pay the Contractor in accordance with the pricing, as adjusted as provided herein, contained in the

awarded bid response as provided in **Exhibit 1** for all services actually, timely and faithfully performed.

2.2.1. Monthly bituminous adjustments are applicable to this Agreement as outline in the Technical Specifications

2.2.2. The City reserves the option to add additional services within the scope of the original bid. Such additional services and pricing shall be authorized in the form of a Work Order per Paragraph 4 of this Agreement.

2.2.3. The City shall reimburse the Contractor any costs and fees associated with Payment and Performance Bonds required by Paragraph 6 of this Agreement plus a three percent (3%) mark-up. Costs, fees and mark-up shall be authorized in the Work Order per Paragraph 4 of the Agreement.

2.2.4. Inasmuch as failure to complete the a Work Order within the time fixed will result in substantial injury to the City and whereas damages arising from such failure cannot be calculated with any degree of certainty, it is hereby agreedthat if such Work has not reached Milestone, Substantial or Final Completion within the time required a Work Order, the Contractorshall pay the City as liquidated damages and not as a penalty the sum outlined in the Technical Specifications for each and every calendar day after the date fixed for Milestone, Substantial or Final Completion.

2.2.5. Unit prices may be adjusted with term renewals based on a Consumer Price Index or Producer Price Index acceptable to the Parities.

3 COMPLIANCE WITH REGULATIONS.

3.1 The Contractor shall comply with all laws, ordinances, regulations and building code requirements applicable to the Work. The Contractor shall be familiar with all state and local laws, ordinances, code rules and regulations thatmay in any way affect the Work. Ignorance on the part of the Contractor will in no way relieve the Contractor of responsibility. The Contractor shall abide by and conduct its programs and provide its services in compliance withthe provisions of the Civil Rights Act of 1866, Civil Rights Act of 1871, Equal Pay Act of 1963, Civil Rights Act of 1964, Age Discrimination and Employment Acts of 1967, Rehabilitation Act of 1973, 1990 Americans with Disabilities Act, 1991 Federal Civil Rights Act, 1992 Florida Civil Rights Act, and all other applicable ordinances,statutes, laws and amendments thereto.

3.2 Section 448.095, Florida Statute states the statute shall be construed in a manner so as to be fully consistent with any applicable federal laws or regulations The Contractor shall (1) utilize the U.S.

Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Contractor duringthe term of the Agreement; and (2) shall expressly require any subcontractors performing work or providing servicespursuant to the Agreement to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verifythe employment eligibility of all new employees hired by the subcontractor during the contract term. Alternatively, Contractor shall provide proof that one of the exceptions to the E-Verify federal contractor rule applies.

3.3 **Living Wage.** The definitions, terms and conditions of the City's living wage requirements set forth in Division 2 of Article IX of Chapter 2 of the City's Code of Ordinances shall apply to this Agreement. These requirements include that the Contractor:

3.3.1 Shall pay a living wage to each covered employee during the term of this Agreement, including any extension(s) to this Agreement;

3.3.2 Shall maintain records sufficient to demonstrate compliance with the living wage requirements;

3.3.3 Shall not discharge, reduce the compensation of, or otherwise retaliate against any covered employee for filing a complaint, participating in any proceedings or otherwise asserting the requirement to pay a living wage; and

3.3.4 Shall cooperate with any city audit or investigation concerning compliance with or a reported violation of the living wage requirements, including providing all requested documentation.

Failure to comply with the City's living wage requirements shall be a material breach of this Agreement, enforceableby the City through all rights and remedies at law and equity.

3.4 **Apprentice and Disadvantage Worker Requirements**. Contractor shall comply with the requirements of the Apprentice and Disadvantaged Workers as outlined in Article XI, Chapter 2 of the City's Code of Ordinances for Work Orders issued in excess of $300,000. Reporting requirements therein shall be completed in accordance with Paragraph 29. Failure of the contractor to comply with the ordinance may result in termination of the contract.

4 AUTHORIZATION FOR WORK.

4.1 All services under this Agreement shall be authorized and performed in accordance with a written and jointly executed Work Order. A sample Work Order is included as **Exhibit 2**. Each Work Order shall consist of the work to be performed by the Contractor, the project schedule and any specific or

special provisions, pricing or specifications. Modifications to existing work orders shall be authorized and performed in accordance with a written and jointly executed Work Order Amendment. A sample Work Order Amendment is included as **Exhibit 3**. The City Manager, or designee, is authorized to initiate and sign Work Orders and Work Order Amendments on behalf of the City up to the amount authorized in Paragraph 2.

5 **PERFORMANCE AND PAYMENT BONDS.**

5.1 Within ten (10) business days after signature of Work Order in excess of $200,000 by the Parties, Contractor shall provide the City with Payment and Performance Bonds, in the forms prescribed as **Exhibits 4 & 5,** in the amount of 100% of the total sum of the Work Order, the costs of which are to be paid by the Contractor.

5.2 If the surety for any bond furnished by the Contractor is declared bankrupt, becomes insolvent, its right to do business is terminated in the State of Florida, or it ceases to meet the requirements imposed by the Contract Documents, the Contractor shall, within five (5) calendar days thereafter, substitute another bond and surety, both of which shall be subject to the minimum requirements noted above and City's approval.

5.3 In accordance with §255.05(1)(a), Florida Statutes, the Contractor shall record a copy of the Performance and Payment Bonds in the Public Records of Alachua County, Florida, prior to performing any Work under this Agreement. The Contractor shall deliver a certified copy of the recorded Performance and Payment Bonds to the City at least five (5) days prior to performing any Work. The timely delivery of the certified copy of the recorded Performance and Payment Bonds is a condition precedent to City's obligation to make any payments to the Contractor hereunder.

5.4 If at any time after the execution of this Agreement and the surety bonds required for its faithful performance and payment, the City shall deem the surety or sureties upon such bond to be unsatisfactory, or if, for any reason, such bond ceases to be adequate to cover the performance of the Work, the Contractor shall, at its own expense, within five (5) days after the receipt of notice from the City to do so, furnish an additional bond or bonds in such form and amount, and with surety or sureties as shall be satisfactory to the City. In such event, no further paymentto the Contractor shall be deemed to be due under this Agreement until such new or additional security for the faithful performance of the Work shall be furnished in a manner and form satisfactory to the City.

6 **NOTICES.** Except as otherwise provided in this Agreement, any notice of default or termination from either party to the other party must be in writing and sent by certified mail, return receipt requested,

by personal delivery withreceipt or by electronic mail to the email addresses below. Notices shall be deemed delivered two (2) business days after mailing, unless made by personal delivery in which case delivery shall be deemed to occur upon actual receipt bythe other party or by electronic mail in which case delivery shall be deemed to occur upon sending the communication.For purposes of all notices, Contractor and City representatives and addresses are:

City:

City of Gainesville Public Works
PO Box 490 MS 58
Gainesville, FL 32627-0490
Attn: Operations Manager
pubwrk@cityofgainesville.org

Contractor:

Contractor
Street Address
City, State ZIP
Contractor email.

7 **WAIVER OF CLAIMS AND CONTINUING OBLIGATIONS**.

7.1 It is agreed that when all Work for authorized by a Work Order has reached Final Completion and has been inspected and approved by the City, orthe City's authorized representatives, the Contractor shall furnish to the City the Contractor's Final Affidavit in theform attached hereto as **Exhibit 6,** or other such release as provided for in §255.05, Florida Statutes, and agreed to by the City. Submission of the Contractor's invoice for final payment shall further constitute the Contractor's representation to the City that all obligations of the Contractor to others, including but not limited to its consultants, subcontractors, and suppliers, incurred in connection with the Work Order have been paid in full. Contractor shall include, with its invoice for final payment, executed and notarized Waivers of Right to Claim against the PaymentBond, in the form attached hereto as **Exhibit 7**, from all laborers, materialmen and subcontractors defined in §713.01, Florida Statutes, who furnished labor, services, or materials for the prosecution of the Work providedfor in the applicable Work Order, unless the Contractor provides the City with a written consent from the surety regarding the Work Order or the payment in question.

7.2 The Contractor's obligations to perform the Work and complete the project in accordance with the Contract Documents shall be absolute. Neither approval of any progress, nor approval of any payment by the City, nor the issuance of a certificate of substantial completion, nor any use or occupancy of the project or any part thereof by the City, nor any act of acceptance by the City, nor any failure to do so, nor any correction of faulty or defective work by the City shall constitute an acceptance of Work not in accordance with the Contract Documents.

7.3 The making and acceptance of final payment shall constitute:

7.3.1 A waiver of all claims by the City against the Contractor, other than those arising from unsettled liens, fromfaulty or defective work appearing after final payment, or from failure to comply with the requirements ofthe Contract Documents or the terms of any special guarantees specified therein, and

7.3.2 A waiver of all claims by the Contractor against the City, other than those previously made in writing and still unsettled.

8 **INSURANCE.** Throughout the term of this Agreement, the Contractor shall provide insurance of the types and in the amounts set forth below**.** The Contractor shall also require any subcontractors to provide insurance as set forth below**.** A current copy of the Contractor Certificate of Insurance showing coverage of the types and in the amounts required is attached hereto as **Exhibit 8.** The Contractor shall procure and maintain for the duration of this Agreementinsurance against claims for injuries to persons or damages to property, which may arise from or in connection with theperformance of the Work hereunder by the contractor/vendor, its agents, representatives, employees or subcontractors.

8.1 **COMMERCIAL GENERAL LIABILITY.** Coverage must be afforded under a per occurrence form policy for limits not less than $1,000,000 General Aggregate, $1,000,0000 Products / Completed Operations Aggregate, $1,000,000 Personal and Advertising Injury Liability, $1,000,000 each Occurrence, $50,000 Fire Damage Liabilityand $5,000 Medical Expense.

8.2 **AUTOMOBILE LIABILITY.** Coverage must be afforded including coverage for all Owned vehicles, Hired and Non-Owned vehicles for Bodily Injury and Property Damage of not less than $1,000,000 combined single limit each accident.

8.3 **WORKERS COMPENSATION AND EMPLOYER'S LIABILITY.** Coverage to apply for all employees at STATUTORY Limits in compliance with applicable state and federal laws; if any operations are to be undertakenon or about navigable waters, coverage must be included for the USA

Longshoremen & Harbor Workers Act. Employer's Liability limits for not less than $100,000 each accident; $500,000 disease policy limit and $100,000 disease each employee must be included.

8.4 **BUILDER'S RISK / INSTALLATION FLOATERS (when applicable). Check box if applicable:** ☐

8.4.1 When this contract or agreement includes the construction of and/or the addition to a permanent structure or building; including the installation of machinery and/or equipment, the following insurance coverage must be afforded:

8.4.1.1 Coverage Form: Completed Value, All Risk in an amount equal to 100% of the value upon completionor value of equipment to be installed.

8.4.1.2 When applicable: Waiver of Occupancy Clause or Cessation of Insurance clause. Flood Insurance as available under the National Flood Insurance Program.

8.5 **EMPLOYEE FIDELITY COVERAGE (only applicable to vendors who's employees handle funds):**

Employee Dishonesty coverage must be afforded for not less than $500,000 Blanket all employees ISO Form.

8.6 **OTHER INSURANCE PROVISIONS.** The policies are to contain, or be endorsed to contain, the following provisions:

8.6.1 **Commercial General Liability and Automobile Liability Coverages.**

8.6.1.1 The City of Gainesville, Florida, a Municipal Corporation, its officials, employees and volunteers are to be covered as an Additional Insured as respects: Liability arising out of activities performed by or on behalf of the Contractor/Vendor; to include Products and/or Completed Operations of the Contractor/Vendor; Automobiles owned, leased, hired or borrowed by the Contractor.

8.6.1.2 The Contractor's insurance coverage shall be considered primary insurance as respects the City, its officials, employees and volunteers. Any insurance or self-insurance maintained by the City, its officials, employees or volunteers shall be excess of Contractor/Vendor's insurance and shall be non- contributory.

8.6.2 **All Coverages.** The Contractor/Vendor shall provide a Certificate of Insurance to the City with

a thirty (30)day notice of cancellation. The certificate shall indicate if cover is provided under a "claims made" or "peroccurrence" form. If any cover is provided under claims made from the certificate will show a retroactivedate, which should be the same date of the contract (original if contact is renewed) or prior.

8.7 **CERTIFICATE HOLDER**. City of Gainesville, Florida, a Municipal Corporation

9 **INCORPRATIONS BY REFERENCE AND GOVERNING ORDER OF DOCUMENTS.**

9.1 All documents listed below, if not contained herein, are hereby incorporated by reference in this Agreement. Incases of discrepancy, the governing order of the documents is as follows:

9.1.1 Work Order Amendments;

9.1.2 Work Orders;

9.1.3 Amendments;

9.1.4 This Agreement;

9.1.5 Bid Addendums;

9.1.6 Technical Specifications prepared by the City, signed and sealed on 6/9/2022;

9.1.7 Invitation to Bid No. _____;

9.1.8 Contractor's Bid Submittal.

9.1.9 Schedule of Values

10 **INDEMNIFICATION.**

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10.1 To the maximum extent permitted by Florida law, the Contractor shall indemnify and hold harmless the City, and their officers and employees from any and all liabilities, damages, losses and costs, including, but not limited to, reasonable attorneys' fees, caused by the negligence, recklessness, or intentional wrongful misconduct of the Contractor or anyone employed or utilized by the Contractor in the performance of this Agreement. Contractoragrees that indemnification of the City shall extend to any and all Work performed by the Contractor, its subcontractors, employees, agents, servants or assigns.

10.2 The Contractor obligation to indemnify under this Article will survive the expiration or earlier terminationof this Agreement.

10.3 This obligation shall in no way be limited in any nature whatsoever by any limitation on the amount or typeof the Contractor's insurance coverage, or by limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under

workers' compensation acts, disability benefit acts oremployee benefit acts.

10.4 Nothing contained in this paragraph is intended to nor shall it constitute a waiver of the City's sovereignimmunity or the provisions or limits of liability of §768.28, Florida Statutes.

11 PUBLIC RECORDS.

11.1 **General Provisions:**

11.1.1 Any document submitted to the City may be a public record and is open for inspection or copying by any person or entity. "Public records" are defined as all documents, papers, letters, maps, books, tapes, photographs, films, sound recordings, data processing software, or other material, regardless of the physicalform, characteristics, or means of transmission, made or received pursuant to law or ordinance or in connection with the transaction of official business by any agency per §119.011(12), Florida Statutes. Anydocument is subject to inspection and copying unless exempted under Chapter 119, Florida Statutes, or as otherwise provided by law.

11.1.2 Florida has a very broad public records law and certain records of a contractor may be considered public records. Accordingly, by entering into an agreement with the City, Contractor must:

11.1.3 Keep and maintain public records required by the City to perform the service.

11.1.4 Upon require 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 exceedthe cost provided in Chapter 119, Florida Statutes, or as otherwise provided by law.

11.1.5 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 and following completion of the contract if the Contractor does not transfer the records to the City.

11.1.6 Upon completion of the contract, transfer, at no cost, to the City all public records in possession of the Contractor or keep and maintain public records required by the City to perform the service. If the Contractortransfers all public records to the City upon completion of the contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the contract, the Contractor shall meet all

applicable requirements for retaining public records. All records stored electronically must be provide to the City, upon request of the City's custodian of public records, in a formatthat is compatible with the information technology systems of the City.

11.1.7 **IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT E-MAIL clerks@cityofgainesville.org PHONE (352-334-5015OR PO BOX 490, STATION 19, GAINESVILLE, FL, 32627-0490**

11.2 **Confidential Information**

11.2.1 During the term of this Agreement, the Contractor may claim that some or all of Contractor's information, including, but not limited to, software documentation, manuals, written methodologies and processes, pricing, discounts, or other considerations (hereafter collectively referred to as "Confidential Information"), is, or has been treated as confidential and proprietary by Contractor in accordance with §812.081, Florida Statutes, or other law, and is exempt from disclosure under the Public Record Act. Contractor shall clearlyidentify and mark Confidential Information as "Confidential Information" or "CI" and the City shall use reasonable efforts to maintain the confidentiality of the information properly identified by the Contractor as "Confidential Information" or "CI."

11.2.2 The City shall promptly notify the Contractor/Professional in writing of any request received by the City for disclosure of Contractor's Confidential Information and the Contractor may assert any exemption fromdisclosure available under applicable law by seeking a protective order against disclosure from a court of competent jurisdiction. Contractor shall protect, defend, indemnify, and hold the City, its officers, employees and agents free and harmless from and against any claims or judgments arising out of a requestfor disclosure of Confidential Information. Contractor shall investigate, handle, respond to, and defend, using counsel chosen by the City, at Contractor's sole cost and expense, any such claim, even if any such claim is groundless, false, or fraudulent. Contractor shall pay for all costs and expenses related to such claim, including, but not limited to, payment of attorney fees, court costs, and expert witness fees and expenses. Upon completion of this Agreement, the provisions of this paragraph shall continue to survive. Contractor releases City from claims or damages related

to disclosure by City.

11.2.3 **Project Completion:** Upon completion of the Work, or in the event this Agreement is terminated, the Contractor, when acting on behalf of the City as provided under §119.011(2), Florida Statutes, shall transfer, at no cost, to the City all public records in possession of the Contractor or keep and maintain publicrecords required by the City to perform the service. If the Contractor transfers all public records to the Cityupon completion or termination of the Agreement, it must destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon the completion or termination of the Agreement all applicable requirements for retaining public records shall be met. All records stored electronically shall 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.

11.3 **Compliance:** The Contractor may be subject to penalties under §119.10, Florida Statutes, if the Contractorfails to provide the public records to the City within a reasonable time.

12 STARTING THE WORK

12.1 Schedule

Within ten (10) days after execution of a Work Order under the Agreement, the Contractor will submit to the Public Works (PW) Operations Manager forapproval an estimated progress schedule indicating the starting and completion dates of the various stages of the Work and a schedule of Shop Drawings submissions.

12.2 Pre-Construction Conference

Before starting Work, a conference will be held to review the schedules and submittal package (See 12.5 Submittals), to establish procedures for handling Shop Drawings and other submissions, to establish procedures for processing applications for payment, and to establish a working understanding between theparties as to the project. Present at the conference will be the PW Operations Manager, and/or authorized representatives, the Contractor, and utility company representatives.

12.3 Notice to Proceed

Upon execution of a Work Order, the PW Operations Manager will give the Contractor a written Notice to Proceedstating date by which the Contractor must start the Work; but such date shall not be more than forty-five (45) days after the date of execution of the Work Order. No work shall be done prior to receipt of the Noticeto Proceed.

12.4 Commencement of Time

The Work Order Time shall commence on the date when the Work is actually started but no later than the dateprovided in the Notice to Proceed.

12.5 Submittals

The Contractor's submittal package for the Pre-Construction meeting shall include the Surveyor's LicenseConfirmation on a form provided by the City, Maintenance of Traffic Plan, Erosion & Sedimentation Control Plan, and Stormwater Pollution Prevention Plan, if applicable to the Work Order, to be accepted by the City prior to any constructionactivities along with any other requirements or permits and other submittal required by this Agreement or Work Order. Allsubmittals must be accepted by the City prior to implementation.

13 OWNERSHIP AND COPIES OF DOCUMENTS; RECORDDOCUMENTS

13.1 All Specifications, Drawings and copies thereof furnished by the City shall remain the property of the City.They shall not be used on another project, and with the exception of those sets of Contract Documents which havebeen signed in connection with the execution of the Agreement, shall be returned to the City on request upon completion of the project.

13.2 The Contractor will keep one record copy of all Specifications, Drawings, Addenda, Modifications, and Shop Drawings at the site in good order and annotated to show all changes made during the construction process. These shall be available to the PW Operations Manager.

14 WORK BY OTHERS

14.1 The City may perform additional work related to the project by itself, or may enter other contracts for work on the project. The Contractor shall afford the City and/or other contractors reasonable opportunity for the introduction and storage of materials and equipment and the execution of work and shall properly connect and coordinate the Contractor's work with theirs.

14.2 If any part of the Contractor's Work depends for proper execution or results upon the work of any such other contractor (or the City), the Contractor will inspect and promptly report to the PW Operations Manager in writing any defects or deficiencies that render it unsuitable. The Contractor's failure to so report shall constitute an acceptanceof the other work as to be fit and proper for the relationship of their Work, except as to defects and deficiencies which may appear in the other work after the execution of their Work.

14.3 The Contractor will do all cutting, fitting and patching of its Work that may be required to make its several parts come together properly and fit it to receive or be received by such other work. The Contractor will not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of the PW Operations Manager.

14.4 If the performance of additional work by other contractors or the City is not noted in the Contract Documents, written notice thereof shall be given to the Contractor prior to starting any such additional work. Contractor work schedules shall be adjusted to allow for any necessary utility adjustments identified prior to start of work. If the Contractor believes that the performance of such additional work by the City or others causes the Contractor additional expense or entitles it to an extension of the Work Order Time, it may make a claim as provided in Paragraphs 24 to 26.

15 RESPONSIBLE AGENT

15.1 The Contractor shall designate and submit a responsible agent and alternate as necessary, for all dealings, communications, or notices or contracts between the City and the Contractor.

15.2 The PW Operations Manager will be the responsible agent for the City. Any notice or communication to or from the responsible agent shall be deemed to be a communication to the Contractor.

16 ACCIDENT PREVENTION

16.1 Precaution shall be exercised at all times for the protection of employees, other persons and property.

16.2 Contractor's employees shall report to their superintendent any hazardous conditions or items in need of repair noted during the performance of work. Said superintendent shall thereupon notify the responsible agent of such conditions.

17 SUBCONTRACTS

17.1 The Contractor will not employ any Subcontractor (whether initially or as a substitute) against whom the City or the PW Operations Manager may have reasonable objection, nor will the Contractor

be required to employ any Subcontractor against whom he has reasonable objection. The Contractor will not make any substitution for any Subcontractor who has been accepted by the City and the PW Operations Manager, prior to written concurrence by the PW Operations Manager.

17.2 The Contractor will be fully responsible for all acts and omissions of its Subcontractors and of persons directly or indirectly employed by them and of persons for whose acts any of them may be liable to the same extentthat the Contractor is responsible for the acts and omissions of persons directly employed by it. Nothing in the Agreement shall create any contractual relationship between any Subcontractor and the City or any obligation on the part of the City to pay or to see to the payment due any Subcontractor, except as may otherwise be required bylaw. The PW Operations Manager may furnish to any Subcontractor, to the extent practicable, evidence of amounts paid to the Contractor as compensation for specific Work performed.

17.3 The Specifications and Drawings shall not control the Contractor in dividing the Work among Subcontractors or delineating the Work to be performed by any trade.

17.4 The Contractor agrees to specifically bind every Subcontractor to all of the applicable terms and conditionsof the Agreement. Every Subcontractor, by undertaking to perform any of the Work, will thereby be contractuallybound to the Contractor by such terms and conditions.

18 PHYSICAL AND SUBSURFACE CONDITIONS

18.1 The PW Operations Manager will, upon request, furnish to the Contractor copies of all available boundary surveys and subsurface tests.

18.2 The Contractor will promptly notify the PW Operations Manager in writing of any subsurface or latent physical conditions at the site differing materially from those indicated in the Contract Documents. The PW Operations Manager willpromptly investigate those conditions and determine if further surveys or subsurface tests are necessary. Promptly thereafter, the PW Operations Manager will obtain the necessary additional surveys and tests and furnish copies to the Contractor. If the PW Operations Manager finds that the results of such surveys or tests indicate subsurface or latent physical conditions differing significantly from those indicated in the Contract Documents, a Work Order Amendment shall be issued incorporating the necessary revisions.

19 PW OPERATIONS MANAGER'S STATUS DURING CONSTRUCTION.

19.1 The PW Operations Manager acting directly or through duly authorized representatives (Project Managers, Inspectors and Consultants) shall be the City's representative during the construction period. All instructions of the City to the Contractor shall be issued through the PW Operations Manager.

19.2 The PW Operations Manager will make periodic visits to the site to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. The PW Operations Manager will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work, nor will the PW Operations Manager be responsible for the construction means, methods, techniques, sequences, procedures or the safety precautions incident thereto. The PW Operations Manager's efforts will be directed toward providing assurance for the City that the completed project will conform to the requirements of the Contract Documents, but PW Operations Manager will not be responsible for the Contractor's failure to perform the Work in accordance with the Contract Documents. On the basis of the PW Operations Manager's on-site observations as an experienced and qualified construction professional, the PW Operations Manager will keep the City informed of the progress of the Work and will endeavor to guard the City against defects and deficiencies in the Work of the Contractor.

19.3 The PW Operations Manager will have authority to disapprove of or reject Work which is defective; i.e., it is unsatisfactory, faulty or defective, does not conform to the requirements of the Contract Documents or does not meet the requirements of any inspection, test or approval referred to in Paragraph 21. The PW Operations Manager will also have authority to require special inspection or testing of the Work as provided in Paragraph 23.3, whether or not the Work is fabricated, installed or completed.

19.4 Neither the PW Operations Manager's authority to act under Paragraph 19 nor any decision made by the PW Operations Manager in good faith to exercise or not exercise such authority, shall give rise to any duty or responsibility of the City to the Contractor and Subcontractor, any of their agents or employees or any other person performing any of the Work.

20 PW OPERATIONS MANAGER'S INTERPRETATIONS AND DECISIONS.

20.1 The PW Operations Manager will issue with reasonable promptness such written clarifications

or interpretations (in the form of drawings or otherwise) as necessary for the proper execution of the Work. Such clarifications and interpretations are to be consistent with or reasonably inferable from the overall intent of the Contract Documents.If the Contractor believes that a written clarification and interpretation entitles it to an increase in the Work Order Price,it may make a claim therefore as provided in Paragraph 25.

20.2 The PW Operations Manager will be the initial interpreter of the terms and conditions of the Contract Documents andthe judge of the performance thereunder. In this capacity, the PW Operations Manager will exercise best efforts to insure faithful performance by both the City and the Contractor. The PW Operations Manager will not show partiality to either and shall not be liable for the result of any interpretation or decision rendered in good faith. Claims, disputes and othermatters relating to the execution and progress of the Work or the interpretation of or performance under the Contract Documents shall be referred initially to the PW Operations Manager for decisions, which shall render in writing within a reasonable time.

20.3 The Contractor may appeal any written decision made by the PW Operations Manager within fourteen (14) days in accordance with Paragraph 36.

21 **TESTS AND INSPECTIONS.**

21.1 If the Agreement, laws, ordinances, rules, regulations or orders of any public authority having jurisdiction require any Work to be inspected, tested or approved by someone other than the Contractor, the Contractor will give the PW Operations Manager timely notice of readiness therefor. The Contractor will furnish the PW Operations Manager the required certificates of inspection, testing or approval. All such tests will be in accordance with the methods prescribed by the American Society for Testing and Materials or such other applicable organization as may be required by law or the Agreement. The cost of all such inspections, test and approvals shall be borne by the Contractor unless otherwise provided. If any such Work required so to be inspected, tested or approved is coveredup without written approval or consent of the PW Operations Manager, it must, if directed by the PW Operations Manager, be uncoveredfor observation at the Contractor's expense.

21.2 Any Work which fails to meet the requirements of any such test, inspection or approval, and any Work which meets the requirements of any such test or approval but does not meet the requirements of the Contract Documents, shall be considered defective. Such defective Work may be rejected, corrected or accepted as providedin Paragraph 28.

21.3 Neither observations by the PW Operations Manager nor inspections, tests, or approvals by persons other than the Contractor shall relieve the Contractor from its obligations to perform the Work in accordance with the Agreementrequirements of the Contract Documents.

22 CONTRACTOR'S SUPERVISION AND SUPERINTENDENCE.

22.1 The Contractor shall supervise and direct the Work efficiently and with its best skill and attention. The Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. Before undertaking the Work, the Contractor shall carefully study and compare the Contract Documents and check and verify all figures shown thereon and all field measurements. The Contractor will at oncereport in writing to the PW Operations Manager any conflict, error or discrepancy which it may discover. The Contractor willbe responsible to see that the finished Work complies accurately with the Contract Documents.

22.2 The Contractor shall maintain, at all times during its progress, a resident superintendent satisfactory to thePW Operations Manager. The superintendent shall not be replaced without the consent of the PW Operations Manager, except under extraordinary circumstances. The superintendent will be the Contractor's representative at the site and shall have authority to act on behalf of the Contractor. All communications given to the superintendent shall be as binding asif given to the Contractor and shall constitute notice under the applicable clauses of this Agreement.

22.3 The Contractor will provide competent, suitably qualified personnel and perform construction as required by the Contract Documents. If applicable to the Work Order, survey and layout work shall be performed under direction of a Florida Registered Land Surveyor. The surveyor is required to sign, seal and return a form provided by the City certifying the surveyorwill be responsible for providing layout. The Contractor will at all times maintain good discipline and order amongits employees at the site.

22.4 The City will not be responsible for the acts or omissions of the Contractor, any Subcontractors, any of their agents or employees or any other persons performing any of the Work.

22.5 The Contractor shall have a responsible person or persons available on a 24-hour basis seven (7) days a week in order that contact can be made in emergencies and in cases where immediate action must be taken to maintain traffic or to overcome any other problem that might arise. The furnishing

of a telephone number where such person or persons can be reached outside of normal working hours will constitute compliance with this provision.

23 ACCESS TO THE WORK: UNCOVERING FINISHED WORK.

23.1 The PW Operations Manager and its representatives and other representatives of the City will at all times have accessto the Work. The Contractor will provide proper facilities for such access and observation of the Work and also forany inspection or testing thereof by others.

23.2 If any Work is covered contrary to the request of the PW Operations Manager, it must, if requested by the PW Operations Manager, be uncovered for observation and replaced at the Contractor's expense.

23.3 If any Work has been covered which the PW Operations Manager has not specifically requested to observe prior to itsbeing covered, or if the PW Operations Manager considers it necessary or advisable that covered Work be inspected or testedby others, the Contractor, at the PW Operations Manager's request, will uncover, expose or otherwise make available for observation, inspection or testing, that portion of Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective or does not meet the requirements of the Contract Documents,the Contractor will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction, including compensation for additional professional services. If, however, such Work is found to be non-defective and meets the requirements of the Contract Documents, the Contractor will be allowed an increase in the Work Order Price or extension of the Work Order Time directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction if Contractor makes a claim therefore as provided in Paragraph 25 and 26.

24 CHANGES IN THE CONTRACT WORK.

24.1 Without invalidating the Agreement, the City may, at any time or from time to time, order additions, deletions, or revisions in the Work. These will be authorized by Work Oder or Work Order Amendment. Upon receipt of written authorization, the Contractor will proceed with the Work involved. All such Work shall be executed underthe applicable conditions of the Contract Documents. If any changes in the Work cause an increase or decrease inthe Work Order Price, addition of Pay Items, or an extension or shortening of the Work Order Time, an equitable adjustment will be made

as provided in Paragraphs 25 and 26 under a Change Order.

24.2 The Director or PW Operations Manager may authorize minor changes or alterations in the Work not involving extracost and not inconsistent with the overall intent of the Contract Documents. These may be accomplished by a Work Order or Work Order Amendment. If the Contractor believes that any minor change or alteration authorized by the Director or PW Operations Manager entitles the Contractor to an increase in the Work Order Price or Work Order Time, it may make a claim as provided in Paragraphs 25 and 26.

24.3 Additional work performed by the Contractor prior to written authorization will not automatically entitle it to additional compensation, an increase in the Work Order Price, or an extension of the Work Order Time.

24.4 It is the Contractor's responsibility to notify its surety of any changes affecting the general scope of the Work or change in the Work Order Price, and the amount of the applicable Bonds shall be adjusted accordingly. The Contractor shall furnish proof of such adjustment to the City.

25 CHANGE OF WORK ORDER PRICE.

25.1 The Work Order Price constitutes the total compensation payable to the Contractor for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by the Contractor shall be at its expense withoutchange in the Work Order Price.

25.2 The Work Order Price may only be changed by a Work Order Amendment. If the Contractor is entitled by the Contract Documents to make a claim for an increase in the Work Order Price, notice of intent to file a claim shall be delivered to the PW Operations Manager in writing within ten (10) days of the occurrence of the event giving rise to the claim. The claim shall then be delivered to the PW Operations Manager in writing within twenty (20) days after the conclusion of the event giving rise to the claim unless PW Operations Manager allows additional period of time to ascertain accurate cost data.IT IS EXPRESSLY AND SPECIFICALLY AGREED THAT ANY AND ALL CLAIMS FOR CHANGES TO THE WORK ORDER PRICE SHALL BE WAIVED IF NOT SUBMITTED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION. Work Order Amendments will be approved by the following procedure:

25.2.1 The City Manager, or designee, may approve Work Order Amendments that, either

cumulatively or individually, increase the Work Order Price within the amount authorized in Paragraph 2.

25.3 The value of any Work covered by a Work Order Amendment, for any claim for an increase in the Work Order Price, shall be determined in the following ways:

25.3.1 Where the Work involved is covered by unit prices contained in the Contract Documents, by application ofunit prices to the quantities of the items involved.

25.3.2 Mutual acceptance of a lump sum or unit price.

25.3.3 Cost and a mutually acceptable fixed amount for overhead and profit.

25.3.4 If none of the above methods is agreed upon, the value shall be determined on the basis of costs and a percentage for overhead and profit. Costs shall only include labor (payroll, payroll taxes, fringe benefits, workman's compensation, etc.) materials, equipment, and other incidentals directly related to the Work involved. The maximum percentage which shall be allowed for the Contractor's combined overhead, expenses, indirect costs and profit, shall be as follows:

25.3.4.1 For all such Wok done by the Contractor’s own forces, the Contractor may add up to 10% (ten percent) of its actual increase in cost; and,

25.3.4.2 For all such Work done by Subcontractors, each Subcontractor may add up to 10% (ten percent) of its actual net increase in cost for combined overhead and profit; and the Contractor may add up to 5% (five percent) of the Subcontractor's total for its combined overhead and profit, provided that no overhead or profit shall be allowed on costs incurred in connection with premiums for public liability insurance or other special insurance directly related to such Work.

25.4 Except for as provided in a Work Order Amendment, no financial claim for delay to the project resulting from the Work Order Amendment approval process will be allowed.

25.5 Pay factor adjustments shall be in accordance with details outlined in project manual/technical specifications.

25.6 Whenever the cost of any Work is to be determined pursuant to this section, the Contractor shall submit in a form acceptable to the City an itemized cost breakdown together with supporting documentation. Whenever a change in the Work is based upon mutual acceptance of a lump sum, whether the amount is an addition, credit, or no-change-in-cost, the Contractor shall submit an estimate substantiated by complete itemized breakdown:

25.6.1 The breakdown shall list quantities and unit prices for materials, labor, equipment and other items of costs.

25.6.2 Whenever a change involves the Contractor and one (1) or more subcontractor and the change is an increasein the agreed compensation, the overhead and profit percentage for the Contractor and each subcontractor shall be itemized separately.

26 **CHANGE OF THE WORK ORDER TIME.**

26.1 Work Order Time changes shall be by a Work Order Amendment. If the Contractor is entitled by the Contract Documentsto make a claim for an extension in the Work Order Time, notice of intent to file a claim shall be in writing delivered to the PW Operations Manager within ten (10) days of the occurrence of the event giving rise to the claim. The claim shall then be delivered to the PW Operations Manager in writing within fifteen (15) days after the conclusion of the event giving rise to the claim. IT IS EXPRESSLY AND SPECIFICALLY AGREED THAT ANY AND ALL CLAIMS FOR CHANGES TO THE WORK ORDER TIME SHALL BE WAIVED IF NOT SUBMITTED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION. The City Manager, or designee, may approve any extension in Work Order Time. Any change in the Work Order Time resulting from any such claim shallbe incorporated in a Work Order Amendment.

26.2 The Work Order Time will be extended in an amount equal to time lost due to delays beyond the control of theContractor, if it makes a claim therefore as provided in Paragraph 26.1. Such delays shall only include acts of neglect by any separate contractor employed by the City, fires, floods, labor disputes, epidemics, abnormal weatherconditions, acts of God or other delays at the sole discretion of the City.

26.2.1 Process for tracking and granting Weather Days shall be in accordance with the project manual/technical specifications. If the project manual/technical specifications is silent on

Weather Days then Work Order Time shall not be extended for weather. Requests for Weather Days shall be submitted monthly with the Contractor's application for payment. The Contractor's failure to submit a monthly request for Weather Days shall constitute a waiver of Work Order Time extensions for weather for all dates prior to submission ofthe application for payment.

26.3 All time limits stated in the Contract Documents are of the essence in the Agreement. The provisions of Paragraph 26 shall not exclude recovery for damages (including compensation for additional professional services)for delay by either party.

26.4 Except as provided in a Work Order Amendment, no financial claim for delay to the project resultingfrom the Work Order Amendment approval process will be allowed.

27 NEGLECTED WORK.

27.1 If the Contractor should neglect to prosecute the Work in accordance with the Agreement, including any requirements of the progress schedule, after three (3) days written notice to the Contractor, the City may, without prejudice to any other remedy it may have, make good such deficiencies, and the cost thereof (includingcompensation for additional professional services) shall be charged against the Contractor. In this case a Work Order Amendment shall be issued incorporating the necessary revisions in the Work Order, including an appropriate reduction inthe Work Order Price. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor will pay the difference to the City.

28 WARRANTY AND GUARANTEE; CORRECTION, REMOVAL ORACCEPTANCE OF DEFECTIVE WORK.

28.1 The Contractor warrants and guarantees to the City that all materials and equipment will be new unless otherwise specified; that all Work will be of good quality and free from faults or defects and in accordance with therequirements of the Contract Documents. All unsatisfactory Work, all faulty or defective Work and all Work not conforming to the requirements of the Contract Documents or of such inspections, tests or approvals shall be considered defective. Prompt notice of all defects shall be given to the Contractor. All defective Work, whether ornot in place, may be rejected.

28.2 If required by written notice of the Director or the PW Operations Manager prior to approval

of final payment, the Contractor will promptly, without cost to the City, either correct any defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by the PW Operations Manager, remove it from the site and replace it with non-defective Work. If the Contractor does not correct such defective Work or remove and replace such rejected Work within a reasonable time, the City may have the deficiency corrected or the rejected Work removedand replaced. All direct or indirect cost of such correction or removal and replacement, including compensation foradditional professional services, shall be paid by the Contractor, and an appropriate Work Order Amendment shall be issued deducting all such costs from the Work Order Price. The Contractor will also bear the expenses of making good all Work of others destroyed or damaged by the correction, removal or replacement of the Contractor's defective Work.

28.3 If, after the approval of final payment and prior to the expiration of one year after the date of substantial completion or such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents, any Work is found to be defective, the Contractor will promptly without cost to the City and in accordance with the City's written instructions either correct such defective Work, or, if it has been rejected by the City, remove it from the site and replace it with non-defective Work. If the Contractor does not promptly comply with the terms of such instructions, the City may have the defective Work corrected or the rejected Work removed and replaced, and all direct and indirect costs of such removal and replacement, including compensation for additional professional services, will be paid by the Contractor.

28.4 If, instead of requiring correction or removal and replacement of defective Work, the City prefers to acceptit, the City may do so. In such case, the appropriate reduction in the bid item amount shall be negotiated by the Contractor and City with the appropriate reductions submitted in the application for final payment. In the event the appropriate reduction cannot be negotiated, the provisions of Paragraph 25.3.4 shall prevail.

29 APPLICATIONS FOR PROGRESS PAYMENTS.

29.1 Not more than once a month, the Contractor will submit to the PW Operations Manager for review the application forpayment, covering the Work completed as of the date of the application. If payment is requested by the Contractoron the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the request for payment shall also be accompanied by such supporting data, satisfactory to the PW

Operations Manager, as will establish 100% of invoice cost. Such payment to the Contractor shallnot exceed seventy-five percent (75%) of the Unit Bid Price. Materials missing or damaged, for which partial or total payment has been made, shall be replaced by the Contractor at its expense.

29.2 The Contractor warrants and guarantees that title to all Work, materials and equipment covered by an application for payment, whether incorporated in the project or not, will have passed to the City prior to making theapplication for payment, free and clear of all liens, claims, security interests and encumbrances (hereafter referred to as "liens"). The Contractor further warrants and guarantees that no Work, materials or equipment covered by anapplication for payment will have been acquired by the Contractor or by any other person performing the Work at the site or furnishing materials and equipment for the Project subject to an agreement under which an interest thereinor encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person. Non-payment of Subcontractors and suppliers will be referred to the Contractor's Surety for resolution.

29.3 Five percent (5%) of the amount earned through each progress payment will be withheld as retainage.

29.4 Each application for payment shall be incomplete and not authorized for payment unless accompanied by the following documents:

29.4.1 A certification of payment to Subcontractors on a form provided by the City that all Subcontractors havingan interest in the Agreement were paid for satisfactory performance of their Agreements and that the retainage is returned to Subcontractors within 30 days after satisfactory completion of the Subcontractor’swork.

29.4.2 A waiver of claims, on a form provided by the City, for any and all Subcontractors or materialmen that have furnished a notice of non-payment. The City will honor an exception to this clause when the Contractor demonstrates good cause for not making any required payment and furnishes written notification of anysuch good cause to both the City and the affected Subcontractor.

29.4.3 If applicable, a report of Apprentice and Disadvantage Worker information for the Contractor and each Subcontractor that includes the following:

29.4.3.1. Total labor hours for the project;

29.4.3.2. Total labor hours performed by apprentice and disadvantaged workers;

29.4.3.3. The apprentice and/or disadvantage worker status for each such person; and

29.4.3.4. The name, address, work classification an hours worked each pay period for each apprentice and disadvantage worker on the construction project.

29.5 The PW Operations Manager will, within ten (10) days after Contractor concurrence of each application for payment,indicate in writing approval of payment, less any retainage as specified by the Agreement, and present the application to the City's Budget & Finance Department for payment. The City will pay the Contractor the amountapproved by the PW Operations Manager in accordance with Florida's Prompt Payment Act.

30 APPROVAL OF PAYMENTS.

30.1 The PW Operations Manager's approval of any payment requested in an application for payment shall constitute a representation to the City, based on the PW Operations Manager's on-site observations of the work in progress as an experienced and qualified construction professional and on its review of the application for payment and the supporting data, that the Work has progressed to the point indicated; to the best of its knowledge, information and belief, that the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning project upon substantial completion, to the results of any subsequent tests called for in the Contract Document and any qualifications stated in its approval); and that the Contractor is entitled to payment of the amount approved. However, by approving any such payment, the PW Operations Manager shall not thereby be deemed to have represented that exhaustive or continuous on-site inspections were made to check the quality or the quantityof the Work; that the means, methods, techniques, sequences and procedures of construction were reviewed; or thatany examinations were made to ascertain how or for what purpose the Contractor has used the monies paid or to bepaid to it.

30.2 The PW Operations Manager's approval of final payment shall constitute an additional representation to the City thatthe conditions precedent to the Contractor's being entitled to final payment, as set forth in Paragraph 31.3, have been fulfilled.

30.3 The PW Operations Manager may refuse to approve the whole or any part of any payment if, in their opinion, the PW Operations Manager is unable to make the foregoing representations to the

City. The PW Operations Manager may also refuse to approve any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, may nullify any such payment previously approved, to such extent as may be necessary in their opinion to protect the City from loss because:

30.3.1 The Work is defective.

30.3.2 Claims have been filed, or there is reasonable evidence indicating the probable filing thereof.

30.3.3 The Work Order Price has been reduced.

30.3.4 The City has been required to complete neglected Work in accordance with Paragraph 27.

30.3.5 The City has been required to correct defective Work or complete the Work in accordance with Paragraph 28.

30.3.6 Unsatisfactory prosecution of the Work, including failure to clean up as required by Paragraph 32.

31 **FINAL PAYMENT.**

31.1 Upon notification from the Contractor that the project is complete, the PW Operations Manager will make a final inspection with the Contractor and will notify the Contractor in writing of any particulars in which this inspection reveals that the Work is incomplete or defective. The Contractor shall immediately make such corrections as are necessary to remedy such defects.

31.2 After the Contractor has completed any such corrections to the satisfaction of the PW Operations Manager and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection and other documents, all as required by the Contract Documents, the Contractor may receive final payment pursuant to the procedure for progress payments. The final application for payment shall be accompanied by the Contractor's Final Apprentice & Disadvantage's Worker's Reporting (if applicable), Contractor's Final Payment Affidavit, Subcontractor/Materialman Waiver of Claims, and Final Payment Certification to Subcontractors, utilizing forms provided by the City. Nothing in this section waives the rights of the Contractor under Section 255.05(11), Florida Statutes. The PW Operations Manager will execute a Certificate of Completion and recommend final

payment.

31.3 If, on the basis of the PW Operations Manager's observation and review of the Work during construction, their final inspection and review of the final application for payment, all as required by the Contract Documents, the PW Operations Manager is satisfied that the Work has been completed and the Contractor has fulfilled all of its obligations under the Contract Documents, the PW Operations Manager will, within ten (10) days after Contractor's concurrence of the final application for payment, indicate in writing the PW Operations Manager's approval of payment and present the application tothe City Budget & Finance Department for payment. The City will pay the Contractor the amount approved by thePW Operations Manager in accordance with Florida's Prompt Payment Act.

31.4 If after substantial completion of the Work, final completion thereof is materially delayed through no faultof the Contractor, and the PW Operations Manager so confirms, the City shall, upon certification by the PW Operations Manager, makepayment of the balance due for that portion of the work fully completed and accepted. If the remaining balance forWork not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished, the written consent of the surety to the payment of the balance due for that portion of the Work fullycompleted and accepted shall be submitted by the Contractor to the PW Operations Manager prior to certification of such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shallnot constitute a waiver of claim.

32 CLEANING UP.

32.1 The Contractor shall keep the premises free from accumulations of waste materials, rubbish and other debrisresulting from the Work, and, at the completion of the Work, it shall remove all waste materials, rubbish and debrisfrom and about the premises, as well as all tools, construction equipment and machinery and surplus materials, leaving the site clean and ready for occupancy by the City. The Contractor shall restore to their original condition those portions of the site not designated for alteration by the Contract Documents.

33 CITY'S RIGHT TO STOP OR SUSPEND WORK.

33.1 If the Work is defective, if the Contractor fails to supply sufficient skilled workmen or suitable

materials or equipment, if the Contractor fails to comply with the Contract Documents or Specifications, or if the Contractor fails to make prompt payments to Subcontractors for labor, materials or equipment, the City may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated. The Contractor will be allowed no increase in Work Order Price or extension of the Work Order Time. The City may, at any time and without cause, suspend the Work, or any portion thereof, for a period of notmore than ninety (90) days by notice in writing to the Contractor, and shall determine the date on which the Work will resume. The Contractor shall resume the work on the date so determined. The Contractor may be allowed anincrease in the Work Order Price or an extension of the Work Order Time directly attributable to any suspension providedthe Contractor makes a claim as provided in Paragraphs 25 and 26.

34 DEFAULT AND CITY'S RIGHT TO TERMINATE.

34.1 The failure of the Contractor to comply with any provision of this Agreement will place the Contractor in default. Prior to terminating the Agreement, the City will notify the Contractor in writing. This notification will make specific reference to the provision which gave rise to the default. The City will give the Contractor seven (7)days to cure the default or develop a plan and time line acceptable to the City to cure the default. The PW Operations Manageris authorized to provide written notice of default on behalf of the City, and if the default situation is not corrected within the allotted time, the Public Works Director is authorized to provide final termination notice on behalf of theCity to the Contractor.

34.2 If the Contractor is adjudged bankrupt or insolvent, or makes a general assignment for the benefit of its creditors, or if a trustee or receiver is appointed for the Contractor or for any of its property, or if the Contractor files a petition to take advantage of any debtors' act, or to reorganize under the bankruptcy or similar laws, or repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or repeatedly fails to makeprompt payments to Subcontractors or for labor, materials, or equipment, or disregards laws, ordinances, rules, regulations or orders of any public body having jurisdiction, or disregards the authority of the Director of PW Operations Manager, or Contractor otherwise violates any provisions of the Contract Documents, then the City may, without prejudice to any other right or remedy and after giving the Contractor and its surety seven (7) days written notice, terminate the service of the Contractor and take possession of the project and of all materials related the Work andfinish the Work by whatever method the City may deem expedient. In such case, the Contractor shall not be entitledto receive any further payment until the work is

finished.

34.3 Upon thirty (30) days written notice to the Contractor, the City may, without cause and without prejudice to any other right or remedy, elect to abandon the project and terminate the Agreement. In such case, the Contractor shall be paid for all Work executed and any expense sustained plus a reasonable profit. The Public Works Director is authorized to provide written notice of termination on behalf of the City.

34.4 If funds to finance this Agreement become unavailable, the City may terminate the Agreement with no less than twenty-four (24) hours' notice in writing to the Contractor. The City will be the final authority as to the availability of funds. The City will pay the Contractor for all work completed prior to any notice of termination.

34.5 Where the Contractor's services have been terminated by the City, said termination shall not affect any rights of the City against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the City due the Contractor will not release the Contractor from liability.

35 CONTRACTOR'S RIGHT TO STOP WORK OR TERMINATE.

35.1 If, through no act or fault of the Contractor, the Work is suspended for a period of more than ninety (90) days by the City or an order of court or other public authority, or if the PW Operations Manager fails to act on any application for payment within thirty (30) days after it is submitted, or if the City fails to pay the Contractor any sum approved by the PW Operations Manager within thirty (30) days of its approval and presentation, then the Contractor may, upon seven (7) days written notice to the City, terminate the Agreement and recover from the City payment for all Work executed in accordance with the Agreement plus fair and reasonable overhead and profit. In addition and in lieu of terminating the Agreement, if the PW Operations Manager has failed to act on an application for payment or the City has failed to make payment as aforesaid, the Contractor may, upon seven (7) days' notice to the City and the PW Operations Manager, stop Work until it has been paid all amounts then due.

36 DISPUTE RESOLUTION.

36.1 Initial Administrative Resolution: The Contractor may appeal to the Director within fourteen

(14) days of a written decision made by the PW Operations Manager. Failure of the Contractor to appeal any decision within this timeframe shall constitute the Contractor's acceptance of the PW Operations Manager's decision and render any claims or disputes relatedto the decision waived. Such appeals to the Director shall detail the Contract Document provisions that conflict with the PW Operations Manager's decision. The Director shall review each appeal and the Director and Contractor will seek to resolve the appeal through exchange of information and direct negotiations. The Director shall render its decision in writing within thirty (30) days of submission of the appeal; failure of the Director to render a decision within thistimeframe shall render the appeal denied.

36.2 Secondary Administrative Resolution: The Contractor may appeal to the City Manager within fourteen (14)days of a written decision made by the Director. Failure of the Contractor to appeal any decision within this timeframe shall constitute the Contractor's acceptance of the Director's decision and render any claims or disputesrelated to the decision waived. Such appeals to the City Manager shall detail the Contract Document provisions thatconflict with the Director's decision. The City Manager and Contractor will seek to resolve the appeal through exchange of information and direct negotiations. The City Manager shall render its decision in writing within forty-five (45) days of submission of the appeal; failure of the City Manager to render a decision within this timeframe shall render the appeal denied. The City Manager's decision shall be the final administrative decision and is a necessary condition precedent for exhaustion of administrative remedies in order to initiate mediation and a lawsuitbased on this Agreement.

36.3 Mediation: For any disputes which remain unsolved and have not been waived, within sixty (60) calendardays after Final Completion of the Work, the parties shall participate in mediation in Alachua County, Florida to address all unresolved disputes. If the Contractor wishes to contest any decision made by the City Manager, Contractor shall request mediation by providing written notice to the PW Operations Manager within thirty (30) days of the City Manager's written decision. Such notice shall detail the Contract Document provision that conflict with the City Manager's decision. Failure of the Contractor to provide such notice shall constitute the Contractor's acceptance of the City Manager's decision and render any claims or disputes related to the decision waived. The Parties shall submit the dispute to mediation prior to filing, and as a condition precedent to, an action in court, whichmust be filed within thirty (30) days of conclusion of mediation, or the dispute shall be waived. The City shall provide the Contractor a list of three mediators and the Contractor shall select a mediator from the list. The Partiesshall each pay one-half of the mediator's fees and costs. Should any dispute not be resolved in mediation, the parties retain all their legal rights and remedies under

applicable law, to extent not waived in accordance with this Agreement.

37 **WORKPLACE VIOLENCE.**

37.1 Employees of the Contractor are prohibited from committing any act of workplace violence. Violation may be grounds for termination of the Agreement. Workplace violence means the commission of any of the following acts by a Contractor's employee:

37.1.1 Battery: intentional offensive touching or application of force or violence to another.

37.1.2 Stalking: willfully, maliciously and repeatedly following or harassing another person.

38 **DUTIES AND OBLIGATIONS.** The rights and remedies available hereunder, and in particular without limitation, the warranties, guarantees and obligations imposed upon the Contractor by this Agreement and the rights and remediesavailable to the City thereunder, shall be in addition to and not a limitation of any otherwise imposed or available by law, special guarantee, or other provisions of this Agreement.

39 **POLLUTION ABATEMENT.** The Contractor shall comply with all federal, state and local laws and regulations controlling pollution of the environment. The Contractor shall take necessary precautions to prevent pollution of soils,creeks, streams, lakes, wetlands and ponds with fuels, oils, bitumens, chemicals and other harmful materials and shall take necessary measures to minimize soil erosion.

40 **INJURY OR DAMAGE TO PEOPLE OR PROPERTY.** Should the City or the Contractor suffer injury or damageto its person or property because of any error, omission or act of the other or of any of their employees or agents or others for whose acts they are legally liable, claims shall be made in writing to the other party within a reasonable timeof the first observance of such injury or damage.

41 **HEALTH CONSIDERATIONS.** The Contractor shall provide and maintain, in a neat and sanitary condition, such accommodations for the use of its employees as are necessary to comply with the requirements and regulations of the State and Local Boards of Health. The Contractor shall commit no public nuisance.

42 **SEVERABILITY.** It is understood and agreed by the Parties that if any provision of the Agreement shall contravene, or be invalid under the laws of the State of Florida, such contravention or invalidity shall not invalidate the entire Agreement, but it shall be construed as if not containing the particular provision or provisions held to be invalid, and the rights and obligations of the Parties shall be construed and enforced accordingly.

43 **AMENDMENT.** This Agreement may be amended only by written amendment, work order or work order amendment.

44 **INDEPENDENT CONTRACTOR.** In the performance of this Agreement, the Contractor will be acting in thecapacity of an independent Contractor, and not as an agent, employee, partner, joint venture,

or associate of the City. The Contractor shall be solely responsible for the means, methods and techniques, sequences and procedures utilized by the Contractor in the full performance of this Agreement. Neither Contractor nor anyone employed by Contractor shall represent, act, purport to act, or to be deemed to be the agent, representative, employee or servant of the City.

45 **GOVERNING LAW AND VENUE.** The laws of the State of Florida, notwithstanding its conflict of lawsprovisions, shall govern this Agreement. Sole and exclusive venue for all actions arising under this Agreement shall bein Alachua County.

46 **COMPLETE AGREEMENT.** This Agreement contains the sole and entire agreement between the City and the Contractor and supersedes any other written or oral agreements between them not incorporated herein.

47 **NON WAIVER.** The failure of any party to exercise any right in this Agreement will not waive such right in the event of any further default or non-compliance.

48 **SUCCESSORS AND ASSIGNS.** The Contractor shall not assign its rights hereunder, excepting its right to payment, nor shall it delegate any of its duties hereunder without the written consent of the City. Subject to the provisions of thepreceding sentence, each party hereto binds itself, its successors, assigns and legal representatives to the other and to the successors, assigns and legal representatives of such other party. Nothing herein shall be construed as creating anypersonal liability on the part of any officer or agent of the City.

49 **NO THIRD PARTY BENEFICIARIES.** Nothing contained herein shall create any relationship, contractual or otherwise, with, or any rights in favor of, any third party.

THE REMAINDER OF THIS PAGE IS LEFT INTENTIONALLY BLANK

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed for the uses and purposestherein expressed on the day and year first above-written.

CONTRACTOR

_____

Print Name:_____

Title:_____

Date: _____

CITY OF GAINESVILLE, FLORIDA

_____

_____, City Manager

Date: _____

APPROVED AS TO FORM AND LEGALITY

_____

City Attorney

EXHIBIT 1: FEE SCHEDULE

Exhibit 2 – Work Order Form

WORK ORDER NO:
PROJECT DESCRIPTION:

City: City of Gainesville, a municipal corporation if State of Florida.

Date Issued:

CONTRACTOR:

Execution of the Work Order by the City shall serve as authorization for the Contractor to provide for the above project, Contractor services as set out in the Scope of Work attached as Exhibit "A," to that certain Agreement of _____ dated _____ between the City and the Contractor 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:

[ ] Drawings/Plans/Specifications

[ ] Scope of Work dated _____

[ ] Special Conditions

[ ] _____

The Contractor shall provide said Work 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 upon the date written above. Substantial Completion shall be met by _____ and Final Completion shall be met by _____.

METHOD OF COMPENSATION: The Contractor shall perform all Work require by this Work Order for a sum not exceeding _____ DOLLARS ($_____). The Contractor's compensation shall be based on the actual Work required by this Work Order. All reimbursable expenses and allowances are itemized in Exhibit "A"

The City shall make payment to the Contractor in strict accordance with the payment terms of the above-referenced Agreement.

It is expressly understood by the Contractor that the City, prior to execution of the Work Order, reserves the right to authorize a party other than the Contractor 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 on this _____ day of _____, 20_____, for the purposes stated herein.

WITNESS

_____
Signature

_____
Print Name

Date: _____

CONTRACTOR:

By: _____
Signature

Title: _____
Print Name and Title

Date: _____

CITY

By: _____
_____, City Manager

Date: _____

APPROVED AS TO FORM AND LEGALITY

_____

City Attorney

EXHIBIT 3: AMENDMENT TO WORK ORDER

WORK ORDER NO.:

AMENDMENT NO.:

Project Description:

City: City of Gainesville, Florida

Date Issued:

Contractor:

Original Work Order Description:
Amendment Revisions:

Original Work Order Price:	
Total of Prior Approved Changes	
Amount of this Change in Work Order Add or (deduct)	
New Work Order Price with This Amendment:	

Original Substantial Completion Date: Original Final Completion Date:
New Substantial Completion Date: New Final Completion Date:

CITY:
By: _____
Title: _____
Date: _____

CONTRACTOR:
By: _____
Print Name: _____
Title: _____
Date: _____

EXHIBIT 4: PAYMENT BOND FORM

CONTRACTOR (PRINCIPAL)

COMPANY (LEGAL NAME):

PRINCIPAL BUSINESS ADDRESS (No PO Box):

TELEPHONE NUMBER:

SURETY

COMPANY (LEGAL NAME):

PRINCIPAL BUSINESS ADDRESS (No PO Box):

TELEPHONE NUMBER:

OWNER (OBLIGEE)

NAME: City of Gainesville, Florida, Municipal Corporation

PRINCIPAL BUSINESS ADDRESS: 200 E University Avenue, Gainesville, Florida 32601

TELEPHONE NUMBER: 352-334-5000

CONTRACT DETAILS

CONTRACT NO.:

DATE EXECUTED:

AMOUNT:

GENERAL DESCRIPTION:

STREET ADDRESS OF PROJECT:

PO NO., RFP, OR BID NO.:

BOND

BOND NUMBER:

DATE:

AMOUNT:

KNOW ALL MEN BY THESE PRESENTS:

That Principal, hereinafter called Contractor, and Surety, as identified above, are bound to City of Gainesville, Florida, as Obligee, and hereinafter called the City, in the amount identified above, for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

This payment bond is executed pursuant to §255.05, Florida Statutes, and claimants must comply with the notice and time limitations of §255.05(2) and §255.05(10), Florida Statutes.

WHEREAS, Contractor has by written Contract entered into a Contract, identified above, with the City, which Contract Documents are by reference made part hereof, and for the purposes of this Bond are hereafter referred to as the "Contract."

THE CONDITION OF THIS BOND is that if Contractor promptly makes payments to all persons defined in §713.01, Florida Statutes, who furnish labor, materials and supplies used directly or indirectly by Contractor in the performance of the Contract; then CONTRACTOR'S OBLIGATION SHALL BE VOID; OTHERWISE, IT SHALL REMAIN IN FULL FORCE AND EFFECT.

The surety hereby waives notice of and agrees that any changes in or under the Contract and compliance or noncompliance with any formalities connected with the Contract or the changes do not affect surety's obligation under this bond.

The provisions of this bond are subject to the notice and time limitations of §255.05(2) and §255.05(10). In no event will the Surety be liable in the aggregate to claimants for more than the penal sum of this Payment Bond, regardless of the number of suits that may be filed by claimants.

SIGNATURES NEXT PAGE

Signed and sealed this_____day of_____, 20_____.

CONTRACTOR (PRINCIPAL)

Signed, sealed and delivered
in the presence of:

_____ _____

_____ By:_____

Witnesses as to Contractor

Name:_____

Title:_____

STATE OF _____

CITY 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, on behalf of the corporation. He/she is personally known to me **OR** has produced _____ as identification.

Notary Public (Signature) :_____

Printed Name: _____

My Commission Expires: _____ (AFFIX NOTARY SEAL)

SURETY

SIGNATURE: _____

SEAL

PRINTED NAME AND TITLE: ATTORNEY IN FACT

EXHIBIT 5: PERFORMANCE BOND FORM

CONTRACTOR (PRINCIPAL)

COMPANY (LEGAL NAME):

PRINCIPAL BUSINESS ADDRESS (No PO Box):

TELEPHONE NUMBER:

SURETY

COMPANY (LEGAL NAME):

PRINCIPAL BUSINESS ADDRESS (No PO Box):

TELEPHONE NUMBER:

OWNER (OBLIGEE)

NAME: City of Gainesville, Florida, Municipal Corporation

PRINCIPAL BUSINESS ADDRESS: 200 E University Avenue, Gainesville, Florida 32601

TELEPHONE NUMBER: 352-334-5000

CONTRACT DETAILS

CONTRACT NO.:

DATE EXECUTED:

AMOUNT:

GENERAL DESCRIPTION:

STREET ADDRESS OF PROJECT:

PO NO., RFP, OR BID NO.:

BOND

BOND NUMBER:

DATE:

AMOUNT:

KNOW ALL MEN BY THESE PRESENTS:

That Principal, hereinafter called Contractor, and Surety, as identified above, are bound to City of Gainesville, Florida, as Obligee, and hereinafter called the City, in the amount identified above, for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS, Contractor has by written Contract entered into a Contract, identified above, with City, which Contract Documents are by reference made a part hereof, and for the purposes of this Bond are hereafter referred to as the "Contract";

THE CONDITION OF THIS BOND is that if Contractor:

1. performs the Contract between Contractor and City, at the times and in the manner prescribed in the Contract; and
2. pays City all losses, damages, including liquidated damages and damages caused by delay, expenses, costs and attorney's fees including appellate proceedings, that City sustains as a result of default by Contractor under the Contract; and
3. 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 AND EFFECT.

Whenever Contractor shall be, and is declared by City to be, in default under the Contract, and City having performed City's obligations there under, the Surety may promptly remedy the default, or shall promptly:

1. complete the Contract in accordance with its terms and conditions; or
2. obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if City elects, upon determination by City and Surety jointly of the lowest responsible bidder, arrange for a Contract between such Bidder and City, and make available as work progresses sufficient funds, paid to City, to pay the cost of completion and other costs and damages for which the Surety may be liable hereunder.

No right of action shall accrue on this bond to or for the use of any person of corporation other than City named herein.

The Surety, for value received, hereby stipulates and agrees that no changes, extensions of time, alterations or additions to the terms of the Contract or other Work to be performed hereunder, or the specifications referred to therein shall in any way affect its obligations under this bond, and it does hereby waive notice of any such changes, extensions of time, alterations or additions to the terms of the Contract or to Work or to the specifications.

This instrument shall be construed in all respects as a common law bond. It is expressly understood that the time provisions and statute of limitations under §255.05, Florida Statutes, shall not apply to this bond.

In no event will the Surety be liable in the aggregate to Obligee for more than the penal sum of this Performance Bond regardless of the number of suits that may be filed by Obligee.

Signed and sealed this_____day of_____, 20_____.

CONTRACTOR (PRINCIPAL)

Signed, sealed and delivered
in the presence of:

_____ _____

_____ By:_____

Witnesses as to Contractor

Name:_____

Title:_____

STATE OF _____

CITY 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, on behalf of the corporation. He/she is personally known to me **OR** has produced _____ as identification.

Notary Public (Signature) :_____

Printed Name: _____

My Commission Expires: _____ (AFFIX NOTARY SEAL)

SURETY

SIGNATURE: _____

SEAL

PRINTED NAME AND TITLE: ATTORNEY IN FACT

EXHIBIT 6: CONTRACTOR'S FINAL PAYMENT AFFIDAVIT FORM

STATE OF FLORIDA

CITY OF _____

Before me, the undersigned authority, personally appeared _____, who after being duly sworn, deposes and says:

(1) He or she is the (title) _____, of _____, which does business in the State of Florida, hereinafter referred to as the "Contractor."

(2) Contractor, pursuant to that certain Work Order dated _____ ("Contract") with the City of Gainesville, Florida, a municipal corporation and political subdivision of the State of Florida, hereinafter referred to as the "Owner," has furnished or caused to be furnished labor, materials, and services for _____, as more particularly set forth in said Contract.

(3) This affidavit is executed by the Contractor in accordance with §713.06 of the Florida Statutes for the purposes of obtaining final payment from the Owner in the amount of $_____.

(4) Contractor certifies, represents and warrants that it has paid all persons defined in §713.01, Florida Statutes, who furnished labor, services, or materials for the prosecution of the Work provided for in the Contract ("Claimants"), all amounts owed them from any previous payments received by Contractor from the Owner and has not withheld any such amounts.

(5) Contractor certifies, represents and warrants that all Work to be performed under the Contract has been fully completed, and all Claimants have been paid in full.

(6) In accordance with the Contract Documents and in consideration of $_____ paid, Contractor releases and waives for itself and all Claimants, including their successors and assigns, all claims demands, damages, costs and expenses, whether in contract or in tort, against Owner relating in any way to the performance of the Contract.

(7) Contractor certifies, represents and warrants for itself and its subcontractors, materialmen, successors and assigns, that all charges for labor, materials, supplies, lands, licenses and other expenses for which Owner might be sued or for which a lien or a demand against any payment bond might be filed, have been fully satisfied and paid.

Contractor:

By:_____

_____

Its:_____

_____ Date:_____

Witnesses

[Corporate Seal]

STATE OF _____

CITY 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, on behalf of the corporation. He/she is personally known to me **OR** has produced _____ as identification.

Notary Public (Signature) _____

Printed Name: _____

My Commission Expires: _____

(AFFIX NOTARY SEAL)

EXHIBIT 7: FINAL PAYMENT BOND WAIVER FORM

WAIVER OF RIGHT TO CLAIM AGAINST THE PAYMENT BOND (FINAL PAYMENT)

OWNER: City of Gainesville, Florida, a municipal corporation and political subdivision of the State of Florida

CONTRACTOR:

PROJECT: Work Order dated _____ ("Contract") for labor, materials, and services for _____.

The undersigned Claimant, for itself and its successors and assigns, and in consideration of the final payment made in the amount of $_____, hereby waives and releases its right to claim against the payment bond, and further waives, releases and discharges the Owner and Contractor from any and all claims, demands, obligations, damages, actions, and causes of action, direct or indirect, in law or in equity, for labor, services or materials furnished through _____(insert date) to_____, on the job of the City of Gainesville, Florida, a municipal corporation and political subdivision of the State of Florida, for improvements associated with the above referenced Project.

DATED ON _____.

Claimant:_____

By: _____

(Name)

Title:_____

(Print Title)

STATE OF _____

CITY 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, on behalf of the corporation. He/she is personally known to me **OR** has produced _____ as identification.

Notary Public (Signature) _____

Printed Name: _____

My Commission Expires: _____

(AFFIX NOTARY SEAL)

EXHIBIT 8: CERTIFICATE OF INSURANCE

PART 8 – EXHIBITS

The following documents/forms are included in this section:

- Drug-Free Workplace Form
- Bidder Verification Form
- Customer History
- Responsible Agent Form
- Proposed Subcontractor's Form
- Project Manager and Superintendent or Owner's Experience form (if required as specified in Section 1.5)

DRUG-FREE WORKPLACE FORM

The undersigned bidder in accordance with Florida Statute 287.087 hereby certifies that

_____ does:
(Name of Bidder)

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 the 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 this section.

As the person authorized to sign the statement, I certify that this bidder complies fully with the above requirements.

_____
Bidder's Signature

_____
Date

In the event of a tie bid, bidders with a Drug Free Workplace Program will be given preference. To be considered for the preference, this document must be completed and uploaded to DemandStar.com with your Submittal.

BIDDER VERIFICATION FORM

LOCAL PREFERENCE (Check one)
Local Preference requested: ☐ YES ☐ NO

A copy of the following documents must be included in your submission if you are requesting Local Preference:

- Business Tax Receipt
- Zoning Compliance Permit

QUALIFIED SMALL BUSINESS AND/OR SERVICE DISABLED VETERAN BUSINESS STATUS (Check one)
Is your business qualified, in accordance with the City of Gainesville's Small Business Procurement Program, as a local Small Business? ☐ YES ☐ NO

Is your business qualified, in accordance with the City of Gainesville's Small Business Procurement Program, as a local Service-Disabled Veteran Business? ☐ YES ☐ NO

LIVING WAGE COMPLIANCE
See Living Wage Decision Tree:
(Check one)

☐ Living Wage Ordinance does not apply (check all that apply)
- ☐ Not a covered service
- ☐ Contract does not exceed $100,000
- ☐ Not a for-profit individual, business entity, corporation, partnership, limited liability company, joint venture, or similar business, who or which employees 50 or more persons, but not including employees of any subsidiaries, affiliates or parent businesses.
- ☐ Located within the City of Gainesville enterprise zone.

☐ Living Wage Ordinance applies and the completed Certification of Compliance with Living Wage is included with this bid.

NOTE: If Contractor has stated Living Wage Ordinance does not apply and it is later determined Living Wage Ordinance does apply, Contractor will be required to comply with the provision of the City of Gainesville's living wage requirements, as applicable, without any adjustment to the bid price.

REGISTERED TO DO BUSINESS IN THE STATE OF FLORIDA
Is Bidder registered with Florida Department of State's, Division of Corporations, to do business in the State of Florida?
☐ YES ☐ NO (refer to Part 1, 1.5, last paragraph)

If the answer is "YES", provide a copy of SunBiz registration or SunBiz Document Number (#_____)
If the answer is "NO", please state reason why: _____

_____

DIVERSITY AND INCLUSION (Applies to solicitations above $50,000)
Does your company have a policy on diversity and inclusion? ☐ YES ☐ NO

If yes, please attach a copy of the policy to your submittal.

Note: Possessing a diversity and inclusion policy will have no effect on the City's consideration of your submittal, but is simply being requested for information gathering purposes.

_____
Bidder's Name

_____
Printed Name/Title of Authorized Representative

____
Signature of Authorized Representative Date

This page must be completed and uploaded to DemandStar.com with your Submittal.

CUSTOMER HISTORY

Name of Bidder: ____

Provide a list of prior customers **<u>for similar services</u>** that your bidder has provided within the last five (5) years. Copy form as necessary.

Customer Name:	
Address:	
City, State, Zip:	
Point of Contact:	Phone Number:
E-mail:	

Customer Name:	
Address:	
City, State, Zip:	
Point of Contact:	Phone Number:
E-mail:	

Customer Name:	
Address:	
City, State, Zip:	
Point of Contact:	Phone Number:
E-mail:	

Customer Name:	
Address:	
City, State, Zip:	
Point of Contact:	Phone Number:
E-mail:	

Customer Name:	
Address:	
City, State, Zip:	
Point of Contact:	Phone Number:
E-mail:	

This page must be completed and uploaded to DemandStar.com with your Submittal.

RESPONSIBLE AGENT FORM

RESPONSIBLE AGENT: _____

ADDRESS: _____

PHONE NO.: _____

FAX NO.: _____

EMAIL ADDRESS: _____

ALTERNATE RESPONSIBLE AGENT: _____

ADDRESS: _____

PHONE NO.: _____

FAX NO.: _____

EMAIL ADDRESS: _____

This page must be completed and uploaded to DemandStar.com with your Submittal.

PROPOSED SUBCONTRACTORS FORM

Name of Bidder: _____

This form is for all Subcontractors being utilized on this project.

Name of Contractor: _____

Address: _____

Scope of Work to be Performed: _____

Total $ Value: $_____ % of Total BID/RFP: _____%

Name of Contractor: _____

Address: _____

Scope of Work to be Performed: _____

Total $ Value: $_____ % of Total BID/RFP: _____%

Name of Contractor: _____

Address: _____

Scope of Work to be Performed: _____

Total $ Value: $_____ % of Total BID/RFP: _____%

Name of Contractor: _____

Address: _____

Scope of Work to be Performed: _____

Total $ Value: $_____ % of Total BID/RFP: _____%

Name of Contractor: _____

Address: _____

Scope of Work to be Performed: _____

Total $ Value: $_____ % of Total BID/RFP: _____%

If additional space is required for your subcontractor listing, make copies of this form and submit with you bid package.

This page must be completed and uploaded to DemandStar.com with your Submittal.

PROJECT MANAGER AND SUPERINTENDENT OR OWNER'S EXPERIENCE

NAME AND TITLE	ROLE IN THIS PROJECT	YEARS EXPERIENCE	
		TOTAL	WITH THIS FIRM

RELEVANT PROJECTS

1. PROJECT TITLE AND LOCATION (city and state)	**YEAR COMPLETED**
BRIEF DESCRIPTION (Brief scope, size, costs, etc.) and SPECIFIC ROLE ☐Check if project completed with current firm	
2. PROJECT TITLE AND LOCATION (city and state)	**YEAR COMPLETED**
BRIEF DESCRIPTION (Brief scope, size, costs, etc.) and SPECIFIC ROLE ☐Check if project completed with current firm	
3. PROJECT TITLE AND LOCATION (city and state)	**YEAR COMPLETED**
BRIEF DESCRIPTION (Brief scope, size, costs, etc.) and SPECIFIC ROLE ☐Check if project completed with current firm	
4. PROJECT TITLE AND LOCATION (city and state)	**YEAR COMPLETED**
BRIEF DESCRIPTION (Brief scope, size, costs, etc.) and SPECIFIC ROLE ☐Check if project completed with current firm	
5. PROJECT TITLE AND LOCATION (city and state)	**YEAR COMPLETED**
BRIEF DESCRIPTION (Brief scope, size, costs, etc.) and SPECIFIC ROLE ☐Check if project completed with current firm	
6. PROJECT TITLE AND LOCATION (city and state)	**YEAR COMPLETED**
BRIEF DESCRIPTION (Brief scope, size, costs, etc.) and SPECIFIC ROLE ☐Check if project completed with current firm	

This page must be completed and uploaded to DemandS Page must be completed once or twice and uploaded to DemandStar.com with your Submittal if required by 1.5

PART 9 – NO BID SURVEY

GENERAL GOVERNMENT
PROCUREMENT DIVISION SURVEY
BID INFORMATION

INVITATION TO BID #: PWDA-230027-DH DUE DATE: January 30, 2023 @ 3:00 p.m., local time

BID TITLE: Pavement Management (Preservation & Surfacing) Continuing Services

IF YOU DO NOT BID

If you choose to not bid, please complete this form, and either upload it into DemandStar.com or email to the procurement specialist. Your responses will assist the City in developing future solicitations, your responses will remain anonymous and will be aggregated into a spreadsheet for anaylsis purposes only.

Check the appropriate responses and provide additional information that may help the City develop future solicitations.

1. _____ The solicitation time-frame was too short
2. _____ My company did not learn of this solicitation until it was too late to develop a response
3. _____ My company's work load did not allow time to develop a submittal
4. _____ If awarded, my company's work load could not support this project
5. _____ Specifications were not clear
6. _____ My company does not handle this type of work
7. _____ My company does not submit responses to Municipalities
8. _____ Have experienced delays in payments from Government agencies in the past
9. _____ Is there anything the City could have done differently in the solicitation package to prompt your company to submit a proposal?
   Explain:_____
10. _____ If the City were to rebid this solicitation, would your company be interested in responding?
11. _____ Please provide any additional information regarding this solicitation that may help us develop our next steps in fulfilling the City's needs for this project.

_____

_____

_____

Bidder Name: _____

Address: _____

_____

Is your company a certified City of Gainesville small business? ☐ YES ☐ NO

Is your company a certified City of Gainesville service-disabled veteran business? ☐ YES ☐ NO

CITY OF GAINESVILLE

Public Works Department

Technical Specifications

Pavement Management (Preservation and Surfacing) Continuing Services

The Technical Specifications denoted in this Table of Contents were prepared under the direction and responsible charge of the engineer below; the specifications herein are in compliance with generally acceptable engineering practices for roadway construction in the State of Florida.

Brian M. Singleton, P.E., Florida P.E. Registration Number 78551
City Engineer, City of Gainesville Public Works
405 NW 39th Avenue, Gainesville, Florida 32609

BRIAN M. SINGLETON LICENSE No. 78551 STATE OF FLORIDA PROFESSIONAL ENGINEER

JUNE 22

Technical Specifications Table of Contents

01 GENERAL

All described in these specifications supplement the work detailed in the Work Orders issued under the Pavement Management (Preservation & Surfacing) Continuing Services Agreement. In the event any work conflicts with the aforementioned Work Orders and the Work Order Provisions shall prevail.

All work shall be performed in accordance with the construction drawings and the FDOT Standard Specifications for Road and Bridge Construction, January 2022 edition, except as provided for in these "Technical Specifications." Deviation from these standards will be permitted only upon presentation of specific written authorization by the City.

Whenever, in the Florida Department of Transportation's Standard Specifications for Road and Bridge Construction, the following terms or their pronouns occur, they shall be defined as follows: Department of Transportation: City of Gainesville, Florida, or its duly authorized representative.

State Highway Engineer, State Transportation Engineer, District Engineer, Engineer of Materials and Tests, Engineer, Inspector: The City of Gainesville Public Works Operations Manager.

02 STANDARD DOCUMENTS

Construction shown on the construction drawing shall conform to the technical portions of the:

Florida Department of Transportation Standard Specifications for Road and Bridge Construction, January 2022 edition, the Florida Greenbook, 2018 edition and the Americans with Disabilities Act Guidelines, except when otherwise indicated hereinafter.

The construction drawings reference Index Sheets and Standards which are the FDOT Standard Plans for Roadway and Bridge Construction, FY 2022-2023 edition.

References to Article Numbers, hereinafter, apply to the FDOT Standard Specifications for Road and Bridge Construction, January 2022 edition.

All traffic control devices and procedures shall conform to the FDOT Standards and/or Federal Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), 2009 edition

03 MODIFICATIONS TO THE FDOT STANDARD SPECIFICATIONS

All work on the roadway portion of this Contract shall conform to the applicable technical specifications of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, January 2022 edition, and the current edition of Supplemental Specifications thereto, except as modified and supplemented hereinafter or in the "Technical Specifications" section. The following shall be interpreted as additions unless otherwise noted. In the event that any information contained hereinafter or in the "Technical Specifications" section conflict with the FDOT Standard Specifications, the provisions contained herein shall prevail.

SECTION 1 DEFINITIONS AND TERMS

1-3 Definitions:

Calendar Day Contract
Work Order in which contract time is specified in calendar days.

Contract Documents
Includes Work Orders, Agreements, Work Order Amendments and any other documents issued after opening of bids.

Department
Shall be understood to be the City of Gainesville or authorized representative of the City.

Holidays
To Holidays listed, add Juneteenth, Election Day and Christmas Eve Day.

Non-Working Day

Weekends, holidays unless approval is granted by the City and any other time suspensions.

Substantial Completion

Substantial completion shall be defined in each Work Order.

Supplemental Agreement

This term shall be understood to be Work Order Amendment.

Working Day

Any day the Contractor performs work in accordance a Work Order. Saturdays, Sundays and City-designated holidays are generally not considered working days; unless prior approval is received from the Public Works Operations Manager, work shall not be performed on weekends and holidays. If work is performed on weekends and holidays under a Working Day Contract, a working day shall be charged.

Working Day Contract

Work Order in which contract time is specified in working days.

SECTION 2 PROPOSAL REQUIREMENTS AND CONDITIONS

Delete this section. Processing of bid proposals shall be in accordance with the "Invitation to Bid" in the Invitation to Bid package.

SECTION 3 AWARD AND EXECUTION OF CONTRACT

Delete this section excluding the sections noted below. Awarding of bids shall be in accordance with the "Instruction to Bidders" in the Invitation to Bid package.

3-8 Audit of Contractor's Records

Upon execution of the Agreement, the City reserves the right to conduct an audit of the Contractor's records pertaining to the project. The City or its representatives may conduct an audit, or audits, at any time prior to final payment, or thereafter pursuant to 5-13. The City may also require submittal of the records from either the Contractor or any subcontractor or material supplier. As the City deems necessary, records include all books of account, supporting documents, and papers pertaining to the cost of performance of the Work.

Retain all records pertaining to the Agreement for a period of not less than three years from the date of the Engineer's final acceptance of the project, unless a longer minimum period is otherwise specified. Upon request, make all such records available to the City or its representative(s). For the purpose of this Article, records include but are not limited to all books of account, supporting documents, and papers that the City deems necessary to ensure compliance with the provisions of the Contract Documents.

If the Contractor fails to comply with these requirements, the City may disqualify or suspend the Contractor from bidding on or working as a subcontractor on future Agreements.

Ensure that the subcontractors provide access to their records pertaining to the project upon request by the City.

Comply with Section 20.055(5), Florida Statutes, and incorporate in all subcontracts the obligation to comply with Section 20.055(5), Florida Statutes.

SECTION 4 SCOPE OF THE WORK

Delete this section excluding the following:

4-3 Alteration of Plans or Character of Work

4-3.1 General: The Engineer reserves the right to make, at any time prior to or during the progress of the work, such increases or decreases in quantities, whether a significant change or not, and such alterations in the details of construction, whether a substantial change or not, including but not limited to alterations in the grade or alignment of the road or structure or both, as may be found necessary or desirable by the Engineer. Such increases, decreases or alterations shall not constitute a breach of a Work Order, shall not invalidate the Work Order, nor release the Surety from any liability arising out of a Work Order or the Surety bond. The Contractor agrees to perform the work, as altered, the same as if it had been a part of the original Work Order.

The term "significant change" applies only when:

(1) The Engineer determines that the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction, or

(2) A major item of work is defined as an increase in excess of 125% or decreased below 75% of the original Agreement quantity. The City will apply any price adjustment for an increase in quantity only to that portion in excess of 125% of the original Agreement item quantity in accordance with 4-3.2 below. In the case of a decrease below 75% the City will only apply a price adjustment for the additional costs that are a direct result of the reduction in quantity.

In (1) above, the determination by the Engineer shall be conclusive. If the determination is challenged by the Contractor in any proceeding, the Contractor must establish by clear and convincing proof that the determination by the Engineer was without any reasonable basis.

4-3.2 Increase, Decrease or Alteration in the Work: The Engineer reserves the right to make alterations in the character of the work which involve a substantial change in the nature of the design or in the type of construction or which materially increases or decreases the cost or time of performance. Such alteration shall not constitute a breach of a Work Order, shall not invalidate the Agreement or release the Surety.

Notwithstanding that the Contractor shall have no formal right whatsoever to any extra compensation or time extension deemed due by the Contractor for any cause unless and until the Contractor follows the procedures set forth in 5-12.2 for preservation, presentation and resolution of the claim, the Contractor may at any time, after having otherwise timely submitted a notice of intent to claim or preliminary time extension request pursuant to 5-12.2 and 8-7.3.2, submit to the Engineer a request for equitable adjustment of compensation or time or other dispute resolution proposal. The Contractor shall in any request for equitable adjustment of compensation, time, or other dispute resolution proposal certify under oath and in writing, in accordance with the formalities required by Florida law, that the request is made in good faith, that any supportive data submitted is accurate and complete to the Contractor's best knowledge and belief, and that the amount of the request accurately reflects what the Contractor in good faith believes to be the City's responsibility. Such certification must be made by an officer or director of the Contractor with the authority to bind the Contractor. Any such certified statements of entitlement and costs shall be subject to the audit provisions set forth in 5-12.14. While the submittal or review of a duly certified request for equitable adjustment shall neither create, modify, nor activate any legal rights or obligations as to the Contractor or the City, the City will review the content of any duly certified request for equitable adjustment or other dispute resolution proposal, with any further action or inaction by the City thereafter being in its sole discretion. Any request for equitable adjustment that fails to fully comply with the certification requirements will not be reviewed by the City.

The monetary compensation provided for below constitutes full and complete payment for such additional work and the Contractor shall have no right to any additional monetary compensation for any direct or indirect costs or profit for any such additional work beyond that expressly provided below. The Contractor shall be entitled to a time extension only to the extent that the performance of any portion of the additional work is a controlling work item and the performance of such controlling work item actually extends completion of the project due to no fault of the Contractor. All time related costs for actual performance of such additional work are included in the compensation already provided below and any time extension entitlement hereunder will be without additional monetary compensation. The Contractor shall have no right to any monetary compensation or damages whatsoever for any direct or indirect delay to a controlling work item arising out of or in any way related to the circumstances leading up to or resulting from additional work (but not relating to the actual performance of the additional work, which is paid for as otherwise provided herein), except only as provided for under 5-12.6.2.1.

4-3.2.1 Allowable Costs for Extra Work: The Engineer may direct in writing that extra work be done and, at the Engineer's sole discretion, the Contractor will be paid pursuant to an agreed in a Work Order Amendment as outlined in the Agreement, Paragraph 25.3. In the event the Contractor must be paid in accordance with the Agreement, Paragraph 25.3.4, the following terms shall apply:

1. Labor and Burden: The Contractor will receive payment for actual costs of direct labor and burden for the additional or unforeseen work. Labor includes foremen actually engaged in the work; and will not include project supervisory personnel nor necessary on-site clerical staff, except when the additional or unforeseen work is a controlling work item and the performance of such controlling work item actually extends completion of the project due to no fault of the Contractor. Compensation for project supervisory personnel, but in no case higher than a Project Manager's position, shall only be for the pro-rata time such supervisory personnel spent on the Agreement. In no case shall an officer or director of the Company, nor those persons who own more than 1% of the Company, be considered as project supervisory personnel, direct labor or foremen hereunder.

   Payment for burden shall be limited solely to the following:

Table 4-3.2.1	
Item	Rate
FICA	Rate established by Law
FUTA/SUTA	Rate established by Law
Medical Insurance	Actual
Holidays, Sick & Vacation benefits	Actual
Retirement benefits	Actual
Workers Compensation	Rates based on the National Council on Compensation Insurance basic rate tables adjusted by Contractor's actual experience modification factor in effect at the time of the additional work or unforeseen work.
Per Diem	Actual but not to exceed State of Florida's rate
Insurance*	Actual
*Compensation for Insurance is limited solely to General Liability Coverage and does not include any other insurance coverage (such as, but not limited to, Umbrella Coverage, Automobile Insurance, etc.).	

   At the Pre-construction conference, certify to the Engineer the following:

   a. A listing of on-site clerical staff, supervisory personnel and their pro-rated time assigned to the Agreement,

   b. Actual Rate for items listed in Table 4 3.2.1,

   c. Existence of employee benefit plan for Holiday, Sick and Vacation benefits and a Retirement Plan, and,

   d. Payment of Per Diem is a company practice for instances when compensation for Per Diem is requested.

   Such certification must be made by an officer or director of the Contractor with authority to bind the Contractor. Timely certification is a condition precedent to any right of the Contractor to recover compensations for such costs, and failure to timely submit the certification will constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to recover such costs. Any subsequent changes shall be certified to the Engineer as part of the cost proposal or seven calendar days in advance of performing such extra work.

2. Materials and Supplies: For materials accepted by the Engineer and used on the project, the Contractor will receive the actual cost of such materials incorporated into the work, including Contractor paid transportation charges (exclusive of equipment as hereinafter set forth). For supplies reasonably needed for performing the work, the Contractor will receive the actual cost of such supplies.

3. Equipment: For any machinery or special equipment (other than small tools), including fuel and lubricant, the Contractor will receive 100% of the "Rental Rate Blue Book" for the actual time that such equipment is in operation on the work, and 50% of the "Rental Rate Blue Book" for the time the equipment is directed to standby and remain on the project site, to be calculated as indicated below. The equipment rates will be based on the latest edition (as of the date the work

to be performed begins) of the "Rental Rate Blue Book for Construction Equipment" or the "Rental Rate Blue Book for Older Construction Equipment," whichever is applicable, as published by Machinery Information Division of PRIMEDIA Information, Inc. (version current at the time of bid), using all instructions and adjustments contained therein and as modified below. On all projects, the Engineer will adjust the rates using regional adjustments and Rate Adjustment Tables according to the instructions in the Blue Book.

Allowable Equipment Rates will be established as set out below:

a. Allowable Hourly Equipment Rate = Monthly Rate/176 x Adjustment Factors x 100%.

b. Allowable Hourly Operating Cost = Hourly Operating Cost x 100%.

c. Allowable Rate Per Hour = Allowable Hourly Equipment Rate + Allowable Hourly Operating Cost.

d. Standby Rate = Allowable Hourly Equipment Rate x 50%.

The Monthly Rate is The Basic Machine Rate Plus Any Attachments. Standby rates will apply when equipment is not in operation and is directed by the Engineer to standby at the project site when needed again to complete work and the cost of moving the equipment will exceed the accumulated standby cost. Standby rates will not apply on any day the equipment operates for eight or more hours. Standby payment will be limited to only that number of hours which, when added to the operating time for that day equals eight hours. Standby payment will not be made on days that are not normally considered work days on the project.

The City will allow for the cost of transporting the equipment to and from the location at which it will be used. If the equipment requires assembly or disassembly for transport, the City will pay for the time to perform this work at the rate for standby equipment.

Equipment may include vehicles utilized only by Labor, as defined above.

4. Indirect Costs, Expenses, and Profit: Compensation for all indirect costs, expenses, and profit of the Contractor, including but not limited to overhead of any kind, whether jobsite, field office, division office, regional office, home office shall be in accordance with the Agreement, Paragraph 25.3.4.

The Contractor will receive compensation for any premium for acquiring a bond for such additional or unforeseen work at the original Agreement bond rate paid by the Contractor; the Contractor shall provide documentation to the City demonstrating the bond rate paid in order to receive additional compensation for bond premiums. No compensation for bond premium will be allowed for additional or unforeseen work paid via initial contingency pay items.

4-3.2.2 Subcontracted Work: Compensation for additional unforeseen work performed by subcontractor shall be limited solely to that provided in 4-3.2.1 and the Agreement, Paragraph 25.3.4.

4-3.7 Differing Site Conditions

During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the Work Order, or if unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Work Order are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before the Contractor disturbs the conditions or performs the affected work.

Upon receipt of written notification of differing site conditions from the Contractor, the Engineer will investigate the conditions, and if it is determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Work Order, an adjustment will be made, excluding loss of anticipated profits, and the Work Order will be modified in writing accordingly. The Engineer will notify the Contractor whether or not an adjustment of the Work Order is warranted.

The Engineer will not allow an adjustment for a differing site condition unless the Contractor has submitted the required written notice.

The Engineer will not allow an adjustment under this clause for any effects caused to any other City or non-City projects on which the Contractor may be working.

4-3.8 Changes Affecting Utilities

The Contractor shall be responsible for identifying and assessing any potential impacts to a utility that may be caused by the changes proposed by the Contractor, and the Contractor shall at the time of making the request for a change notify the City in writing of any such potential impacts to utilities.

City approval of a Contractor proposed change does not relieve the Contractor of sole responsibility for all utility impacts, costs, delays or damages, whether direct or indirect, resulting from Contractor initiated changes in the design or construction activities from those in the original Work Order, Design Plans (including Traffic Control Plans) or other Contract Documents and which effect a change in utility work different from that shown in the Utility Plans, joint project agreements or utility relocation schedules.

4-3.9 Cost Savings Initiative Proposal: Remains in its entirety.

SECTION 5 CONTROL OF THE WORK

Subsection 5-12 is replaced as follows:

5-12 Claims by Contractor:

5-12.1 General: When the Contractor deems that extra compensation or a time extension is due beyond that agreed to by the Engineer, whether due to delay, additional work, altered work, differing site conditions, breach of Agreement, or for any other cause, the Contractor shall follow the procedures set forth in the Agreement, Paragraphs 24 through 26 and herein for preservation, presentation and resolution of the claim.

Submission of timely notice of intent to file a claim, preliminary time extension request, time extension request, and the certified written claim, together with full and complete claim documentation, are each a condition precedent to the Contractor bringing any circuit court, arbitration, or other formal claims resolution proceeding against the City for the items and for the sums or time set forth in the Contractor's certified written claim. The failure to provide such notice of intent, preliminary time extension request, time extension request, certified written claim and full and complete claim documentation within the time required shall constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to additional compensation or a time extension for such claim.

5-12.2 Notice of Claim:

5-12-2.1 Claims for Extra Work: Where the Contractor deems that additional compensation or a time extension is due for work or materials not expressly provided for in the Work Order or which is by written directive expressly ordered by the Engineer pursuant to 4-3, the Contractor shall submit written notification to the Engineer of the intention to make a claim and submit the claim within the time limits outlined in the Agreement, Paragraphs 25 and 26. The notice and claim shall expressly notifying the Engineer that the Contractor intends to seek additional compensation and/or a time extension. If such written notification is not submitted and the Engineer is not afforded the opportunity for keeping strict account of actual labor, material, equipment, and time, the Contractor waives the claim for additional compensation or a time extension. Such notice by the Contractor, and the fact that the Engineer has kept account of the labor, materials and equipment, and time, shall not in any way be construed as establishing the validity of the claim or method for computing any compensation or time extension for such claim.

If the Contractor fails to submit a certificate of claim as described in 5-12.9, the City will so notify the Contractor in writing. The Contractor shall have five calendar days from receipt of the notice to resubmit the claim documentation, without change, with a certificate of claim as described in 5-12.9. Failure by the Contractor to comply with the five calendar day notice shall constitute a waiver of the claim.

5-12.2.2 Claims For Delay: Where the Contractor deems that additional compensation or a time extension is due on account of delay, differing site conditions, breach of Agreement, or any other cause other than for work or materials not expressly provided for in the Work Order (Extra Work) or which is by written directive of the Engineer expressly ordered by the Engineer pursuant to 4-3, the Contractor shall submit a written notice of intent to the Engineer of the intention to make a claim and submit the claim within the time limits outlined in the Agreement, Paragraphs 25 and 26 for a delay to a controlling work item. The notice and claim shall expressly notifying the Engineer that the Contractor intends to seek additional compensation

and/or a time extension and provide a reasonably complete description as to the cause and nature of the delay and the possible impacts to the Contractor's work by such delay.

If the Contractor fails to submit a certificate of claim as described in 5-12.9, the City will so notify the Contractor in writing. The Contractor shall have five calendar days from receipt of the notice to resubmit the claim documentation, without change, with a certificate of claim as described in 5-12.9. Failure by the Contractor to comply with the five calendar day notice shall constitute a waiver of the claim.

There shall be no Contractor entitlement to any monetary compensation or time extension for any delays or delay impacts, whatsoever, that are not to a controlling work item, and then as to any such delay to a controlling work item entitlement to any monetary compensation or time extension shall only be to the extent such is otherwise provided for expressly under 4-3 or 5-12, except that in the instance of delay to a non-controlling item of work the Contractor may be compensated for the direct costs of idle labor or equipment only, at the rates set forth in 4 3.2.1(1) and (3), and then only to the extent the Contractor could not reasonably mitigate such idleness.

If the Contractor provides the written notice of intent and the request for Contract Time extension in compliance with the aforementioned time and content requirements, the Contractor's claim for delay to a controlling work item will be evaluated as of the date of the elimination of the delay even if the Contractor's performance subsequently overcomes the delay. If the claim for delay has not been settled, the Contractor must also comply with 5-12.3 and 5-12.9 to preserve the claim.

5-12.3 Content of Claim: As a condition precedent to the Contractor being entitled to additional compensation or a time extension under the Contract Documents, for any claim, the Contractor shall submit a certified written claim to the City which will include for each individual claim, at a minimum, the following information:

1. A detailed factual statement of the claim providing all necessary dates, locations, and items of work affected and included in each claim;
2. The date or dates on which actions resulting in the claim occurred or conditions resulting in the claim became evident;
3. Identification of all pertinent documents and the substance of any material oral communications relating to such claim and the name of the persons making such material oral communications;
4. Identification of the provisions of the Contract Documents which support the claim and a statement of the reasons why such provisions support the claim, or alternatively, the provisions of the Contract Documents which allegedly have been breached and the actions constituting such breach;
5. A detailed compilation of the amount of additional compensation sought and a breakdown of the amount sought as follows:
    a. documented additional job site labor expenses;
    b. documented additional cost of materials and supplies;
    c. a list of additional equipment costs claimed, including each piece of equipment and the rental rate claimed for each;
    d. any other additional direct costs or damages and the documents in support thereof;
    e. any additional indirect costs or damages and all documentation in support thereof.
6. A detailed compilation of the specific dates and the exact number of calendar days sought for a time extension, the basis for entitlement to time for each day, all documentation of the delay, and a breakout of the number of days claimed for each identified event, circumstance or occurrence.

    Further, the Contractor shall be prohibited from amending either the bases of entitlement or the amount of any compensation or time stated for any and all issues claimed in the Contractor's written claim submitted hereunder, and any circuit court, arbitration, or other formal claims resolution proceeding shall be limited solely to the bases of entitlement and the amount of any compensation or time stated for any and all issues claimed in the Contractor's written claim submitted hereunder. This shall not, however, preclude a Contractor from withdrawing or reducing any of the bases of entitlement and the amount of any compensation or time stated for any and all issues claimed in the Contractor's written claim submitted hereunder at any time.

5-12.4 Action on Claim: The Engineer will respond in writing within 30 calendar days of receipt of a complete claim submitted by a Contractor in compliance with 5-12.3. Failure by the Engineer to respond to a claim in writing within 30 days after receipt of a complete claim submitted by the Contractor in compliance with 5-12.3 constitutes a denial of the claim by the Engineer. If the Engineer finds the claim or any part thereof to be valid, such partial or whole claim

will be allowed and paid for to the extent deemed valid and any time extension granted, if applicable, as provided in the Contract Documents. No circuit court or arbitration proceedings on any claim, or a part thereof, may be filed until after the terms of the Agreement, Paragraph 36 are met or after final acceptance per 5-11 of all work by the City or denial hereunder, whichever occurs last.

5-12.5 Pre-Settlement and Pre-Judgment Interest: Entitlement to any pre-settlement or pre-judgment interest on any claim amount determined to be valid subsequent to the City's receipt of a certified written claim in full compliance with 5-12.3, whether determined by a settlement or a final ruling in formal proceedings, the City shall pay to the Contractor simple interest calculated at the Prime Rate (as reported by the Wall Street Journal as the base rate on corporate loans posted by at least 75% of the Nations 30 largest banks) as of the 60th calendar day following the City's receipt of a certified written claim in full compliance with 5 12.3, such interest to accrue beginning 60 calendar days following the City's receipt of a certified written claim in full compliance with 5 12.3 and ending on the date of final settlement or formal ruling.

5-12.6 Compensation for Extra Work or Delay:

5-12.6.1 Compensation for Extra Work: Notwithstanding anything to the contrary contained in the Work Order, the Contractor shall not be entitled to any compensation beyond that provided for in 4-3.2.

5-12.6.2 Compensation for Delay: Notwithstanding anything to the contrary contained in the Work Order, the additional compensation set forth in 5-12.6.2.1 shall be the Contractor's sole monetary remedy for any delay other than to perform extra work caused by the City unless the delay shall have been caused by acts constituting willful or intentional interference by the City with the Contractor's performance of the work and then only where such acts continue after Contractor's written notice to the City of such interference. The parties anticipate that delays may be caused by or arise from any number of events during the term of the Agreement, including, but not limited to, work performed, work deleted, supplemental agreements, work orders, disruptions, differing site conditions, utility conflicts, design changes or defects, time extensions, extra work, right-of-way issues, permitting issues, actions of suppliers, subcontractors or other contractors, actions by third parties, suspensions of work by the Engineer shop drawing approval process delays, expansion of the physical limits of the project to make it functional, weather, weekends, holidays, special events, suspension of Contract Time, or other events, forces or factors sometimes experienced in construction work. Such delays or events and their potential impacts on the performance by the Contractor are specifically contemplated and acknowledged by the parties in entering into this Agreement, and shall not be deemed to constitute willful or intentional interference with the Contractor's performance of the work without clear and convincing proof that they were the result of a deliberate act, without reasonable and good-faith basis, and specifically intended to disrupt the Contractor's performance.

5-12.6.2.1 Compensation for Direct Costs, Indirect Costs, Expenses, and Profit thereon, of or from Delay: For any delay claim, the Contractor shall be entitled to monetary compensation for the actual idle labor (including supervisory personnel) and equipment, and indirect costs, expenses, and profit thereon, as provided for in 4-3.2.1(4) and solely for costs incurred beyond what reasonable mitigation thereof the Contractor could have undertaken.

5-12.7 Mandatory Claim Records: After submitting to the Engineer a notice of intent to file a claim for extra work or delay, the Contractor must keep daily records of all labor, material and equipment costs incurred for operations affected by the extra work or delay. These daily records must identify each operation affected by the extra work or delay and the specific locations where work is affected by the extra work or delay, as nearly as possible. The Engineer may also keep records of all labor, material and equipment used on the operations affected by the extra work or delay. The Contractor shall, once a notice of intent to claim has been timely filed, and not less than weekly thereafter as long as appropriate, submit the Contractor's daily records to the Engineer and be likewise entitled to receive the City's daily records. The daily records to be submitted hereunder shall be done at no cost to the recipient.

5-12.8 Claims For Acceleration: The City shall have no liability for any constructive acceleration of the work, nor shall the Contractor have any right to make any claim for constructive acceleration nor include the same as an element of any claim the Contractor may otherwise submit under this Agreement. If the Engineer gives express written direction for the Contractor to accelerate its efforts, such written direction will set forth the prices and other pertinent information and will be reduced to a written Contract Document promptly. No payment will be made on a Supplemental Agreement for acceleration prior to the City's approval of the documents.

5-12.9 Certificate of Claim: When submitting any claim, the Contractor shall certify under oath and in writing, in accordance with the formalities required by Florida law, that the claim is made in good faith, that the supportive data

are accurate and complete to the Contractor's best knowledge and belief, and that the amount of the claim accurately reflects what the Contractor in good faith believes to be the City's liability. Such certification must be made by an officer or director of the Contractor with the authority to bind the Contractor.

5-12.10 Non-Recoverable Items: The parties agree that for any claim the City will not have liability for the following items of damages or expense:

1. Loss of profit, incentives or bonuses;
2. Any claim for other than extra work or delay;
3. Consequential damages, including, but not limited to, loss of bonding capacity, loss of bidding opportunities, loss of credit standing, cost of financing, interest paid, loss of other work or insolvency;
4. Acceleration costs and expenses, except where the City has expressly and specifically directed the Contractor in writing "to accelerate at the City's expense"; nor
5. Attorney fees, claims preparation expenses and costs of litigation.

5-12.11 Exclusive Remedies: Notwithstanding any other provision of this Agreement, the parties agree that the City shall have no liability to the Contractor for expenses, costs, or items of damages other than those which are specifically identified as payable under 5-12. In the event any legal action for additional compensation, whether on account of delay, acceleration, breach of Agreement, or otherwise, the Contractor agrees that the City's liability will be limited to those items which are specifically identified as payable in 5-12.

5-12.12 Settlement Discussions: The content of any discussions or meetings held between the City and the Contractor to settle or resolve any claims submitted by the Contractor against the City shall be inadmissible in any legal, equitable, arbitration or administrative proceedings brought by the Contractor against the City for payment of such claim.

5-12.13 Personal Liability of Public Officials: In carrying out any of the provisions of the Agreement or in exercising any power or authority granted to the Engineer or any of their respective employees or agents, there shall be no liability on behalf of any employee, officer or official of the City for which such individual is responsible, either personally or as officials or representatives of the City. It is understood that in all such matters such individuals act solely as agents and representatives of the City.

5-12.14 Auditing of Claims: All claims filed against the City shall be subject to audit at any time following the filing of the claim, whether or not such claim is part of a suit pending in the Courts of this State. The audit may be performed, at the City's sole discretion, by employees of the City or by any independent auditor appointed by the City, or both. The audit may begin after ten days written notice to the Contractor, subcontractor, or supplier. The Contractor, subcontractor, or supplier shall make a good faith effort to cooperate with the auditors. As a condition precedent to recovery on any claim, the Contractor, subcontractor, or supplier must retain sufficient records, and provide full and reasonable access to such records, to allow the City's auditors to verify the claim and failure to retain sufficient records of the claim or failure to provide full and reasonable access to such records shall constitute a waiver of that portion of such claim that cannot be verified and shall bar recovery thereunder. Further, and in addition to such audit access, upon the Contractor submitting a written claim, the City shall have the right to request and receive, and the Contractor shall have the affirmative obligation to submit to the City any and all documents in the possession of the Contractor or its subcontractors, materialmen or suppliers as may be deemed relevant by the City in its review of the basis, validity or value of the Contractor's claim.

Without limiting the generality of the foregoing, the Contractor shall upon written request of the City make available to the City's auditors, or upon the City's written request, submit at the City's expense, any or all of the following documents:

1. Daily time sheets and foreman's daily reports and diaries;
2. Insurance, welfare and benefits records;
3. Payroll register;
4. Earnings records;
5. Payroll tax return;
6. Material invoices, purchase orders, and all material and supply acquisition contracts;
7. Material cost distribution worksheet;
8. Equipment records (list of company owned, rented or other equipment used);
9. Vendor rental agreements and subcontractor invoices;
10. Subcontractor payment certificates;
11. Canceled checks for the project, including, payroll and vendors;
12. Job cost report;

13. Job payroll ledger;
14. General ledger, general journal, (if used) and all subsidiary ledgers and journals together with all supporting documentation pertinent to entries made in these ledgers and journals;
15. Cash disbursements journal;
16. Financial statements for all years reflecting the operations on this project;
17. Income tax returns for all years reflecting the operations on this project;
18. All documents which reflect the Contractor's actual profit and overhead during the years this Agreement was being performed and for each of the five years prior to the commencement of this Agreement;
19. All documents related to the preparation of the Contractor's bid including the final calculations on which the bid was based;
20. All documents which relate to each and every claim together with all documents which support the amount of damages as to each claim;
21. Worksheets used to prepare the claim establishing the cost components for items of the claim including, but not limited to, labor, benefits and insurance, materials, equipment, subcontractors, and all documents that establish which time periods and individuals were involved, and the hours and rates for such individuals.

SECTION 6 CONTROL OF MATERIALS

Prior to ordering of materials, provide a material submittal for approval by the City for all materials & products that will be incorporated into the project. This shall include all materials included on the Approved Products List.

6-5 Products and Source of Supply.

6-5.1 Source of Supply–Convict Labor: Delete this subsection.

6-5.2 Source of Supply-Steel: Delete this subsection.

SECTION 7 LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC

7-11.5.3 Utility Adjustments

Delete this subsection.

7-13 Insurance

Delete this subsection.

7-14 Contractor's Responsibility for Work

This subsection is replaced with the following:

The Contractor will take charge and custody of the Work, and take every necessary precaution against damage to the Work, by the action of the elements or from any other cause whatsoever, until the City's final acceptance of the Work. The Contractor will rebuild, repair, restore, and make good, all damage to any portion of the Work occasioned by any of the above causes before final acceptance of the Agreement.

The City will have no obligation to pay any reimbursement for damage caused by the execution or non-execution of the Work by the Contractor or its sub-contractors, or damage the Contractor was negligent in preventing.

For damage to installed material caused by third parties, the Contractor shall pursue recovery from the third party. The City shall not reimburse the Contractor for repair costs due to damage, theft or vandalism to installed material caused by third parties. If the third party is unknown or the Contractor is unable to obtain recovery from the third party, the Contractor may pursue recovery through its Insurance Policy.

The City may, at its discretion, reimburse the Contractor for the repair of damage to the Work not caused by a third party and due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to Acts of God, of a public enemy, or of governmental authorities.

7-22 Available Funds

Delete this subsection.

7-23 Contractor's Motor Vehicle Registration

Delete this subsection.

7-24 Disadvantaged Business Enterprise Program

Delete this subsection

7-25 On-The-Job Training Requirements

Delete this subsection.

7-27 E-Verify

The Contractor 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 Contractor during the term of the Agreement and shall expressly require any subcontractors performing work or providing services pursuant to the Agreement 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 Agreement term.

SECTION 8 PROSECUTION AND PROGRESS

8-1 Subletting or Assigning of Contracts

Provisions concerning subcontracts are contained in the Agreement.

Do not, sell, transfer, assign or otherwise dispose of the Agreement or Contracts or any portion thereof, or of the right, title, or interest therein, without written consent of the City.

Include in the total Contract Price the cost of materials and manufactured component products, and their transportation to the project site. For the purpose of meeting this requirement the City will not consider off-site commercial production of materials and manufactured component products that the Contractor purchases, or their transportation to the project, as subcontracted work.

Execute all agreements to sublet work in writing and include all pertinent provisions and requirements of the Agreement and Work Orders. All other agreements must be in writing and reference all applicable Contract provisions. Upon request, furnish the City with a copy of the subcontract and agreement. The subletting of work does not relieve the Contractor or the surety of their respective liabilities under the Agreement.

The City recognizes a subcontractor only in the capacity of an employee or agent of the Contractor, and the Engineer may require the Contractor to remove the subcontractor as in the case of an employee.

8-3-3 Beginning Work: Delete this subsection.

8-6 Temporary Suspension of Contractor's Operations

8-6.1 Authority to Suspend Contractor's Operations: The Engineer has the authority to suspend the Contractor's operations, wholly or in part. The Engineer will order such suspension in writing, giving in detail the reasons for the suspension. Contract Time will be charged during all suspensions of Contractor's operations. The City may grant an extension of Contract Time in accordance with 8-7.3.2 when determined appropriate in the City's sole judgment.

No additional compensation or time extension will be paid or granted to the Contractor when the operations are suspended for the following reasons:

1. The Contractor fails to comply with the Contract Documents.
2. The Contractor fails to carry out orders given by the Engineer.
3. The Contractor causes conditions considered unfavorable for continuing the Work.

Immediately comply with any suspension order. Do not resume operations until authorized to do so by the Engineer in writing. Any operations performed by the Contractor, and otherwise constructed in conformance with the provisions of the Agreement, after the issuance of the suspension order and prior to the Engineer's authorization to resume operations will be at no cost to the City. Further, failure to immediately comply with any suspension order will also constitute an act of default by the Contractor and is deemed sufficient basis in and of itself for the City to declare the Contractor in default; the Contractor shall not have a time period to correct the conditions for which the suspension was ordered.

8-6.1.1 State of Emergency: The Engineer has the authority to suspend the Contractor's operations, wholly or in part, pursuant to a Governor's Declaration of a State of Emergency or a Local State of Emergency. The Engineer will order such suspension in writing, giving in detail the reasons for the suspension. Contract Time will be charged during all suspensions of Contractor's operations. The City, at its sole discretion, may grant an extension of Contract Time and reimburse the Contractor for specific costs associated with such suspension. Further, in such instances, the City's determination as to entitlement to either time or compensability will be final.

8-6.4 Suspension of Contractor's Operations - Holidays and Special Events
For working day contracts, a working day shall not be charged for such suspensions unless work is performed on these dates.

8-7 Computation of Contract Time

8-7.1 General: Perform the contracted work fully, entirely, and in accordance with the Contract Documents within the Contract Time as specified by the Work Order, or as may be extended in accordance with the provisions herein below.

8-7.2 Date of Beginning of Contract Time: Delete this subsection.

8-7.3 Adjusting Contract Time

8-7.3.1 Increased Work: The City may grant an extension of Contract Time when it increases the Contract Price due to overruns in original Contract items, adds new work items, or provides for unforeseen work. The City will base the consideration for granting an extension of Contract Time on the extent that the time normally required to complete the additional designated work delays the Contract completion schedule.

8-7.3.2 Contract Time Extension: The City may grant an extension of Contract Time when a controlling item of work is delayed by factors not reasonably anticipated or foreseeable at the time of bid. The City may allow such extension of time only for delays occurring during the Contract Time period or authorized extensions of the Contract Time period. When failure by the City to fulfill an obligation under the Contract results in delays to the controlling items of work, the City will consider such delays as a basis for granting a time extension to the Agreement.

Whenever the Engineer suspends the Contractor's operations, as provided in 8-6, for reasons other than the fault of the Contractor, the Engineer will grant a time extension for any delay to a controlling item of work due to such suspension. The City will not grant time extensions to the Contract for delays due to the fault or negligence of the Contractor.

The City does not include an allowance for delays caused by the effects of inclement weather or suspension of Contractor's operations as defined in 8-6.4, in establishing Contract Time. The Engineer will continually monitor the effects of weather and, when found justified, grant time extensions on either a monthly basis. The Contractor shall submit a request for additional time due to the effects of weather monthly in accordance with the Agreement, Paragraph 26.

The City will grant time extensions, on a day for day basis, for delays caused by the effects of rains or other inclement weather conditions, related adverse soil conditions or suspension of operations that prevent the Contractor from productively performing controlling items of work resulting in:

1. The Contractor being unable to work at least 50% of the normal work day on pre-determined controlling work items; or
2. The Contractor must make major repairs to work damaged by weather, provided that the damage is not attributable to the Contractor's failure to perform or neglect; and provided that the Contractor was unable to work at least 50% of the normal workday on pre-determined controlling work items.

No additional compensation will be made for delays caused by the effects of inclement weather.

The City will consider the delays in delivery of materials or component equipment that affect progress on a controlling item of work as a basis for granting a time extension if such delays are beyond the control of the Contractor or supplier. Such delays may include an area-wide shortage, an industry-wide strike, or a natural disaster that affects all feasible sources of supply. In such cases, the Contractor shall submit substantiating letters from a representative number of manufacturers of such materials or equipment clearly confirming that

the delays in delivery were the result of an area-wide shortage, an industry-wide strike, etc. No additional compensation will be made for delays caused by delivery of materials or component equipment.

The City will not consider requests for time extension due to delay in the delivery of custom manufactured equipment such as traffic signal equipment, highway lighting equipment, etc., unless the Contractor submits documentation that he placed the order for such equipment in a timely manner, the delay was caused by factors beyond the manufacturer's control, and the lack of such equipment caused a delay in progress on a controlling item of work. No additional compensation will be paid for delays caused by delivery of custom manufactured equipment.

The City will consider the affect of utility relocation and adjustment work on job progress as the basis for granting a time extension only if all the following criteria are met:

1. Delays are the result of either utility work that was not detailed in the Plans, or utility work that was detailed in the Plans but was not accomplished in reasonably close accordance with the schedule included in the Contract Documents.
2. Utility work actually affected progress toward completion of controlling work items.
3. The Contractor took all reasonable measures to minimize the effect of utility work on job progress, including cooperative scheduling of the Contractor's operations with the scheduled utility work at the preconstruction conference and providing adequate advance notification to utility companies as to the dates to coordinate their operations with the Contractor's operations to avoid delays.

As a condition precedent to an extension of Contract Time the Contractor must submit to the Engineer:

> Notice of intent to file a Contract Time Claim in accordance with the Agreement, Paragraph 26. If the Contractor fails to submit this required notice for an extension of Contract Time, the Contractor fully, completely, absolutely and irrevocably waives any entitlement to an extension of Contract Time for that delay. In the case of a continuing delay only a single preliminary request for an extension of Contract Time will be required. Each such preliminary request for an extension of Contract Time shall include as a minimum the commencement date of the delay, the cause of the delay, and the controlling item of work affected by the delay.
>
> Furthermore, the Contractor must submit to the Engineer a request for a Contract Time extension in in accordance with the Agreement, Paragraph 26 after the elimination of the delay to the controlling item of work identified in the aforementioned notice. Each request for a Contract Time extension shall include as a minimum all documentation that the Contractor wishes the City to consider related to the delay, and the exact number of days requested to be added to Contract Time. If the Contractor contends that the delay is compensable, then the Contractor shall also be required to submit with the request for a Contract Time extension a detailed cost analysis of the requested additional compensation. If the Contractor fails to submit this required request for a Contract Time extension, with or without a detailed cost analysis, depriving the Engineer of the timely opportunity to verify the delay and the costs of the delay, the Contractor waives any entitlement to an extension of Contract Time or additional compensation for the delay.

Upon timely receipt of the notice of claim for Contract Time from the Contractor, the Engineer will investigate the conditions, and if it is determined that a controlling item of work is being delayed for reasons beyond the control of the Contractor, the Engineer will take appropriate action to mitigate the delay and the costs of the delay. Upon timely receipt of the request for a Contract Time extension the Engineer will further investigate the conditions, and if it is determined that there was an increase in the time or the cost of performance of the controlling item of work beyond the control of the Contractor, then an adjustment of Contract Time will be made, and a monetary adjustment will be made, excluding loss of anticipated profits, and the Contract will be modified in writing accordingly.

The existence of an accepted schedule, including any required update(s) is a condition precedent to the Contractor having any right to the granting of an extension of Contract Time or any monetary compensation arising out of any delay. Contractor failure to have an accepted schedule, including any required update(s), for the period of potential impact, or in the event the currently accepted schedule and applicable updates do not accurately reflect the actual status of the project or fail to accurately show the true controlling or non-controlling work activities for the period of potential impact, will result in any entitlement determination as to time or money for such period of potential impact being limited solely to the City's analysis and

identification of the actual controlling or non-controlling work activities. Further, in such instances, the City determination as to entitlement as to either time or compensability will be final, unless the Contractor can prove by clear and convincing evidence to a Disputes Review Board that the City's determination was without any reasonable factual basis.

8-8 Failure of Contractor to Maintain Satisfactory Progress: Delete this subsection.

8-9 Default and Termination of Contract: Delete this subsection.

8-10 Liquidated Damages for Failure to Complete the Work.

8-10.1: Highway Code Requirements Pertaining to Liquidated Damages: Delete this subsection

8-10.2: Amount of Liquidated Damages: Applicable liquidated damages are the amounts established in the following schedule:

Original Contract Price	Daily Charge Per Calendar Day
$50,000 and under	$868
Over $50,000 but less than $250,000	$882
$250,000 but less than $500,000	$1,197
$500,000 but less than $2,500,000	$1,694
$2,500,000 but less than $5,000,000	$2,592
$5,000,000 but less than $10,000,000	$3,786
$10,000,000 but less than $15,000,000	$4,769
$15,000,000 but less than $20,000,000	$5,855
$20,000,000 and over	$9,214 plus 0.00005 of any amount over $20 million (Round to nearest whole dollar)

The City may approve adjustments to the liquated damages amounts in accordance with FDOT's Construction Project Administration Manual (CPAM) provide all contract work is complete.

8-10.3 Determination of Number of Days of Default: For all contracts, regardless of whether the Contract Time is stipulated in calendar days or working days, the Engineer will count default days in calendar days.

8-10.4 Conditions under which Liquidated Damages are Imposed: If the Contractor or, in case of its default, the surety fails to complete the work within the time stipulated in the Contract, or within such extra time that the City may have granted then the Contractor or, in case of its default, the surety shall pay to the City, not as a penalty, but as liquidated damages, the amount so as provided in 8-10.2.

8-10.5 Right of Collection: The City has the right to apply, as payment on such liquidated damages, any money the City owes the Contractor.

8-10.6 Allowing Contractor to Finish Work: The City does not waive its right to liquidated damages due under the Agreement by allowing the Contractor to continue and to finish the work, or any part of it, after the expiration of the Contract Time.

8-10.7 Completion of Work by the City: In the case of a default of the Agreement and the completion of the work by the City, the Contractor and its surety are liable for the liquidated damages under the Agreement, but the City will not charge liquidated damages for any delay in the final completion of the City's performance of the work due to any unreasonable action or delay on the part of the City.

8-11 Release of Contractor's Responsibility: Delete this subsection

8-12 Recovery of Damages Suffered by Third Parties: Delete this subsection

SECTION 9 MEASUREMENT AND PAYMENT

9-2 Scope of Payments.

9-2.1.1 Fuels: Delete this subsection.

9-2.1.2 Bituminous Material: Asphalt shall be adjusted in accordance with this section; delete the 365 calendar day and 5,000 ton minimum requirement. Other bituminous emulsified products (chip seal, micro-surfacing and scrub seal) shall be based upon the percentage of liquid asphalt content required per the specifications and approved mix design; if calculated by weight, utilize 8.58 pounds per gallon for liquid asphalt. Surface treatments denoted as "conventional" shall be adjusted in accordance with "unmodified binders" and all other treatments shall be adjusted in accordance with "modified binders". The unit rate of asphalt rejuvenation (with or without titanium dioxide) shall be adjusted by the percent change of the "modified binders" index. For all aforementioned products, this section shall only apply when the index varies by 5%, plus or minus, from the base month.

Section 9-5 is replaced as follows:

9-5 Partial Payments.

9-5.1 General: The Engineer will make partial payments on monthly estimates based on the amount of work that the Contractor completes during the month (including delivery of certain materials, as specified herein below). The Engineer will make approximate monthly payments, and the City will correct all partial estimates and payments in the subsequent estimates and in the final estimate and payment.

The City will base the amount of such payments on the total value of the work that the Contractor has performed to the date of the estimate, based on the quantities completed and the Contract prices, less payments previously made and less any retainage withheld.

9-5.2 Unsatisfactory Payment Record: In accordance with Sections 255.05 and 337.16 of the Florida Statutes, and the rules of the City and FDOT, the City and FDOT may disqualify the Contractor from bidding on future City or FDOT contracts if the Contractor's payment record in connection with contract work becomes unsatisfactory.

9-5.3 Unsatisfactory Payment Record:

9-5.3.1 Withholding Payment for Defective Work: If the City discovers any defective work or material prior to the final acceptance, or if the City has a reasonable doubt as to the integrity of any part of the completed work prior to final acceptance, then the City will not allow payment for such defective or questioned work until the Contractor has remedied the defect and removed any causes of doubt.

9-5.3.2 Withholding Payment for Failure to Comply: The City will withhold progress payments from the Contractor if he fails to comply with any or all of the following after beginning work:

1. Comply with and submit required paperwork relating to prevailing wage rate provisions, Equal Employment Opportunity, On-The-Job Training, and Affirmative Action;
2. Comply with the requirement to all necessary information, including actual payments to DBEs, all other subcontractors and major suppliers, through the Internet based Equal Opportunity Reporting System;
3. Comply with or make a good faith effort to ensure employment opportunity for minorities and females in accordance with the required contract provisions for Federal Aid Construction Contracts, and
4. Comply with or make a good faith effort to meet On-The-Job Training goals.

The City will withhold progress payments until the Contractor has satisfied the above conditions.

9-5.4 Release of Retainage After Acceptance: Delete this subsection.

9-5.5.3 Off Site Storage: Delete this subsection. No payments will be made for materials stored off-site.

9-5.6 Certification of Payments to Subcontractors: The term "subcontractor," as used herein, includes persons or firms furnishing materials or equipment incorporated into the work or stockpiled for which the City has made partial payment and firms working under equipment-rental agreements. The Contractor is required to pay all subcontractors for satisfactory performance of their Contracts before the City will make a further progress (partial) payment. The Contractor shall also return all retainage withheld to the subcontractors within 30 days after the subcontractor's work is satisfactorily complete, as determined by the City. Prior to receipt of any progress (partial) payment, the prime Contractor shall certify that all subcontractors having an interest in the Contract were paid for satisfactory performance of their Contracts and that the retainage is returned to subcontractors within 30 days after satisfactory completion of the subcontractor's work. Provide this certification in the form designated by the City.

Within 30 days of the Contractor's receipt of the final progress payment or any other payments thereafter, except the final payment, the Contractor shall pay all subcontractors and suppliers having an interest in the Agreement for all work completed and materials furnished. The City will honor an exception to the above when the Contractor demonstrates good cause for not making any required payment and furnishes written notification of any such good cause to both the City and the affected subcontractors or suppliers within said 30 day period.

The Contractor shall indemnify and provide defense for the City when called upon to do so for all claims or suits against the City, by third parties, pertaining to Contractor payment or performance issues arising out of the Agreement. It is expressly understood that the monetary limitation on the extent of the indemnification shall be the approved Contract Price, which shall be the original Contract Price as may be increased by subsequent Supplemental Agreements.

SECTION 102 MAINTENANCE OF TRAFFIC

102-1 Description

The Contractor shall be responsible for preparation of maintenance of traffic plan and shall adhere to the requirements of this section. Develop and submit a maintenance of traffic plan in accordance with the Work Order. Restoration of all roadway features disturbed by the maintenance of traffic plan shall be included in this section.

102-3 Specific Requirements

Lane Closure Restrictions

No lance closure will be permitted prior to 8:00 AM or after 5:00 PM.

Resident Notification

The contractor shall distribute by hand, a typed notice to all residences and businesses on the streets to be paved or surface treated that includes any special traffic conditions. The notice shall be delivered at least 48 hour prior to beginning any work. The notice shall have a phone number that residents may call to ask questions. The notice shall be of the door hanger type, which secures to the door handle of each dwelling. 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 this section.

102-5.1 Standards

Basic principles and minimum standards for all traffic maintenance activities will be in accordance with the current edition of the Index of Roadway and Traffic Design Standards and the Manual on Uniform Traffic Control Devices.

The section shall include maintenance of pedestrian and bicycle accessibility through the work zone in accordance with FDOT and ADA standards at all times. This section shall include an off duty law enforcement officer anytime a flagman is required in a signalized intersection. This section shall include relocation of mailboxes as required for maintenance of postal service, the temporary relocation of signs for visibility for emergency responders and final relocation. It is the Contractor's responsibility to replace any signs that are damaged during construction.

Access to all driveways shall be provided at all times unless a closure is coordinated with the property owner. Coordination for driveway access with the property owners shall be the responsibility of the contractor. This section shall include coordination and notification with property owner of any planned work. The contractor shall use door hangers for notification purposes. The contractor shall also coordinate removal of parked vehicles with the property owners. The contractor shall notify the City at least two working days prior to any planned closures.

102-13 Basis of Payment

All traffic control devices (including signs), warning devices and barriers shall be furnished and maintained by the Contractor. Cost of all devices necessary for conformance to the FDOT Standard Plans for Roadway and Bridge Construction and this section shall be considered incidental included in the pay items bid for this Agreement separately.

SECTION 104 PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION

This section shall include the installation, cost and maintenance of any materials to comply with any regulations as required by law for any work done under this Agreement.

104-10 Basis of Payment

The installation and maintenance of all items for conformance to this section shall be considered incidental and included in pay items bid for this Agreement.

SECTION 120 EXCAVATION AND EMBANKMENT (LAP) (REV 3-2-22) (FA 7-13-21) (7-22) MODIFIED

Delete this section and replace with the following:

120-1 Description.

120-1.1 General: Perform earthwork and related operations based on the type of work specified in the Work Order and the Earthwork Categories as defined below. Meet the applicable requirements for materials, equipment and construction as specified.

Earthwork and related operations consists of excavation for the construction of the roadway, excavation for structures and pipe, constructing backfill around structures and pipe, and constructing embankments as required for the roadway, ditches, and channel changes.

This section shall include spreading, redistributing and compacting of any on-site materials as required by the Work Order and the redistribution or removal onsite material required to attain the proposed grades as indicated on the Work Order.

120-1.2 Earthwork Categories: Performance of Earthwork Operations will fall into one of the following Earthwork Categories:

120-1.2.1 Earthwork Category 1: Includes the earthwork and related operations associated with the construction of sidewalks and bike paths along with any drainage structures associated with these facilities or any areas not covered by Category 2 or 3.

120-1.2.2 Earthwork Category 2: Includes the earthwork and related operations associated with the construction of turn lanes and other non-mainline traffic lanes, widening, roadway shoulders, concrete box culverts, retaining walls, and other drainage structures on the non-mainline pavement.

120-1.2.3 Earthwork Category 3: Includes the earthwork and related operations associated with the construction of new mainline pavement, along with concrete box culverts, retaining walls, and other drainage structures on the mainline pavement.

120-1.3 Unidentified Areas of Contamination: When encountering or exposing any abnormal condition indicating the presence of contaminated materials, cease operations immediately in the vicinity and notify the Engineer. The presence of tanks or barrels; discolored earth, metal, wood, ground water, etc.; visible fumes; abnormal odors; excessively hot earth; smoke; or other conditions that appear abnormal may indicate the presence of contaminated materials and must be treated with extreme caution.

Make every effort to minimize the spread of contamination into uncontaminated areas. Immediately provide for the health and safety of all workers at the job site and make provisions necessary for the health and safety of the public that may be exposed to any potentially hazardous conditions. Ensure provisions adhere to all applicable laws, rules or regulations covering potentially hazardous conditions and will be in a manner commensurate with the gravity of the conditions.

120-2 Classes of Excavation.

120-2.1 General: The Engineer may classify excavation specified under this Section for payment as any of the following: regular excavation, subsoil excavation, lateral ditch excavation, channel excavation and sediment removal excavation.

The definition of the existing surface is a combination of the following:

1. The original unpaved ground line;
2. The bottom of the existing pavement;
3. The bottom of existing features removed by clearing and grubbing;
4. The bottom of the existing base, if the base is to be removed.

The definition of finished graded surface includes the completed grades of side slopes, unpaved shoulders, and the bottom of base for flexible or rigid pavement.

120-2.2 Regular Excavation: Regular excavation includes roadway excavation and borrow excavation, as defined below for each.

120-2.2.1: Roadway excavation consists of the excavation and the utilization or disposal of all materials necessary for the construction of the roadway, ditches, channel changes, etc., except as may be specifically shown to be paid for separately and that portion of the lateral ditches within the limits of the roadway right-of-way as shown in the Plans.

120-2.2.2: Borrow excavation consists of the excavation and utilization of material from authorized borrow pits, including only material that is suitable for the construction of roadway embankments or of other embankments covered by the Work Order.

120-2.3 Subsoil Excavation: Subsoil excavation consists of the excavation and disposal of muck, clay, rock, or any other material that is unsuitable in its original position and that is excavated below the existing surface. For pond and ditches that identify the placement of a blanket material, the existing surface is the bottom of the blanket material. Subsoil excavation also consists of the excavation of all suitable material within the above limits as necessary to excavate the unsuitable material. Consider the limits of subsoil excavation indicated in the Plans as being particularly variable, in accordance with the field conditions encountered.

The quantity of material required to replace the excavated material and to raise the elevation of the roadway to the bottom of the template will be paid for under embankment or borrow (truck measure).

120-2.4 Lateral Ditch Excavation: Lateral ditch excavation consists of all excavation of inlet and outlet ditches to structures and roadway, changes in channels of streams, and ditches parallel to the roadway right-of-way. Dress lateral ditches to the grade and cross-section shown in the plans.

120-2.5 Channel Excavation: Channel excavation consists of the excavation and satisfactory disposal of all materials from the limits of the channel as shown in the plans.

120-2.6 Excavation for Structures and Pipe: Excavation for structures consists of the excavation for bridge foundations, box culverts, pipe culverts, storm sewers and all other pipe lines, retaining walls, headwalls for pipe culverts and drains, catch basins, drop inlets, manholes, and similar structures.

120-2.7 Sediment Removal Excavation: Sediment removal excavation consists of excavation and disposal of sediment, debris and trash collected in sediment basins or traps.

120-2.7.1: Excavation of bypass and other areas in sediment basins or trap is considered under the facility's sediment removal and disposal activity, not as channel excavation.

120-2.7.2: Disposal of sediment may vary. Dependent on the facility and the analytical results of the sediment, the material may be determined to be suitable for commercial uses or disposal of the material in a C&D landfill or a Class I landfill.

120-3 Preliminary Soils Investigation. When the Work Order contain the results of a soil survey, do not assume such data is a guarantee of the depth, extent, or character of material present.

120-4 Excavation Requirements.

120-4.1 Removal of Unsuitable Materials and Existing Roads:

120-4.1.1 Subsoil Excavation. Where rock, muck, clay, or other material within the limits of the roadway is unsuitable in its original position, excavate such material to the cross-sections shown in the plans or indicated by the Engineer, and backfill with suitable material. Shape backfill materials to the required cross-sections. Where the removal of plastic soils below the finished earthwork grade is required, meet a construction tolerance of plus or minus 0.2 foot in depth and plus or minus 6 inches (each side) in width.

120-4.1.2 Construction over Existing Old Road: Where a new roadway is to be constructed over an old one, completely remove the existing pavement for the entire limits of the width and depth. If the Plans provide that paving materials may be incorporated into the fill, distribute such material in a manner so as not to create voids. Recompact the old road meeting the requirements of 120-10.2.

120-4.2 Lateral Ditch Excavation: Excavate inlet and outlet ditches to structures and roadway, changes in channels of streams and ditches parallel to the roadway. Dress lateral ditches to the grade and cross-section shown in the plans.

120-4.3 Channel Excavation: Excavate and dispose of all materials from the limits of the channel as shown in the plans. Excavate for bridge foundations, box culverts, pipe culverts, storm sewers and all other pipe lines, retaining walls, headwalls for pipe culverts and drains, catch basins, drop inlets, manholes, and similar structures.

120-4.4 Excavation for Structures and Pipe.

120-4.4.1 Requirements for all Excavation: Perform all excavation to foundation materials, satisfactory to the Engineer, regardless of the elevation shown in the Plans. Remove rock, boulders or other hard lumpy or unyielding material to a depth of 12 inches below the bottom of pipes and box culverts elevations. Remove muck or other soft material to the depth indicated in the Plans or as directed by the Engineer.

120-4.4.2 Earth Excavation:

120-4.4.2.1 Foundation Material other than the Rock: When masonry is to rest on an excavated surface other than rock, take special care to avoid disturbing the bottom of the excavation, and do not remove the final foundation material to grade until just before placing the masonry. In case the foundation material is soft or mucky, the Engineer may require excavation to a greater depth and to backfill to grade with approved material.

120-4.4.2.2 Foundation Piles: Where foundation piles are used, complete the excavation of each pit before driving the piles. After the driving is completed, remove all loose and displaced material, leaving a smooth, solid, and level bed to receive the masonry.

120-4.4.2.3 Removal of Obstructions: Remove boulders, logs, or any unforeseen obstacles encountered in excavating.

120-4.4.3 Rock Excavation: Clean all rock and other hard foundation material, remove all loose material, and cut all rock to a firm surface. Either level, step vertically and horizontally, or serrate the rock, as may be directed by the Engineer. Clean out all seams, and fill them with concrete or mortar.

120-4.4.4 Pipe Trench Excavation: Excavate trenches for pipe culverts and storm sewers to the elevation of the bottom of the pipe and to a width sufficient to provide adequate working room. Remove soil not meeting the classification specified as suitable backfill material in 120-8.3.2.2 to a depth of 4 inches below the bottom of the pipe elevation. Remove rock, boulders or other hard lumpy or unyielding material to a depth of 12 inches below the bottom of the pipe elevation. Remove muck or other soft material to a depth necessary to establish a firm foundation. Where the soils permit, ensure that the trench sides are vertical up to at least the mid-point of the pipe.

For pipe lines placed above the natural ground line, place and compact the embankment, prior to excavation of the trench, to an elevation at least 2 feet above the top of the pipe and to a width equal to four pipe diameters, and then excavate the trench to the required grade.

For pipe trenches utilizing trench boxes, ensure that the trench box used is of sufficient width to permit thorough tamping of bedding material under and around the pipes as specified in 125-8.1.6.

Do not disturb the installed pipe and its embedment when moving trench boxes. Move the trench box carefully to avoid excavated wall displacement or damage. As the trench box is moved, fill any voids left by the trench box and continuously place and compact the backfill material adjacent to and all along the side of the trench box walls to fill any voids created by the trench box.

120-4.5 Sediment Removal Excavation: Remove and dispose of all materials as indicated in the Work Order or as specified by the Engineer.

120-5 Disposal of Surplus and Unsuitable Material.

120-5.1 Ownership of Excavated Materials: Take ownership of the materials and dispose of them outside the right-of-way.

120-5.2 RESERVED

120-5.3 Disposal of Paving Materials: Unless otherwise noted, take ownership of paving materials, such as paving brick, asphalt block, concrete slab, sidewalk, curb and gutter, etc., excavated in the removal of existing pavements, and dispose of them outside the right-of-way. If the materials are to remain the property of the Agency, place them in neat piles as directed. Existing limerock base that is removed may be incorporated in the stabilized portion of the subgrade. If the construction sequence will allow, incorporate all existing limerock base into the project as allowed by the Contract Documents.

120-5.4 Disposal Areas: Where the Contract Documents require disposal of excavated materials outside the right-of-way, and the disposal area is not indicated in the Contract Documents, furnish the disposal area without additional compensation.

Provide areas for disposal of removed paving materials out of sight of the project and at least 300 feet from the nearest roadway right-of-way line of any road. If the materials are buried, disregard the 300 foot limitation.

120-6 Materials for Embankment.

120-6.1 General Requirements for Embankment Materials: Construct embankments using suitable materials excavated from the roadway or delivered to the jobsite from authorized borrow pits. Embankment material shall not contain muck, stumps, roots, brush, vegetable matter, rubbish, reinforcement bar or other material that does not compact into a suitable and enduring roadbed.

Remove all waste material designated as undesirable. Use material in embankment construction in accordance with Plan detail or as the Engineer directs.

Construct the embankment using maximum particle sizes as follows:

In top 12 inches: 3 1/2 inches (in any dimension).

12 to 24 inches: 6 inches (in any dimension).

In the depth below 24 inches: not to exceed 12 inches (in any dimension) or the compacted thickness of the layer being placed, whichever is less.

Spread all material so that the larger particles are separated from each other to minimize voids between them during compaction. Compact around these rocks in accordance with 120-9.2.

When and where approved by the Engineer, larger rocks (not to exceed 18 inches in any dimension) may be placed outside the 1:2 slope and at least 4 feet or more below the bottom of the base. Compact around these rocks to a firmness equal to that of the supporting soil. Where constructing embankments adjacent to bridge end bents or abutments, do not place rock larger than 3 1/2 inches in diameter within 3 feet of the location of any end-bent piling. Materials specification for the pond embankment and backfill are specified in the construction plans.

120-6.2 Use of Materials Excavated From the Roadway and Appurtenances: Assume responsibility for determining the suitability of excavated material for use on the project in accordance with the applicable Contract Documents. Consider the sequence of work and maintenance of traffic phasing in the determination of the availability of this material.

120-6.3 Authorization for Use of Borrow: Use borrow only when sufficient quantities of suitable material are not available from roadway, pond and drainage excavation, to properly construct the embankment, subgrade, and shoulders, and to complete the backfilling of structures and pipe. Do not use borrow material until ordered by the Engineer, and then only use material from approved borrow pits.

120-6.3.1 Haul Routes for Borrow Pits: Provide and maintain, at no expense to the City, all necessary roads for hauling the borrow material. Where borrow area haul roads or trails are used by others, do not cause such roads or trails to deteriorate in condition.

Arrange for the use of all non-public haul routes crossing the property of any railroad. Incur any expense for the use of such haul routes. Establish haul routes which will direct construction vehicles away from developed areas when feasible, and keep noise from hauling operations to a minimum. Advise the Engineer in writing of all proposed haul routes.

120-6.3.2 Borrow Material for Shoulder Build-up: When so indicated in the plans, furnish borrow material with a specific minimum bearing value, for building up of existing shoulders. Blend materials as necessary to achieve this specified minimum bearing value prior to placing the materials on the shoulders. Take samples of this borrow material at the pit or blended stockpile. Include all costs of providing a material with the required bearing value in the Contract unit price for borrow material.

120-6.4 Materials Used at Pipes, Culverts, etc.: Construct embankments over and around pipes, culverts, and bridge foundations with selected materials.

120-7 Embankment Construction.

120-7.1 General: Construct embankments in sections of not less than 300 feet in length or for the full length of the embankment. Do not construct another LOT over an untested LOT without the Engineer's approval in writing. Special requirements for pond embankment are specified in the Work Order or Plans.

For construction of mainline pavement lanes, turn lanes, ramps, parking lots, concrete box culverts and retaining wall systems, a LOT is defined as a single lift of finished embankment not to exceed 500 feet.

For construction of shoulder-only areas, shared use paths, and sidewalks areas, a LOT is defined as a single lift of finished embankment not to exceed 2000 feet.

Isolated compaction operations will be considered as separate LOTs. For multiple phase construction, a LOT shall not extend beyond the limits of the phase.

120-7.2 Dry Fill Method:

120-7.2.1 General: Construct embankments to meet compaction requirements in 120-7 and in accordance with the acceptance program requirements in 120-10. Restrict the compacted thickness of the last embankment lift to 6 inches maximum.

Construct embankment in the dry whenever normal dewatering equipment and methods can accomplish the needed dewatering.

120-7.2.1.1 Maximum Compacted Lift Thickness Requirements. Construct embankment in successive layers with lifts up to the maximum listed in Table 120-1 based on the embankment material classification group.

Table 120-1

Group	AASHTO Soil Class	Maximum Lift Thickness	Thick Lift Control Test Section Requirements
1	A-3	12 inches	Not Required
	A-2-4 (No. 200 Sieve ≤ 15%)		
2	A-1	6 inches without Control Test Section	Maximum of 12 inches per 120-7.2.1.2
	A-2-4 (No. 200 Sieve > 15%)		
	A-2-5, A-2-6, A-2-7, A-4, A-5, A-6		
	A-7 (Liquid Limit <50)		

120-7.2.1.2 Thick Lift Requirements: For embankment materials classified as Group 2 in Table 120-1 above, the option to perform thick lift construction in successive layers of not more than 12 inches compacted thickness may be used after meeting the following requirements:

1. Demonstrate the possession and control of compacting equipment sufficient to achieve density required by 120-10.5 for the full depth of a thicker lift.
2. Construct a test section of the length of one full LOT of not less than 500 feet.
3. Preform five tests at random locations within the test section.
    a. All five tests must meet the density required by 120-10.5.
    b. Identify the test section with the compaction effort and soil classification in the project's records.
4. Obtain Engineer's approval for the compaction effort after completing a successful test section.

In case of a change in compaction effort or soil classification, failing density test, construct a new test section. The Contractor may elect to place material in 6 inches compacted thickness at any time. Construct all layers approximately parallel to the centerline profile of the road.

The Engineer reserves the right to terminate the Contractor's use of thick lift construction. Whenever the Engineer determines that the Contractor is not achieving satisfactory results, revert to the 6-inch compacted lifts.

120-7.2.1.3 Equipment and Methods: Provide normal dewatering equipment including, but not limited to, surface pumps, sump pumps and trenching/digging machinery. Provide normal dewatering methods including, but not limited to, constructing shallow surface drainage trenches/ditches, using sand blankets, sumps, and siphons.

When normal dewatering does not adequately remove the water, the Engineer may require the embankment material to be placed in the water or in low swampy ground in accordance with 120-9.2.4.

120-7.2.2 Placing in Unstable Areas: Where depositing the material in water, or in low swampy ground that will not support the weight of hauling equipment, construct the embankment by dumping successive loads in a uniformly distributed layer of a thickness not greater than necessary to support the hauling equipment while placing subsequent layers. Once sufficient material has been placed so that the hauling equipment can be supported, construct the remaining portion of the embankment in layers in accordance with the applicable provisions of 120-7.2.4 and 120-7.2.6.

120-7.2.3 Placing on Steep Slopes: When constructing an embankment on a hillside sloping more than 20 degrees from the horizontal, before starting the fill, deeply plow or cut into steps the surface of the original ground on which the embankment is to be placed.

120-7.2.4 Placing Outside Standard Minimum Slope: The standard minimum slope is defined as the plane described by a one (vertical) to two (horizontal) slope downward from the roadway shoulder point or the

gutter line, in accordance with Standard Plans, Index 120-001 and 120-002. Where material that is unsuitable for normal embankment construction is to be used in the embankment outside the standard minimum slope, place such material in layers of not more than 18 inches in thickness, measured loose. The Contractor may also place material, which is suitable for normal embankment, outside such standard minimum slope in 18-inch layers. Maintain a constant thickness for suitable material placed within and outside the standard minimum slope, unless placing in a separate operation.

120-7.3 Hydraulic Method:

120-7.3.1 Method of Placing: When the hydraulic method is used, as far as practicable, place all dredged material in its final position in the embankment by such method. Place and compact any dredged material that is reworked or moved and placed in its final position by any other method, as specified in 120-9.2. Baffles or any other form of construction may be used if the slopes of the embankments are not steeper than indicated in the Plans. Remove all timber used for temporary bulkheads or baffles from the embankment and fill and thoroughly compact all voids. When placing fill on submerged land, construct dikes prior to beginning of dredging, and maintain the dikes throughout the dredging operation.

120-7.3.2 Excess Material: Do not use excess material placed outside the prescribed slopes, below the normal high-water level, to raise the fill. Remove only the portion of this material required for dressing the slopes.

120-7.3.3 Protection of Openings in Embankment: Maintain openings in the embankments at the bridge sites. Remove any material which invades these openings or existing channels without additional compensation to provide the same depth of channel as existed before the construction of the embankment. Do not excavate or dredge any material within 200 feet of the toe of the proposed embankment.

120-8 Backfilling Around Structures and Pipe.

120-8.1 Requirements for Structures and Pipes:

120-8-1.1 General: Backfill around structures and pipe in the dry whenever normal dewatering equipment and methods can accomplish the needed dewatering. A LOT is defined as one lift of backfill material placement, not to exceed 500 feet in length or a single run of pipe connecting two successive structures, whichever is less. Backfill for structures and pipe compacted in one operation will be considered as one LOT within the cover zone. Backfill around structures compacted separately from the pipe will be considered as separate LOTs. Backfill on each side of the pipe for the first lift will be considered a separate LOT. Backfill on opposite sides of the pipe for the remaining lifts will be considered separate LOTs, unless the same compaction effort is applied. Same compaction effort is defined as the same type of equipment (make and model) making the same number of passes on both sides of the pipe. For multiple phases of backfill, a LOT shall not extend beyond the limits of the phase.

When placing backfill within a trench box, each lift of backfill is considered a LOT. Placement of backfill within a trench box limits will be considered a complete operation before trench box is moved for next backfill operation. When the trench box is moved for next backfill operation this will start new LOTs for each lift. Follow the density testing frequency in 125-9.3.1.

129-8.1.2 Equipment and Methods: Provide normal dewatering equipment including, but not limited to, surface pumps, sump pumps, wellpoints and header pipe and trenching/digging machinery. Provide normal dewatering methods including, but not limited to, constructing shallow surface drainage trenches/ditches, using sand blankets, perforated pipe drains, sumps and siphons.

120-8.1.3 Backfill Materials: Backfill to the original ground surface or subgrade surface of openings made for structures, with a sufficient allowance for settlement. The Engineer may require that the material used for this backfill be obtained from a source entirely apart from the structure.

Do not allow heavy construction equipment to cross over culvert or storm sewer pipes until placing and compacting backfill material to the finished earthwork grade or to an elevation at least 4 feet above the crown of the pipe.

120-8.1.4 Use of A-7 Material: In the backfilling of trenches, A-7 material may be used from a point 12 inches above the top of the pipe up to the elevation shown in the Standard Plans as the elevation for undercutting of A-7 material.

120-8.1.5 Time of Placing Backfill: Do not place backfill against any masonry or concrete abutment, wingwall, or culvert until the Engineer has given permission to do so, and in no case until the masonry or concrete has been in place seven days or until the specified 28-day compressive strength occurs.

120-8.1.6 Placement and Compaction: Place the material in horizontal layers not exceeding 6 inches compacted thickness in depth above water level, behind abutments, wingwalls and end bents or end rest piers, under the haunches of the pipes, around box culverts, and all structures including pipe culverts. When the backfill material is deposited in water, compact as specified in 125-8.2.5 and 125-8.3.4.

120-8.1.6.1 Thick Lift Requirements: The Contractor may elect to place material in thicker lifts of no more than 12 inches compacted thickness above the Soil Envelope if the embankment material is classified as Group 1 in the Table 120-2. If the embankment material is classified as Group 2 in Table 120-2 and the Contractor chooses to place material in thicker lifts of no more than 12 inches compacted thickness above the soil envelope, then the Contractor must demonstrate with a successful test section that density can be achieved. Thick lift around structures is only allowed above the soil envelope of the connecting pipe. Notify the Engineer in writing prior to beginning construction of a test section. Construct a test section of the length of one LOT. Perform five quality control tests at random locations within the test section. All five tests must meet the density required by 120 9.2. Identify the test section with the compaction effort and soil classification in the project's records. In case of a change in compaction effort or soil classification, construct a new test section. When a test fails the requirements of 120 9.2, construct a new test section. The Contractor may elect to place material in 6 inches compacted thickness at any time.

Table 120-1

Group	AASHTO Soil Class	Maximum Lift Thickness		Thick Lift Control Test Section Requirements	
		Within Cover Zone	Above Soil Envelope	Within Cover Zone	Above Soil Envelope
1	A-3 A-2-4 (No. 200 Sieve ≤ 15%)	6 inches	12 inches	N/A	Not Required
2	A-1 A-2-4 (No. 200 Sieve > 15%) A-2-5, A-2-6, A-2-7, A-4, A-5, A-6 A-7 (Liquid Limit <50)	6 inches without Control Test Section		N/A	Maximum of 12 inches per 120-7.2.1.2

120-8.2 Additional Requirements for Structures Other than Pipe:

120-8.2.1 Density: Where the backfill material is deposited in water, obtain a 12 inch layer of comparatively dry material, thoroughly compacted by tamping, before the Engineer verifies layer and density requirements. Meet the requirements of the density Acceptance Criteria.

120-8.2.2 Box Culverts: For box culverts over which pavement is to be constructed, compact around the structure to an elevation not less than 12 inches above the top of the structure, using rapid-striking mechanical tampers.

120-8.2.3 Other Limited Areas: Compact in other limited areas using mechanical tampers or approved hand tampers, until the cover over the structure is at least 12 inches thick. When hand tampers are used, deposit the materials in layers not more than 4 inches thick using hand tampers suitable for this purpose with a face area of not more than 100 in^2. Take special precautions to prevent any wedging action against the masonry, and step or terrace the slope bounding the excavation for abutments and wingwalls if required by the Engineer.

120-8.2.4 Culverts and Piers: Backfill around culverts and piers on both sides simultaneously to approximately the same elevation.

120-8.2.5 Compaction Under Wet Conditions: Where wet conditions do not permit the use of mechanical tampers, compact using hand tampers. Use only A-3 material for the hand tamped portions of the backfill. When the backfill has reached an elevation and condition such as to make the use of the mechanical tampers practical, perform mechanical tamping in such manner and to such extent as to transfer the compaction force into the sections previously tamped by hand.

120-8.3 Additional Requirements for Pipe 12 Inches Inside Diameter or Greater:

120-8.3.1 General: Trenches for pipe may have up to four zones that must be backfilled.

Lowest Zone: The lowest zone is backfilled for deep undercuts up to within 4 inches of the bottom of the pipe.

Bedding Zone: The zone above the Lowest Zone is the Bedding Zone. Usually it will be the backfill which is the 4 inches of soil below the bottom of the pipe. When rock or other hard material has been removed to place the pipe, the Bedding Zone will be the 12 inches of soil below the bottom of the pipe.

Cover Zone: The next zone is backfill that is placed after the pipe has been laid and will be called the Cover Zone. This zone extends to 12 inches above the top of the pipe. The Cover Zone and the Bedding Zone are considered the Soil Envelope for the pipe.

Top Zone: The Top Zone extends from 12 inches above the top of the pipe to the base or final grade.

120-8.3.2 Material:

120-8.3.2.1 Lowest Zone: Backfill areas undercut below the Bedding Zone of a pipe with coarse sand, or other suitable granular material, obtained from the grading operations on the project, or a commercial material if no suitable material is available.

120-8.3.2.2 Soil Envelope: In both the Bedding Zone and the Cover Zone of the pipe, backfill with materials classified as A-1, A-2, or A-3. Material classified as A-4 may be used if the pipe is concrete pipe.

120-8.3.2.3 Top Zone: Backfill the area of the trench above the soil envelope of the pipe with materials allowed on Design Standard, Index 120-001.

120-8.3.3 Compaction:

120-8.3.3.1 Lowest Zone: Compact the soil in the Lowest Zone to approximately match the density of the soil in which the trench was cut.

120-8.3.3.2 Bedding Zone: If the trench was not undercut below the bottom of the pipe, loosen the soil in the bottom of the trench immediately below the approximate middle third of the outside diameter of the pipe.

If the trench was undercut, place the bedding material and leave it in a loose condition below the middle third of the outside diameter of the pipe. Compact the outer portions to meet the density requirements of the Acceptance Criteria. Place the material in lifts no greater than 6 inches (compacted thickness).

120-8.3.3.3 Cover Zone: Place the material in 6 inches layers (compacted thickness), evenly deposited on both sides of the pipe, and compact with mechanical tampers suitable for this purpose. Hand tamp material below the pipe haunch that cannot be reached by mechanical tampers. Meet the requirements of the density Acceptance Criteria.

120-8.3.3.4 Top Zone: Place the material in layers not to exceed 12 inches in compacted thickness. Meet the requirements of the density Acceptance Criteria.

120-8.3.4 Backfill Under Wet Conditions: Where wet conditions are such that dewatering by normal pumping methods would not be effective, the procedure outlined below may be used when specifically authorized by the Engineer in writing.

Granular material may be used below the elevation at which mechanical tampers would be effective, but only material classified as A-3. Place and compact the material using timbers or hand tampers until the backfill reaches an elevation such that it's moisture content will permit the use of mechanical tampers. When the backfill has reached such elevation, use normally acceptable backfill material. Compact the material using mechanical tampers in such manner and to such extent as to transfer the compacting force into the material previously tamped by hand.

The Engineer may permit the use of coarse aggregate below the elevation at which mechanical tampers would be effective. Use coarse aggregate from approved sources for Aggregate Size Number 89, 8, 78, 7, 68, 6, or 57. Place the coarse aggregate such that it will be stable and firm. Fully wrap the aggregate with an appropriate geosynthetic filter fabric, as specified by the Engineer. Do not place coarse aggregate within 4 feet of the ends of the trench or ditch. Use normally accepted backfill material at the ends.

120-9 Compaction Requirements.

120-9.1 Moisture Content: Compact the materials at a moisture content such that the specified density can be attained. If necessary to attain the specified density, add water to the material, or lower the moisture content by manipulating the material or allowing it to dry, as is appropriate, to attain the specified density.

120-9.2 Compaction of Embankments:

120-9.2.1 Earthwork Category 1 and 2 Density Requirements: The Engineer will accept a minimum density of 95% of the maximum density as determined by AASHTO T-99 Method C for all earthwork items requiring densities.

120-9.2.2 Earthwork Category 3 Density Requirements: The Engineer will accept a minimum of 100% of the maximum density as determined by FM 1-T099 for all densities required under category 3. Except for embankments constructed by the hydraulic method as specified in 120-7.3, and for the material placed outside the standard minimum slope as specified in 120-7.2.4, and for other areas specifically excluded herein, compact each layer of the material used in the formation of embankments to the required density stated above. Uniformly compact each layer using equipment that will achieve the required density, and as compaction

operations progress, shape and manipulate each layer as necessary to ensure uniform density throughout the embankment.

120-9.2.3 Compaction Over Unstable Foundations: Where the embankment material is deposited in water or on low swampy ground, and in a layer thicker than 12 inches (as provided in 120-7.2.2), compact the top 6 inches (compacted thickness) of such layer to the density as specified in 120-10.5.

120-9.2.4 Compaction Where Plastic Material Has Been Removed: Where unsuitable material is removed and the remaining surface is of soil classifications A-4, A-5, A-6, or A-7 per AASHTO M145, as determined by the Engineer, compact the surface of the excavated area by rolling with a sheepsfoot roller exerting a compression of at least 250 psi on the tamper feet, for the full width of the roadbed (subgrade and shoulders). Perform rolling before beginning any backfill and continue until the roller feet do not penetrate the surface more than 1 inch. Do not perform such rolling where the remaining surface is below the normal water table and covered with water. Vary the procedure and equipment required for this operation at the discretion of the Engineer.

120-9.2.5 Compaction for Pipe, Culverts, etc.: Compact the backfill of trenches to the densities specified for embankment or subgrade, as applicable, and in accordance with the requirements of this section.

Thoroughly compact embankments over and around pipes, culverts, and bridges in a manner which will not place undue stress on the structures, and in accordance with the requirements of this section.

120-9.2.6 Compaction of Grassed Shoulder Areas: For the upper 6 inch layer of all shoulders which are to be grassed, since no specific density is required, compact only to the extent directed.

120-9.2.7 Compaction of Grassed Embankment Areas: For the outer layer of all embankments where plant growth will be established, do not compact. Leave this layer in a loose condition to a minimum depth of 6 inches for the subsequent seeding or planting operations.

120-9.3 Compaction of Subgrade: If the plans do not provide for stabilizing, compact the subgrade in both cuts and fills to the density specified in 120-10.5. For cut areas, determine Standard Proctor Maximum Density in accordance with FM 1-T099 at a frequency of one per mile or when there is a change in soil type, whichever occurs first. For undisturbed soils, do not apply density requirements where constructing paved shoulders is 5 feet or less in width.

Where trenches for widening strips are not of sufficient width to permit the use of standard compaction equipment, perform compaction using vibratory rollers, trench rollers, or other type compaction equipment approved by the Engineer.

Maintain the required density until the base or pavement is placed on the subgrade.

120-10 Acceptance Program.

120-10.1 Density over 105%: When a computed dry density results in a value greater than 105% of the applicable Proctor maximum dry density, the Engineer will perform a second density test within 5 feet. If the second density results in a value greater than 105%, investigate the compaction methods, examine the applicable Maximum Density and material description. If necessary, the Engineer will test an additional sample for acceptance in accordance with FM 1-T099.

120-10.2 Maximum Density Determination: The Engineer will determine the maximum density and optimum moisture content by sampling and testing the material in accordance with the specified test method listed in 120-10.3.

120-10.3 Density Testing Requirements: Compliance with the requirements of 120-10.5 will be determined in accordance FM 1-T 238. The in-place moisture content will be determined for each density in accordance with FM 5-507 (Determination of Moisture Content by Means of a Calcium Carbide Gas Pressure Moisture Tester), or ASTM D 4643 (Laboratory Determination of Moisture Content of Granular Soils by Use of a Microwave Oven).

120-10.4 Soil Classification and Organic Content: The Engineer will perform soil classification tests in accordance with AASHTO T88, T89, T90, and FM 1-T267. The Engineer will classify soils in accordance with AASHTO M-145 in order to determine compliance with embankment utilization requirements. The Engineer will verify the organic content test with the criteria specified in Standard Plans, Index 120-001.

120-10.5 Acceptance Criteria: The Engineer will accept a minimum density in accordance with 120-9.2 with the following exceptions:

1) embankment constructed by the hydraulic method as specified in 120-7.3;
2) material placed outside the standard minimum slope as specified in 120-7.2.4;
3) other areas specifically excluded herein.

120-10.6 Frequency: The Engineer will conduct sampling and testing at a minimum frequency listed in the table below.

Test Name	Frequency
Maximum Density	One per soil type
Density	1 per LOT (Alt Lift)
Soil Classification	One per Maximum Density

120-11 Maintenance and Protection of Work.

While construction is in progress, maintain adequate drainage for the roadbed at all times. Maintain a shoulder at least 3 feet wide adjacent to all pavement or base construction in order to provide support for the edges.

Maintain and protect all earthwork construction throughout the life of the Work Order, and take all reasonable precautions to prevent loss of material from the roadway due to the action of wind or water. Repair any slides, washouts, settlement, subsidence, or other mishap which may occur prior to final acceptance of the work. Maintain all channels excavated as a part of the Contract work against natural shoaling or other encroachments to the lines, grades, and cross-sections shown in the plans, until final acceptance of the project.

120-12 Construction.

120-12.1 Construction Tolerances: Shape the surface of the earthwork to conform to the lines, grades, and cross-sections shown in the plans. In final shaping of the surface of earthwork, maintain a tolerance of 0.3 foot above or below the plan cross-section with the following exceptions:

1. Shape the surface of shoulders to within 0.1 foot of the plan cross-section.
2. Shape the earthwork to match adjacent pavement, curb, sidewalk, structures, etc.
3. Shape the bottom of ditches so that the ditch impounds no water.
4. When the work does not include construction of base or pavement, shape the entire roadbed (shoulder point to shoulder point) to within 0.1 foot above or below the plan cross-section.

Ensure that the shoulder lines do not vary horizontally more than 0.3 foot from the true lines shown in the plans.

120-12.2 Operations Adjacent to Pavement: Carefully dress areas adjacent to pavement areas to avoid damage to such pavement. Complete grassing of shoulder areas prior to placing the final wearing course. Do not manipulate any embankment material on a pavement surface.

When shoulder dressing is underway adjacent to a pavement lane being used to maintain traffic, exercise extreme care to avoid interference with the safe movement of traffic.

120-13 Method of Measurement.

120-13.1 Excavation: Excavation will be paid for by volume, in cubic yards, of plan quantities or truck measure as identified in the Work Order. Measurement for payment will include the excavation of unsuitable material, lateral ditch excavation, channel excavation, and sediment removal excavation. Excavation for structures and pipe shall be incidental to the applicable structure or pipe. Payment will not be made for excavation or embankment beyond the limits shown in the plans or authorized by the Engineer.

120-13.2 Embankment: Embankment will be paid for by volume, in cubic yards, of plan quantities or truck measure as identified in the Work Order. Measurement by truck volume will be made on a loose volume basis, as measured in trucks or other hauling equipment at the point of dumping on the road. Payment will not be made for embankment beyond the limits shown in the plans or authorized by the Engineer

120-13 Basis of Payment.

120-13.1 General: Prices and payments for the work items included in this Section will be full compensation for all work described herein, including excavating, dredging, hauling, placing, and compacting; dressing the surface of the earthwork; and maintaining and protecting the complete earthwork.

120-13.2 Excavation: The total quantity of all excavation specified under this Section will be paid for at the Contract unit price for Excavation. No payment will be made for the excavation of any materials which are used for purposes other than those shown in the plans or designated by the Engineer. No payment will be made for materials excavated outside the lines and grades given by the Engineer, unless specifically authorized by the Engineer.

120-13.3 Embankment: The total quantity of embankment specified in this Section will be paid for at the Contract unit price for embankment. No payment will be made for materials which are used for purposes other than those shown in the plans or designated by the Engineer. No payment will be made for materials placed outside the lines and grades given by the Engineer.

SECTION 125 EXCAVATION FOR STRUCTURES AND PIPE

Density requirements shall be in accordance with the modification provided herein for Section 120. Exceptions provided for outside of roadway embankment still apply.

SECTION 160 STABILIZING

This section will primarily be utilized for base failure point repairs; costs for excavation and disposal of existing materials shall be included in this section.

LBR Stabilization: After stabilization and mixing, sample to a depth of 12" minimum for each change of subgrade material, or each section of subgrade with differing amounts of added stabilizing material. Minimum of 2 tests per mile of roadway. No less than 2 determinations shall be made per project. Verify width and depth of stabilization every 200 foot.

Density: No less than one density determination per 500 feet of subgrade or one per each section of roadway between intersections or between intersections and ends of cul-de-sac roads. Density shall be as specified on design plans, utilizing the proctor sample as modified for the LBR testing. Subgrade densities performed solely for placement of curb shall not satisfy requirements for subgrade density verification prior to base material placement. Curb densities shall be performed at the same frequency as subgrade densities. Portions of subgrade not worked as a part of overall compactive effort or sections replaced as rework or repair, shall be tested for density and bearing value prior to placement of base rock.

160-4.1.4.3.1 Under-tolerances in Bearing Value Requirements
Where plans call for a minimum LBR value, under tolerance criteria is not applicable.

SECTION 200 ROCK BASE

Limerock shall be constructed to specified thickness and shall be compacted to 98% AASHTO T-180. No less than one density determination per 500 linear feet of base. Minimum of one density test between intersections or intersection and end of cul-de-sac roads. A minimum of 2 densities per project shall be performed.

200-9 Calculations for Average Thickness of Base
Delete this section.

200-10 Method of Measurement
Delete this section. Quantity to be paid for will be the as measured square yards of rock base with the minimum thickness, shaped to the required line, grade, and profile.

SECTION 285 OPTIONAL BASE COURSE

This section will primarily be utilized for base failure point repairs; costs for excavation and disposal of existing materials shall be included in this section.

Limerock shall be constructed to specified thickness and shall be compacted to 98% AASHTO T-180. No less than one density determination per 500 linear feet of base. Minimum of one density test between intersections or intersection and end of cul-de-sac roads. A minimum of 2 densities per project shall be performed.

285-7 Calculations for Average Thickness of Base
Delete this section.

285-8 Method of Measurement

Delete this section. Quantity to be paid for will be the as measured square yards of rock base with the minimum thickness, shaped to the required line, grade, and profile OR as noted in the bid tab.

SECTION 300 PRIME AND TACK COATS FOR BASE COURSES

300-10 Basis of Payment

Cost of priming will be included in the unit cost per square yard of limerock, asphalt base or structural asphalt. Cost of tack coats shall be included in the unit cost of asphalt surface treatment or asphaltic concrete to be placed.

SECTION 305 BITUMINOUS CRACK AND JOINT SEALING

305-1 Description.

Clean and seal joints and cracks in asphalt concrete roadway surfaces in accordance with this section. All cracks within the specified area that are one quarter (1/4) inch or greater, or as directed by the City, shall be properly prepared and sealed.

305-2 Materials.

305-2.1 Crack Seal: Use Crafco PolyFlex Type 3 or equivalent approved by the Engineer. Product shall be asphalt based designed to fill cracks and joints in asphalt and shall have the ability to seal out water. Submit material specifications with the manufacturer's suggested installation procedures to the Engineer for approval prior to use. Deliver each lot of sealant in containers with the manufacturer's name and lot number plainly marked.

305-2.2 Blotting Material: If required, the blotting material shall be an aggregate such as cement dust, silica sand or Crafco Detack or equivalent. Cover aggregate shall be approved by the Engineer prior to use.

305-2.3 Field Performance: There shall be no pulling or tracking of the in-place crack sealant material by vehicle traffic after 20 minutes of material application. Failure to meet this requirement is cause for rejection of the material regardless of specified laboratory test results.

305-3 Equipment.

305-3.1 Crack Sealant Application Equipment: Equipment used to install the sealant into the cracks shall be as specified by the manufacturer and shall have the ability to fill cracks with two wands at the same time and maintain the proper temperature of the sealant throughout the sealing process. The heating unit shall be a jacketed double boiler melter and shall be equipped with an agitation system. The applicator hose's shall have a recirculation system or be equipped with a temperature controlled heating system. Pouring pots or gravity-fed sealant applicators shall not be used for sealing cracks and joints.

305-3.2 Compressor: The compressor shall be 75 CFM capacity, or more, to ensure an adequate supply of air to effectively clean the joints. Any pneumatic tool lubricator must be bypassed and a filter installed on the discharge valve to keep water and oil out of the lines.

305-3.3 Hot Compressed Air Equipment: A hot compressed air lance shall be used to clean, dry and pre-heat cracks prior to applying sealant. The air lance shall consist of a compressor propane system providing a high temperature, high velocity blast of air.

305-3.4 Crack Cleaning Equipment: Cleaning of excess debris shall be done by means of power sweepers, hand brooms, or air brooms.

305-4 Construction.

305-4.1 Weather: No materials shall be placed unless the ambient and pavement temperature are 40 degrees and rising in the shade. There shall be no fog and limited chance of rain.

305-4.2 Surface Preparation: Prior to starting the application process, remove any existing dirt, vegetation or debris from the asphalt surface.

305-4.3 Crack Cleaning: All cracks and joints shall be cleaned free of all deleterious materials, including any dust, old sealant, and organic material. When vegetation exists, it shall be removed by propane torch or treated with an

herbicide that sterilizes the soil; the method of removal shall be approved by the Engineer. If herbicide is approved, it shall be applied in accordance with the manufactures specifications. The herbicide applicator shall have any required licenses and log all treatments in accordance with Federal, State or Local laws and regulations. All cracks shall be completely dry prior to applying any crack sealing materials. The contractor may use a hot compressed air lance method for cleaning and drying cracks with approval by the Engineer; care shall be take not to overheat the asphalt surface. All cracks shall be blown clean by high pressure air. All materials and debris removed from cracks shall be removed from the pavement surface immediately. Any cracks not sealed the same day they are prepared shall be blown clean with compressed air prior to continuing sealing operations.

305-4.4 Sealant Heating: The temperature of the sealant shall be headed and maintained using the manufacture's recommended procedures. The sealant compound shall be melted slowly with constant agitation until it is lump-free and free flowing. Care shall be taken to ensure the sealant is not heated above the manufacture's recommended maximum temperature or for longer than the recommended application life. The Engineer shall have the right to reject the product if it is determined this has occurred.

305-4.5 Sealant Application: The sealant shall be applied in the crack or joint reservoir uniformly from the bottom to the top and shall be filled without formation of entrapped air or voids. The sealant shall be installed so that it is recessed approximately one eight (1/8) inch below the pavement surface to prevent tracking. Sealant shall be applied to slightly overfill the reservoir and then struck off using a "V" shaped squeegee. The remaining squeegee material shall be flush with the pavement surface. In no case shall the width of excess material on the pavement surface exceed (4) inches. At no time shall the sealant be in excess of one sixtieth (1/16) inch above the adjacent surface and shall extend no more than one and a half (1.5) inches from the crack edges. Each wand shall have removable heads so that variable width discs from two (2) to four (4) inches that shall be installed at the Engineer's request.

305-4.6 Blotting Application: Prevent tracking with an application approved blotting material, unless it can be demonstrated that the crack and joint sealer will not track without the application.

305-5 Acceptance

The sealant shall be removed, and resealed, at no charge to the City, if any of the of the following occur: 1) the sealant contain imbedded foreign material other than blotting materials, 2) the sealant contain entrapped air bubbles, 3) the sealant has de-bonded or pulled away from the crack; 4) the sealant has been excessively heated, or 5) the materials or method of construction did not conform to this specification.

305-6 Method of Measurement.

The quantity of crack sealing to be paid for amount of gallons applied and accepted. A log sheet shall be maintained during the crack seal operations which shall include the following: 1) Date, time and amount added to melter; the lot number from each box shall be recorded; 2) Road name, date, time application process starts, amount installed and time application process ends; and 3) Weather conditions. Submit log with each application for payment.

305-7 Basis of Payment.

Price and payment will be full compensation for furnishing all materials and performing the work specified in this section.

SECTION 330 HOT BITUMINOUS MIXTURES, GENERAL CONSTRUCTION REQUIREMENTS

The Contractor shall furnish asphaltic concrete from a FDOT certified plant.

330-5.6 Material Transfer Vehicle: Provide remixing material transfer equipment that allows for continuous paving and remixing of asphalt materials (example: Roadtec MTV1000 or Terex CR662RM).

330-6.1.8 Uniform Mat Temperature: A material transfer vehicle shall be utilized in the paving operation for all mainline final asphalt surfaces.

SECTION 334 SUPERPAVE ASPHALT CONCRETE (LAP) (REV 3-2-22) (FA 7-2-21) (7-22) MODIFIED

Delete this section and replace with the following:

334-1 Description.

334-1.1 General

Construct Asphalt Concrete pavement based on the type of work specified in the Work Order and the Asphalt Work Categories as defined below. Meet the applicable requirements for plants, equipment, and construction requirements as defined below. Use a asphalt concrete mix that meets the requirements of this specification.

334-1.2 Asphalt Work Mix Categories
Construction of Hot Mix Asphalt Pavement will fall into one of the following work categories:

334-1.2.1 Asphalt Work Category 1: Includes the construction of bike paths and miscellaneous asphalt.

334-1.2.2 Asphalt Work Category 2: Includes the construction of new turn lanes, paved shoulders and other non-mainline pavement locations.

334-1.2.3 Asphalt Work Category 3: Includes the construction of new mainline pavement lanes, milling and resurfacing.

334-1.3 Mix Types
Use the appropriate asphalt concrete mix as shown in Table 334-1.

Table 334-1
Asphalt Concrete Mix Types

Asphalt Work Category	Mix Types	Traffic Level	ESALs (millions)
1	Type SP-9.5	A	<0.3
2	Structural Mixes: Types SP-9.5 or SP-12.5 Friction Mixes: Types FC-9.5 or FC-12.5	B	0.3 to <3
3	Structural Mixes: Types SP-9.5 or SP-12.5 Friction Mixes: Types FC-9.5 or FC-12.5	C	≥3

For a Traffic Level A mixture, meet the mix design criteria for Traffic Level B mixture and for a Traffic Level D mixture meet the mix design criteria for a Traffic Level E mixture. At no cost to the City the contractor may substitute one travel level up.

334-1.4 Gradation Classification
Asphalt concrete mixes are classified as fine and are defined in Stand Specification 334-3.2.2.

The equivalent AASHTO nominal maximum aggregate size Superpave mixes are as follows:

Type SP-9.5, FC-9.5 ..... 9.5 mm
Type SP-12.5, FC-12.5 ..... 12.5 mm

334-1.5 Thickness
The total pavement thickness of the asphalt concrete pavement will be based on a specified spread rate or plan thickness as shown in the Contract Documents. Before paving, propose a spread rate or thickness for each individual layer meeting the requirements of this specification, which when combined with other layers (as applicable) will equal the plan spread rate or thickness. For construction purposes, the plan thickness and individual layer thickness will be converted to spread rate using the following equation:

$$\text{Spread rate (lbs/yd}^2\text{)} = t \times G_{mm} \times 43.3$$

where: t = Thickness (in.) (Plan thickness or individual layer thickness)
G_{mm} = Maximum specific gravity from the mix design

For target purposes only, spread rate calculations shall be rounded to the nearest whole number.

334-1.5.1 Layer Thicknesses: Unless otherwise called for in the Contract Documents, the allowable layer thicknesses for asphalt concrete mixtures are as follows:

Type SP-9.5, FC-9.5 ..... 1 to 1-1/2 inches
Type SP-12.5 ..... 1 ½ to 3 inches
Type FC-12.5 ..... 1-1/2 inches to 2-1/2 inches

334-1.5.2 Additional Requirements: The following requirements also apply to ASPHALT CONCRETE mixtures:

1. When construction includes the paving of adjacent shoulders (less than or equal to 5 feet wide), the layer thickness for the upper pavement layer and shoulder shall be the same and paved in a single pass, unless otherwise called for in the Contract Documents.
2. For overbuild layers, use the minimum and maximum layer thicknesses as specified above unless called for differently in the Contract Documents. On variable thickness overbuild layers, the minimum and maximum allowable thicknesses will be as specified below unless called for differently in the Contract Documents.

Type SP-9.5 .....3/8 to 2 inches
Type SP-12.5 .....1/2 to 3 inches
Type SP-19.0 .....1-1/2 inches to 4 inches

3. Variable thickness overbuild layers constructed using a Type SP-9.5 or SP-12.5 mixtures may be tapered to zero thickness provided the contract documents require a minimum of 1-1/2 inches of dense-graded mix placed over the variable thickness overbuild layer.

334-1.6 Weight of Mixture
The weight of the mixture shall be determined as provided in 320-2.2 of the Florida Department of Transportation (FDOT) specifications.

334-2 Materials.

334-2.1 Superpave Asphalt Binder
Unless specified elsewhere in the Contract Documents, use an asphalt binder grade as determined from Table 334-2. If the Contract calls for an alternative binder, meet the requirements of FDOT Specification 916.

334-2.2 Aggregate
Use aggregate capable of producing a quality pavement. Size, grade and combine the aggregate fractions to meet the grading and physical properties of the mix design. Aggregates from various sources may be combined.

For Type FC mixes, use an aggregate blend that consists of approved friction course aggregates that consists of crushed granite, crushed granitic gneiss, crushed limestone, crushed shell rock, or a combination of the above. As an exception, mixes that contain a minimum of 60% of approved friction course aggregates of crushed granite and/or crushed gneiss may either contain: up to 40% fine aggregate from other sources of aggregate not approved for friction courses or a combination of up to 20% RAP and the remaining fine aggregate from other sources of aggregate not approved for friction courses. Mixtures utilizing High Polymer (HP) binder are not allowed to contain RAP.
A list of aggregates approved for use in friction courses may be available on the FDOT's State Materials Office website. The URL for obtaining this information, if available, is: https://mac.fdot.gov/.

334-2.3 Reclaimed Asphalt Pavement (RAP) Material

334-2.3.1 General requirements: RAP may be used as a component of the asphalt mixture subject to the following requirements:

1. Limit the amount of RAP material used in the mix to a maximum of 50% by weight of total aggregate.
2. Assume full responsibility for the design, production and construction of asphalt mixes which incorporate RAP as a component material.
3. Provide stockpiled RAP material that is reasonably consistent in characteristics and contains no aggregate particles which are soft or conglomerates of fines.
4. Provide RAP material having a minimum average asphalt content of 4.0% by weight of total mix. As an exception, when using fractionated RAP, the minimum average asphalt binder content for the coarse portion of the RAP shall be 2.5% by weight of the coarse portion of the RAP. The coarse portion of the RAP shall be the portion of the RAP retained on the No. 4 sieve. The Engineer may sample the stockpile to verify that this requirement is met.
5. When using RAP as a component material, prevent any oversized RAP from being incorporated into the completed mixture by the use of a grizzly or grid over the RAP bin; in-line roller or impact crusher; screen; or other suitable means. If oversized RAP material appears in the completed recycled mix, take the appropriate corrective action immediately. If the appropriate corrective actions are not immediately taken, stop plant operations.

334-2.3.2 Material Characterization: Assume responsibility for establishing the asphalt binder content, gradation, viscosity and bulk specific gravity (G_{sb}) of the RAP material based on a representative sampling of the material.

334-2.3.3 Asphalt Binder for Mixes with RAP: Select the appropriate asphalt binder grade based on Table 334-2.

Table 334-2 Asphalt Binder Grade for Mixes Containing RAP	
Percent RAP	Asphalt Binder Grade
0 - 15	PG 67-22 and above
16- 30	PG 58-22
≥ 30	PG 52-28

334-3 Composition of Mixture.

334-3.1 General

Compose the asphalt mixture using a combination of aggregates, mineral filler, if required, and asphalt binder material. Size, grade and combine the aggregate fractions to meet the grading and physical properties of the mix design. Aggregates from various sources may be combined.

334-3.2 Mix Design

334-3.2.1 General: The Contractor shall use a valid, currently approved FDOT Mix Design. Copies of approved mix design shall be provided by the Contractor and shall be approved by the City prior to use. Design the asphalt mixture in accordance with AASHTO R 35, except as noted herein. Submit the proposed mix design with supporting test data indicating compliance with all mix design criteria to the Engineer. Prior to the production of any asphalt mixture, obtain the Engineer's conditional approval of the mix design. If required by the Engineer, send representative samples of all component materials, including asphalt binder to a laboratory designated by the Engineer for verification.

The Engineer will consider any marked variations from original test data for a mix design or any evidence of inadequate field performance of a mix design as sufficient evidence that the properties of the mix design have changed, and at its discretion, the Engineer may no longer allow the use of the mix design.

334-3.2.2 Mixture Gradation Requirements: Combine the coarse and fine aggregate in proportions that will produce an asphalt mixture meeting all of the requirements defined in this specification and conform to the gradation requirements at design as defined in AASHTO M 323. Aggregates from various sources may be combined.

334-3.2.2.1 Mixture Gradation Classification: Plot the combined mixture gradation on an FHWA 0.45 Power Gradation Chart. Include the Control Points from AASHTO M, as well as the Primary Control Sieve (PCS) Control Point from AASHTO M. Fine mixes are defined as having a gradation that passes above the primary control sieve control point and above the maximum density line for all sieve sizes smaller than the primary control sieve and larger than the No. 30 sieve. Use only fine mixes.

334-3.2.3 Gyratory Compaction: Compact the design mixture in accordance with AASHTO T 312, with the following exception: use the number of gyrations at Ndesign as defined in Standard Specification Table 334-3. Measure the inside diameter of gyratory molds in accordance with AASHTO T 312.

Table 334-3 Gyratory Compaction Requirements	
Traffic Level	N_{design} Number of Gyrations
B	65
C	75
E	100

334-3.2.4 Design Criteria: Meet the requirements for nominal maximum aggregate size as defined in AASHTO M, as well as for relative density, VMA, VFA, and dust-to-binder ratio as specified in AASHTO M323, Table 6. $N_{initial}$ and $N_{maximum}$ requirements are not applicable.

334-3.2.5 Moisture Susceptibility: For all traffic levels, use a liquid anti-strip agent listed on the APL at the specified dosage rate. Hydrated lime may be used instead of the liquid anti-strip agent. Provide a mixture having a retained tensile strength ratio of at least 0.80 and a minimum tensile strength (unconditioned) of 100 psi in accordance with FM 1-T 283.

334-3.2.6 Additional Information: In addition to the requirements listed above, provide the following information on each mix design:

1. The design traffic level and the design number of gyrations (N_{design}).
2. The source and description of the materials to be used.

3. The FDOT source number and the FDOT product code of the aggregate components furnished from an FDOT approved source (if required).
4. The gradation and proportions of the raw materials as intended to be combined in the paving mixture. The gradation of the component materials shall be representative of the material at the time of use. Compensate for any change in aggregate gradation caused by handling and processing as necessary.
5. A single percentage of the combined mineral aggregate passing each specified sieve. Degradation of the aggregate due to processing (particularly material passing the No. 200 sieve) should be accounted for and identified.
6. The bulk specific gravity (G_{sb}) value for each individual aggregate and RAP component.
7. A single percentage of asphalt binder by weight of total mix intended to be incorporated in the completed mixture, shown to the nearest 0.1%.
8. A target temperature for the mixture at the plant (mixing temperature) and a target temperature for the mixture at the roadway (compaction temperature). Do not exceed a target temperature of 340°F for High Polymer asphalt binders, 330°F for PG 76-22 asphalt binders, and 315°F for unmodified asphalt binders.
9. Provide the physical properties at the optimum asphalt content, which must conform to all specified requirements.
10. The name of the Construction Training Qualification Program (CTQP) mix designer.
11. The ignition oven and maximum specific gravity (Gmm) calibration factors.
12. The warm mix technology, if used.

334-4 Producer Process Control (PC)

Assume full responsibility for controlling all operations and processes such that the requirements of these Specifications are met at all times. Perform any tests necessary at the plant and roadway to control the process.

334-5 General Construction Requirements

334-5.1 Weather Limitations

Do not transport asphalt mix from the plant to the roadway unless all weather conditions are suitable for the paving operations.

334-5.2 Limitations of Paving Operations

334-5.2.1 General: Spread the mixture only when the surface upon which it is to be placed has been previously prepared, is intact, firm, dry, clean, and the tack, with acceptable spread rate, is properly broken or cured. Do not place friction course until the adjacent shoulder area has been dressed and grassed.

334-5.2.2 Air Temperature: Place the mixture only when the air temperature in the shade and away from artificial heat meets the requirements of Table 334-4. The minimum ambient temperature requirement may be reduced by 5ºF when using warm mix technology, if mutually agreed to by both the Engineer and the Contractor.

Table 334-4
Ambient Air Temperature Requirements for Paving

Layer Thickness or Asphalt Binder Type	Minimum Temperature (°F)
≤1 inch	50
Any mixture > 1 inch containing a PG asphalt binder with a high temperature designation ≥ 76°C	45
Any mixture > 1 inch containing a PG asphalt binder with a high temperature designation < 76°C	40

334-5.3 Mix Temperature

Heat and combine the ingredients of the mix in such a manner as to produce a mixture with a temperature at the plant and at the roadway, within a range of plus or minus 30ºF from the target temperature as shown on the mix design. Reject all loads outside of this range. Reject any load or portion of a load of asphalt mix at the plant or at the roadway with a temperature outside of its respective master range shown in Table334-5. Notify the Engineer of the rejection immediately.

Table 334-5
Mix Temperature Master Range Tolerance

Location	Acceptable Temperature Tolerance
Plant	Mixing Temperature ±30 F
Roadway (mix in truck)	Compaction Temperature ±30°F

334-5.4 Transportation of the Mixture

Transport the mix in trucks of tight construction, which prevents the loss of material and the excessive loss of heat and previously cleaned of all foreign material. After cleaning, thinly coat the inside surface of the truck bodies with soapy water or an asphalt release agent as needed to prevent the mixture from adhering to the beds. Do not allow excess liquid to pond in the truck body. Do not use a release agent that will contaminate, degrade, or alter the characteristics of the asphalt mix or is hazardous or detrimental to the environment. Petroleum derivatives (such as diesel fuel), solvents, and any product that dissolves asphalt are prohibited. Provide each truck with a tarpaulin or other waterproof cover mounted in such a manner that it can cover the entire load when required. When in place, overlap the waterproof cover on all sides so it can be tied down. Cover each load during cool and cloudy weather and at any time it appears rain is likely during transit with a tarpaulin or waterproof cover. Cover and tie down all loads of friction course mixtures.

334-5.5 Preparation of Surfaces Prior to Paving

334-5.5.1 Cleaning: Clean the surface of all loose and deleterious material by the use of power brooms or blowers, supplemented by hand brooming where necessary.

334-5.5.2 Patching and Leveling Courses: As shown in the plans, bring the existing surface to proper grade and cross-section by the application of patching or leveling courses.

334-5.5.3 Application over Surface Treatment: Where an asphalt mix is to be placed over a surface treatment, sweep and dispose of all loose material from the paving area.

334-5.5.4 Tack Coat: Use a rate of application as defined in Table 334-6. Control the rate of application to be within plus or minus 0.01 gal. per square yard of the target application rate. The target application rate may be adjusted by the Engineer to meet specific field conditions. Determine the rate of application as needed to control the operation. When using PG 52-28, multiply the target rate of application by 0.6.

Table 334-6
Tack Coat Application Rates

Asphalt Mixture Type	Underlying Pavement Surface	Target Tack Rate (gal/yd^2)
Base Course, Structural Course, Dense Graded Friction Course, Open Grade Friction Course	Newly Constructed Asphalt Layers	0.06
	Milled Surface, Oxidized and Cracked Asphalt Pavement, Concrete Pavement	0.09
Note: Target tack application rates greater than those specified may be used upon approval of the Engineer.		

When using a meter to control the tack or prime application rate, manually measure the volume in the tank at the beginning and end of the application area for a specific target application rate. Perform this operation at a minimum frequency of once per production shift. Resolve any differences between the manually measured method and the meter to ensure the target application rate is met in accordance with this Section. Adjust the application rate if the manually measured application rate is greater than plus or minus 0.01 gallons per square yard when compared to the target application rate.

334-5.5.5 Curing and Time of Application: Apply tack coat sufficiently in advance of placing bituminous mix to permit drying, but do not apply tack coat so far in advance that it might lose its adhesiveness as a result of being covered with dust or other foreign material.

334-5.5.6 Protection: Keep the tack coat surface free from traffic until the subsequent layer of bituminous hot mix has been laid.

334-6 Placing Mixture

334-6.1 Alignment of Edges: With the exception of pavements placed adjacent to curb and gutter or other true edges, place all pavements by the stringline method to obtain an accurate, uniform alignment of the pavement edge. Control the unsupported pavement edge to ensure that it will not deviate more than plus or minus 1.5 inches from the stringline.

334-6.2 Rain and Surface Conditions: Immediately cease transportation of asphalt mixtures from the plant when rain begins at the roadway. Do not place asphalt mixtures while rain is falling, or when there is water on the surface to be covered. Once the rain has stopped and water has been removed from the tacked surface to the satisfaction of the

Engineer and the temperature of the mixture caught in transit still meets the requirements as specified in 334-5.3, the Contractor may then place the mixture caught in transit.

334-6.3 Checking Depth of Layer**:** Check the depth of each layer at frequent intervals to ensure a uniform spread rate that will meet the requirements of the Contract Documents.

334-6.4 Hand Spreading: In limited areas where the use of the spreader is impossible or impracticable, spread and finish the mixture by hand.

334-6.5 Spreading and Finishing: Upon arrival, dump the mixture in the approved paver, and immediately spread and strike-off the mixture to the full width required, and to such loose depth for each course that, when the work is completed, the required weight of mixture per square yard, or the specified thickness, is secured. Carry a uniform amount of mixture ahead of the screed at all times.

334-6.6 Thickness Control: Ensure the spread rate is within 5% of the target spread rate, as indicated in the Contract Documents. When calculating the spread rate, use, at a minimum, an average of five truckloads of mix and at a maximum, an average of 10 truckloads of mix. When the average spread rate is beyond plus or minus 5% of the target spread rate, monitor the thickness of the pavement layer closely and adjust the construction operations.

If the Contractor fails to maintain an average spread rate within plus or minus 5% of the target spread rate for two consecutive days, stop the construction operation until the issue is resolved.

The Engineer will allow a maximum deficiency from the specified spread rate for the total thickness as follows:

1. For pavement of a specified thickness of 2-1/2 inches or more: 50 pounds per square yard.
2. For pavement of a specified thickness of less than 2-1/2 inches: 25 pounds per square yard.

Address the unacceptable pavement in accordance with 334-6.10.4, unless an alternative approach is agreed upon by the Engineer.

334-6.7 Leveling Courses

334-6.7.1 Patching Depressions: Before spreading any leveling course, fill all depressions in the existing surface as shown in the plans.

334-6.7.2 Spreading Leveling Courses: Place all courses of leveling with an asphalt paver or by the use of two motor graders, one being equipped with a spreader box. Other types of leveling devices may be used upon approval by the Engineer.

334-6.7.3 Rate of Application: When using Type SP-9.5 (fine graded) for leveling, do not allow the average spread of a layer to be less than 50 pounds per square yard or more than 75 pounds per square yard. The quantity of mix for leveling shown in the plans represents the average for the entire project; however, the Contractor may vary the rate of application throughout the project as directed by the Engineer. When leveling in connection with base widening, the Engineer may require placing all the leveling mix prior to the widening operation.

334-6.8 Compaction

For each paving or leveling train in operation, furnish a separate set of rollers, with their operators.

When density testing for acceptance is required, select equipment, sequence, and coverage of rolling to meet the specified density requirement. Regardless of the rolling procedure used, complete the final rolling before the surface temperature of the pavement drops to the extent that effective compaction may not be achieved or the rollers begin to damage the pavement.

No vibratory compaction in the vertical direction will be allowed for layers one inch or less in thickness or, if the Engineer or Contract Documents limit compaction to the static mode only. Compact these layers in the static mode only. Other non-vertical vibratory modes of compaction will be allowed, if approved by the Engineer; however, no additional compensation, cost or time, will be made.

When density testing for acceptance is not required, use a rolling pattern approved by the Engineer.

Use hand tamps or other satisfactory means to compact areas which are inaccessible to a roller, such as areas adjacent to curbs, headers, gutters, bridges, manholes, etc.

334-6.9 Joints

334-6.9.1 Transverse Joints: Construct smooth transverse joints, which are within 3/16 inch of a true longitudinal profile when measured with a 15 foot manual straightedge. The Engineer may waive these for transverse joints at the beginning and end of the project and at the beginning and end of bridge structures, at manholes and utility structures if the deficiencies are caused by factors beyond the control of the Contractor

such as no milling requirement, as determined by the Engineer. When smoothness requirements are waived, construct a reasonably smooth transitional joint.

334-6.9.2 Longitudinal Joints: Place each layer of pavement so all longitudinal construction joints are offset 6 to 12 inches laterally between successive layers. Plan offsets in advance so the longitudinal joints of the friction course are not in wheel path areas. The longitudinal joints for friction course layers should be within 6 inches of the lane edge or at the center of the lane. The Engineer may waive these requirements where offsetting is not feasible due to the sequence of construction.

334-6.10 Surface Requirements

Construct a smooth pavement with good surface texture and the proper cross slope.

334-6.10.1 Texture of the Finished Surface of Paving Layers: Produce a finished surface of uniform texture and compaction with no pulled, torn, raveled, crushed or loosened portions and free of segregation, bleeding, flushing, sand streaks, sand spots, or ripples. Correct any area of the surface that does not meet the foregoing requirements in accordance with 334-6.10.4.

In areas not defined to be a density testing exception per 334-6.4.1, obtain for the Engineer, three 6 inch diameter roadway cores at locations visually identified by the Engineer to be segregated. The Engineer will determine the density of each core in accordance with FDOT Test Method FM 1-T 166 and calculate the percent G_{mm} of the segregated area using the average G_{mb} of the roadway cores and the representative PC Gmm for the questionable material. If the average percent G_{mm} is less than 90.0, address the segregated area in accordance with 334-5.10.4.

334-6.10.2 Cross Slope: Construct a pavement surface with cross slopes in compliance with the requirements of the Contract Documents. Furnish a four-foot-long electronic level accurate to 0.1 degree, approved by the Engineer for the control of cross slope. Make this electronic level available at the jobsite at all times during paving operations.

334-6.10.3 Pavement Smoothness: Construct a smooth pavement meeting the requirements of this Specification. Furnish a 15 foot manual and a 15 foot rolling straightedge meeting the requirements of FM 5-509. Obtain a smooth surface on all pavement courses placed, and then straightedge all layers as required by this Specification.

334-6.10.3.1 Straightedge Testing:

334-6.10.3.1.1 Acceptance Testing: Using a rolling straightedge, test the final (top) layer of the pavement. Test all pavement lanes where the width is constant using a rolling straightedge and document all deficiencies on a form approved by the Engineer. Notify the Engineer of the location and time of all straightedge testing a minimum of 48 hours before beginning testing.

334-6.10.3.1.2 Final (Top) Pavement Layer: At the completion of all paving operations, straightedge the final (top) layer either behind the final roller of the paving train or as a separate operation. Address all deficiencies in excess of 3/16 inch in accordance with 334-6.10.4, unless waived by the Engineer. Retest all corrected areas.

334-6.10.3.1.3 Straightedge Exceptions: Straightedge testing will not be required in the following areas: shoulders, intersections, tapers, crossovers, sidewalks, bicycle/shared use paths, parking lots and similar areas, or in the following areas when they are less than 250 feet in length: turn lanes, acceleration/deceleration lanes and side streets. In the event the Engineer identifies a surface irregularity in the above areas that is determined to be objectionable, straightedge and address all deficiencies in excess of 3/8 inch in accordance with 334-6.10.4.

334-6.10.4 Correcting Unacceptable Pavement: Correct deficiencies in the pavement layer by removing and replacing the full depth of the layer, extending a minimum of 50 feet on both sides of the defective area for the full width of the paving lane, at no additional cost. Alternatively, the engineer reserves the right to accept the deficient area at no pay or reduced pay.

334-6.11 Material Transfer Vehicle: For Category 2 and Category 3 work, all final surfaces courses the contractor shall utilize a remixing material transfer vehicle (example: Roadtec MTV1000 or Terex CR662RM) to allow for continuous paving and remixing or asphalt materials.

334-7 Acceptance of the Mixture

334-7.1 General

Contractor Quality Control test results may be verified by the City by separate sample.

The asphalt mixture will be accepted based on the Asphalt Work Category as defined below:

1. Asphalt Work Category 1 – Certification by the Contractor as defined in 334-7.2.
2. Asphalt Work Category 2 – Certification and process control testing by the Contractor as defined in 334-7.3
3. Asphalt Work Category 3 – Process control testing by the Contractor and acceptance testing by the Engineer as defined in 334-7.4.

334-7.2 Certification by the Contractor

On Asphalt Work Category 1 construction, the Engineer will accept the mix on the basis of visual inspection. Submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer stating that all material produced and placed on the project meets the requirements of the Specifications. The Engineer may run independent tests to determine the acceptability of the material.

334-7.3 Certification and Process Control Testing by the Contractor & City

On Asphalt Work Category 2 construction, submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer stating that all material produced and placed on the project meets the requirements of the Specifications, along with supporting test data documenting all process control testing as described in 334-7.3.1. If required by the Contract Documents, utilize an Independent Laboratory as approved by the Engineer for the process control testing. The mix will also require visual acceptance by the Engineer. In addition, the Engineer may run independent tests to determine the acceptability of the material. Material failing to meet these acceptance criteria will be addressed as directed by the Engineer such as but not limited to acceptance at reduced pay, delineation testing to determine the limits of the questionable material, removal and replacement at no cost to the City, or performing an Engineering analysis to determine the final disposition of the material. .

334-7.3.1 Process Control Sampling and Testing Requirements: Perform process control testing at a frequency of once per day. Obtain the samples in accordance with FDOT Method FM 1-T 168. Test the mixture at the plant for gradation (P_{-8} and P_{-200}) and asphalt binder content (P_b). Measure the roadway density with 6 inch diameter roadway cores at a minimum frequency of once per 1,500 feet of pavement with a minimum of three cores per day.

Determine the asphalt binder content of the mixture in accordance with FDOT Method FM 5-563. Determine the gradation of the recovered aggregate in accordance with FM 1-T 030. Determine the roadway density in accordance with FM 1-T 166. The minimum roadway density will be based on the percent of the maximum specific gravity (Gmm) from the approved mix design. If the Contractor or Engineer suspects that the mix design Gmm is no longer representative of the asphalt mixture being produced, then a new Gmm value will be determined from plant-produced mix, with the approval of the Engineer. Roadway density testing will not be required in certain situations as described in 334-7.4.1. Assure that the asphalt binder content, gradation and density test results meet the criteria in Table 334-7.

Table 334-7
Process Control and Acceptance Values

Characteristic	Tolerance
Asphalt Binder Content (percent)	Target ± 0.55
Passing No. 8 Sieve (percent)	Target ± 6.00
Passing No. 200 Sieve (percent)	Target ± 1.50
Roadway Density (daily average)	Minimum 91.5% of Gmm
Roadway Density (any single core)	Minimum 88% of Gmm

334-7.4 Process Control Testing by the Contractor and Acceptance Testing by the Engineer

On Asphalt Work Category 3, perform process control testing as described in 334-7.3.1. In addition, the Engineer may accept the mixture at the plant with respect to gradation (P_{-8} and P_{-200}) and asphalt binder content (P_b). The mixture will be accepted on the roadway with respect to density. The Engineer may sample and test the material as described in 334-7.3.1. The Engineer may require the contractor to randomly obtain at least one set of samples per day on behalf of the City. Assure that the asphalt content, gradation and density test results meet the criteria in Table 334-7. Material failing to meet these acceptance criteria will be addressed as directed by the Engineer such as but not limited to acceptance at reduced pay, delineation testing to determine the limits of the questionable material, removal and replacement at no cost to the City, or performing an Engineering analysis to determine the final disposition of the material.

334-7.4.1 Acceptance Testing Exceptions: When the total quantity of any mix type in the project is less than 500 tons, the Engineer will accept the mix on the basis of visual inspection. The Engineer may run independent tests to determine the acceptability of the material.

Density testing for acceptance will not be performed on widening strips or shoulders with a width of 5 feet or less, variable thickness overbuild courses, leveling courses, any asphalt layer placed on subgrade (regardless of type), miscellaneous asphalt pavement, bike/shared use paths, crossovers, or any course with a specified thickness less than 1 inch or a specified spread rate less than 100 lb per square yard. Density testing for acceptance will not be performed on asphalt courses placed on bridge decks or approach slabs; compact these courses in static mode only. In addition, density testing for acceptance will not be performed on the following areas when they are less than 500 feet continuous in length: turning lanes, acceleration lanes, deceleration lanes, shoulders, parallel parking lanes, or ramps. Do not perform density testing for acceptance in situations where the area requiring density is less than 50 tons Density testing for acceptance will not be performed in intersections. The limits of the intersection will be from stop bar to stop bar for both the mainline and side streets. Compact these courses in accordance with a standard rolling procedure approved by the Engineer. In the event that the rolling procedure deviates from the approved procedure, placement of the mix will be stopped.

334-8 Method of Measurement

For the work specified under this Section, the quantity to be paid for the area placed and accepted in square yards or will be the weight of the mixture, in tons.

The bid price for the asphalt mix will include the cost of the liquid asphalt or the asphalt recycling agent and the tack coat application as specified in 334-5.5.4. There will be no separate payment for the asphalt or unit price adjustment for binder material in the asphalt mix.

334-9 Basis of Payment

334-9.1 General

Price and payment will be full compensation for all the work specified under this Section (including the applicable requirements of Sections 320 and 330). No composite pay factor will be paid.

SECTION 335 ASPHALT EMULSION SURFACE TREATMENTS

335-1 Conventional and Modified Bituminous Chip Seal

335-1.1 Description: This work shall consist of furnishing all labor, equipment, material, supplies, and other incidentals necessary to provide an application of polymer emulsified asphalt and cover coat aggregate to an existing roadway surface.

335-1.2 Materials.

335-1.2.1 Asphalt Emulsion: Provide asphalt emulsion as specified by the Work Order. Provide CRS-2H for Conventional and CRS-2P for Modified. CRS-2H and CRS-2P shall meet the requirements of AASHTO M316 and shall comply with the tables below. When CRS-2P is specified, apply the following modifications:

a). Distill the CRS-2P at 400°F for 20 min. and

b.) Provide Polymer-Modified Cationic Emulsified Asphalt, CRS-2P produced by using polymer modified base asphalt only. The emulsion shall be pumpable and suitable for application through distributor truck.

Table 335-1
CRS-2H (Conventional) Requirements

Test	Conditions	Minimum/Maximum
Test on Emulsions		
Saybolt Furol Visc.	122 °F	100/400 seconds
Settlement	5 days (a)	Maximum 5%
Storage Stability	24 hour (b)	Maximum 1%
Demulsibility	35 mL 0.8% DSS(c)	Minimum 40%
Particle Charge		positive
Sieve Test		Maximum 0.1%
Residue by Distillation		Minimum 65%

Tests on Residue		
Penetration (0.1 mm)	77 °F, 100 g, 5 seconds	80/140
Ductility	77 °F, 55 mm/minute	Minimum 400 mm
Solubility	In Trichloroethylene	Minimum 97.5%
(a) The test requirement for settlement may be waived when the emulsified asphalt is used in less than five days (b) The 24-hour (one-day) storage stability test may be used instead of the five day settlement test. (c) The demulsibility test shall be made within 30 day from of the shipment.		

Table 335-2
CRS-2P (Modified) Requirements

Test	Conditions	Minimum/Maximum
Test on Emulsions		
Saybolt Furol Visc.	122 °F	100/400 seconds
Storage Stability	24 hour (a)	Maximum 1%
Demulsibility	35 mL 0.8% DSS (b)	Minimum 70%
Particle Charge		positive
Sieve Test		Maximum 0.1%
Residue by Distillation	350 °F max	Minimum 65%
Oil Distillate	By volume of emulsion	Maximum 0.5%
Tests on Residue		
Penetration (0.1 mm)	77 °F, 100 g, 5 seconds	70/150
Ductility	77 °F, 55 mm/minute	Minimum 400 mm
Solubility	In Trichloroethylene	Minimum 97.5%
(a) The 24-hour (one-day) storage stability test may be used instead of the five day settlement test. (b) The demulsibility test shall be made within 30 day from of the shipment.		

335-1.2.2 Cover Aggregate: The chip seal cover aggregate shall be washed, hard, durable, clean rock and free from coatings or deleterious material. All of the aggregate shall be crushed gray granite with 100% fractured faces. The aggregate shall have maximum loss of 20% when tested with the LA Abrasion procedure as defined by AASHTO T96. The maximum amount of flat and elongated aggregate with a ratio of 3:1 shall not exceed 12% as determined by ASTM D4791. Only one source of aggregate shall be used for the mix design and shall conform to the following gradations:

Table 335-3
Cover Aggregate Gradation (percent passing)

Sieve Size	1/2 inch Chip	3/8 inch Chip	1/4 inch Chip
3/4”	100	100	100
1/2”	95-100	100	100
3/8”	0-60	95-100	100
1/4”	0-10	0-35	95-100
No. 4	N/A	N/A	N/A
No. 8	0-3	0-3	0
No 200	0-1.0	0-1.0	0-1.0

335-1.3 Equipment.

335-1.3.1 Asphalt Distributor: The distributor shall be self-powered and capable of providing a uniform application rate of emulsion varying from .05-1.00 gallon per square yard over a variable width up to the maximum width as required by the Engineer in a single pass. Distributor shall be self-powered and include a computerized application controls, a tachometer, pressure gauges, accurate volume devices, calibrated tank, and a thermometer for measuring temperatures of the emulsion in the tank.

The distributor shall be equipped with ground speed control and a variable power unit for the pump and full circulation spray bars, which are adjustable laterally and vertically. Prior to construction, the nozzle angle shall be adjusted uniformly to 15 - 30 degrees at an angle to the axis of the spray bar, and the spray bar height shall be set to provide one hundred percent of triple coverage in a single pass. Where multiple lane passes

will be required to complete the road width, overlapping passes must be four inches with fifty percent coverage so that the next pass will complete the full application rate specified. The longitudinal joints shall coincide with existing painted lane lines.

335-1.3.2 Aggregate Spreader: The aggregate spreader shall be self-propelled and supported by at least four tires on two axles capable of providing a uniform application rate of aggregate from five to fifty pounds per square yard over a variable width up the maximum width as required by the Engineer. The uniformity of this machine shall not vary by more than one pound per square yard. The aggregate spreader shall be equipped with the means of applying the cover aggregate to the surface with computerized application rate control so that the required amount of material will be deposited uniformly over the full width of the asphalt emulsion.

335-1.3.3 Rollers: Three self-propelled pneumatic tired rollers shall be used on the project. Pneumatic rollers are capable of ballast loading, either with water or sand, which allows the weight of the machine to be varied "from 10 to 16 tons" or "not more than 20 tons" to achieve the specified contact pressure which typically runs around 80 pounds per square inch. Tire pressure shall be specified by the manufacturer for the pneumatic tire rollers and shall not vary more than plus or minus 5.0 psi. Depending on the speed of the Chip Seal operation and the width of coverage, additional rollers may be required. At no time shall the rollers travel more than 5 miles per hour.

335-1.3.4 Sweepers: Provide motorized brooms with a positive means of controlling vertical pressure and capable of cleaning the road surface prior to spraying bituminous material and removing loose aggregate after bituminous seal coating.

335-1.4 Installation.

335-1.4.1 Preparation and Placement: The Chip Seal shall not be applied when the pavement is moist, or when the weather is or may be detrimental. Detrimental weather is defined as rain showers, cool temperatures, moist pavements, threat of rain showers, or other environmental factors which could affect the performance of the Chip Seal construction. No Chip Seal shall be applied if either the pavement or air temperature is below 60°F and falling.

The Contractor shall be responsible for all measures required providing a thoroughly clean and dry pavement surface including vegetation removal and sweeping prior to the Chip Seal application. The Contractor shall remove and dispose of all raised pavement markings prior to beginning application.

Manholes, valve boxes and thermo markings (as directed by the Engineer) shall be covered with an approved material during the operation and shall be removed immediately after the street has been Chip Sealed. The Contractor is responsible for locating all exposed manholes, valve boxes and thermo markings prior to Chip Sealing.

Application of Asphalt Emulsion shall be performed by means of a pressure distributor in a manner to achieve a uniform and continuous spread over the asphalt surface. The temperature of the emulsion shall be applied within the range of 140-180°F. At no time shall the emulsion be heated above 185° in the distributor. Prior to construction, calibrate the distributor in accordance with ASTM D2995-99 in the presence of the Engineer. The distributor shall be moving forward at the proper application speed at the time the spray bar is opened. If at any time a nozzle becomes clogged or not spraying a proper pattern, the operation shall be immediately halted until repairs are made. Repairs shall be made immediately after deficiencies are noted and prior to the aggregate placement at all times during construction. The width of the emulsion application shall be no greater than the width of the aggregate spreader except where additional passes are required then the emulsion shall be four inches beyond the aggregate spread at a fifty percent application rate. At no time shall the emulsion be allowed to break, chill, setup, harden, or otherwise impair the aggregate retention before the aggregate has been properly applied and rolled.

335-1.4.2 Application of Cover Coat Aggregate: The aggregate shall be applied within one minute following the emulsion application by the approved aggregate spreader. Prior to construction, calibrate the aggregate spreader in accordance with ASTM D5624-02, in the presence of the Engineer. The allowable deviation in the amount of aggregate spread on each of the rubber mats shall not exceed plus or minus 1 pound per square yard in the transverse direction, or plus or minus 1 pound per square yard in the longitudinal direction, from the design application rate. Spreading shall be accomplished in such a manner that the tires of the trucks and aggregate spreader never contact the newly applied asphalt emulsion. The width of the aggregate spreader shall be equal to the width of the emulsion spread, except where additional passes are required. Areas, which are deficient in aggregate, shall be covered immediately with additional material. Previously used (sweeping) aggregates will not be allowed.

335-1.4.3 Mix Design: The contractor shall provide a mix design to the engineer at the Pre-Construction meeting to be approved prior to beginning work. The McLeod design method shall be utilized in determining application rates. The following application rates are suggested initial values for the mix design:

Table 335-4		
Material	Asphalt Emulsion	Cover Coat Aggregate
1/2 Chip Seal	0.36 – 0.46 gal/sy	22 lbs/sy
3/8 Chip Seal	0.34 – 0.40 gal/sy	20 lbs/sy
1/4 Chip Seal	0.28 – 0.34 gal/sy	18 lbs/sy

335-1.4.4 Mix Design Test Strip: Begin the rate of application for the bituminous material as determined by the approved bituminous seal coat design. Construct a short test strip 100 feet long to ensure the bituminous material application rate is adequate. After applying the bituminous material to this test strip, place the cover aggregate at the design application rate. Inspect the aggregate after rolling for proper embedment. Make adjustments to the rate of application, if necessary. Construct one full lane width at a time. Make additional adjustments to the rate of application during the Project, if needed.

335-1.4.5 Rolling: Initial chip seal rolling shall begin one minute after the application of cover coat aggregate. Rollers shall work in tandem and complete a minimum of three passes with a sufficient overlap. Should the rolling operation be delayed, the aggregate and emulsion spreading shall be halted until the operation regains proper sequencing and timing. The maximum speed of the rolling operations shall be 5 miles per hour.

335-1.4.6 Sweeping: Excess aggregate shall be swept from the roadway and adjacent areas. Sweep off the surplus aggregate on the same day of the chip seal construction. Exercise care to not disturb aggregate that has set. Re-sweep areas the day after the initial sweeping. The Contractor will dispose of the surplus cover aggregate in a manner satisfactory to the Engineer.

335-1.5 Quality Control.

335-1.5.1 General: The Contractor is responsible for quality control (QC) sampling and testing.

335-1.5.2 Chip Seal Aggregate:

335-1.5.2.1 Stockpile Production: Provide material gradation and quality test results taken during production. The testing rate for gradation is a minimum of one per day, or one per 1500 tons, whichever is greater. The testing rate for quality values in Table 335-3 is once per source.

335-1.5.2.2 Construction: Sample the cover aggregate once each production day. The aggregate sample will be taken from the chip spreader.

335-1.5.3 Chip Seal Asphalt Emulsion: Only asphalt emulsion from Certified Sources is allowed for use. Verify the application rate of the asphalt emulsion by dividing the volume of material used by the area of chip sealing for that day. Provide material certification and quality control test results for each batch of asphalt emulsion used on the Project. Include the supplier name, plant location, emulsion grade, and batch number on all reports.

335-1.6 Quality Assurance.

335-1.6.1 General: The City is responsible for quality assurance (QA) sampling and testing at its discretion. Samples cannot be from split samples and must be taken randomly by the Engineer.

335-1.6.2 Cover Aggregate:

335-1.6.2.1 Stock Pile Production: Test for gradation-the testing rate is a minimum of one per day, or one per 1500 tons, whichever is greater. If the material is hauled from the production site to a temporary stockpile, test at the temporary stockpile.

335-1.6.2.2 Construction: Sample the cover aggregate once each production day. The aggregate sample will be taken from the chip spreader. Samples will be stored and tested for gradation, at the Engineer's discretion. If the results vary from the requirements of Table 335-3, the contractor will remove and replace the defective material placed as directed by the engineer to meet specifications.

335-6.3 Asphalt Emulsion: Sample the first daily shipment. Also, provide one sample for every 50,000 gallons (approximately 200 ton).

335-1.7 Basis of Payment.

Payment for the chip seal at the Contract bid unit prices of measure is compensation in full for all costs of furnishing and applying the material as specified, including cleaning the existing pavement, stationing, purchase of aggregate, delivery of aggregate, all labor, equipment, and materials necessary for the placement of the chip seal, sweeping of

any loose aggregate after construction and other requirements as specified. The cost of removing existing raised pavement markings and installation of temporary paint markings for traffic control shall be considered incidental to the work unless specified elsewhere in the plans or proposal.

Payment for the accepted quantity of asphalt emulsion for chip seal (including any required additives) at the Contract bid price of measure is compensation in full for all costs of furnishing and applying the material as specified.

Payment will be made in accordance with the schedule set at the Contract bid price for the specified unit of measure. Such payment, in each instance, is compensation in full for all costs incidental thereto.

335-2 Conventional and Premium Micro Surfacing

335-2.1 Description.

Construct a micro surfacing pavement with the type of mixture specified in the Work Order. Micro surfacing is a mixture of polymer-modified emulsified asphalt, mineral aggregate, mineral filler, water, and other additives, properly proportioned, mixed and spread on a paved surface.

The mix shall be capable of being spread in variable thickness cross-sections (wedges, ruts, scratch courses and surfaces) which, after curing and initial traffic consolidation, resists compaction throughout the entire design tolerance range of asphalt binder content and variable thickness to be encountered. The end product shall maintain a skid-resistant surface in variable thick sections throughout the service life of the micro surfacing.

The mix shall be a quick-traffic system that will be able to accept straight rolling traffic one hour after application.

335-2.2 Materials.

335-2.2.1 Emulsified Asphalt:

335-2.2.1.1 General Requirements: Provide asphalt emulsion as specified by the Work Order. Provide CSS-1HP for Conventional, and CSS-1EP for Premium. Emulsion shall meet the requirements of the tables below.

Table 335-5
CSS-1HP (Conventional) Requirements

Property	Test Procedure (AASHTO)	Specification	
		(min)	(max)
Viscosity, Saybolt - Furol @ 77°F, sec	T59	20	100
Storage Stability Test, 1-Day, % (a)	T59		1
Settlement, 5-Day, % (b)	T59		5
Particle Charge Test	T59	Positive	
Sieve Test, %	T59		0.10
Residue, %	T59	62	
Tests on Residue From Distillation Test: (c)			
Penetration, 77°F, 100 g., 5 sec, dmm	T49	40	90
Ductility, @77°F@ 5 cm per minute, cm	T51	40	
Solubility in Trichloroethylene, % (d)	T44	97	
Softening Point, °F	T53	135	

(a) The 24-hour (1-day) storage stability test may be used but does not predict that the 5-day settlement test will pass.
(b) The test requirement for settlement may be waived when the emulsified asphalt is used in less than five days time.
(c) The residue from the emulsified asphalt shall be obtained in accordance with AASHTO T 59 except that the maximum test temperature shall not exceed 350°F and the duration shall not exceed 20 minutes.
(d) Solubility test is to be performed on the base asphalt used for emulsion manufacture.

Table 335-6
CSS-1EP (Premium) Requirements

Property	Test Procedure (AASHTO)	Specification	
		(min)	(max)

Modified Base Asphalt Properties			
ODSR, kPa (G*/sin δ, 10 rad./sec) @ 76°C	T315	1	
Emulsion Properties			
Viscosity, Saybolt-Furol, @ 122°F, SFS	T59	15	150
Sieve Test, %	T59		0.1
Residue by Evaporation, %	T59	62	
Residue Properties from Low Temperature Evaporation, PP72-11, Procedure B			
MSCR @ 70°C, Jnr @ 3.2, 1/kPa	T350		0.5
MSCR @ 70°C, Recovery @ 3.2 kPa, %	T350	80	

335-2.2.1.2 Sampling, Certification, and Verification: For the first load of emulsified asphalt produced for the project, the supplier shall submit a sample to the City's designated laboratory for testing before use. Cost shall be borne by the Contractor. When applicable, a pretest number will then be assigned by the designated laboratory, which shall be furnished with all emulsified asphalt delivered to the project.

At any time during application, the Engineer 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 Engineer may require the supplier to cease shipment of that pre-tested product. Further shipment of that pre-tested product to the City's projects will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the Engineer. Proper sampling and handling techniques are required, and the testing shall be completed within seven days of the sample being taken. Refer to AASHTO T 40 for emulsified asphalt sampling procedures.

335-2.2.2 Aggregate:

335-2.2.2.1 General: Use an aggregate consisting of 100% crushed stone. The aggregate shall be a crushed stone such as granite, slag, limestone, chat, or other high-quality aggregate, or a combination thereof. To assure the material is 100% crushed, the parent aggregate will be larger than the largest stone in the gradation used. Use aggregate source(s) from an FDOT approved source.

335-2.2.2.2 Aggregate Quality Tests: In addition to the requirements of FDOT Standard Specification Sections 901 and 902, meet the minimum aggregate requirements of Table 335-7.

Table 335-7
Quality Tests for Aggregate

AASHTO Test No.	Aggregate Property	Specification Requirements
AASHTO T176	Sand Equivalent	65 Minimum
AASHTO T104	Soundness	15% Maximum using Na_2SO_4 or 25% Maximum using $MgSO_4$
AASHTO T96	Abrasion Resistance (1)	30% Maximum
AASHTO T278, T279	Polish Value	31 Minimum

(1) The abrasion test will be performed on the parent aggregate.

335-2.2.2.3 Gradation Requirements: When tested in accordance with AASHTO T27 and AASHTO T11, the target (mix design) aggregate gradation, including the mineral filler, shall be within the gradation range for a Type II or Type III mixture shown in Table 335-8.

Table 335-8
Aggregate Gradation Requirements

Sieve Size	Type II Mix Design Range Percent Passing	Type III Mix Design Range Percent Passing	Stockpile Tolerance from Mix Design Percent Passing
3/8 inch	100	100	N/A
No. 4	90 – 100	70 – 95	± 6%
No. 8	65 – 90	45 – 70	± 5%
No. 16	45 – 70	30 – 50	± 5%
No. 30	30 – 50	20 – 35	± 4%

No. 50	18 – 30	12 – 25	± 4%
No. 100	10 – 21	7 – 18	± 3%
No. 200	5 – 15	5 – 12	± 3%

The aggregate will be accepted from the stockpile located at the project. The stockpile will be accepted based on five quality control gradation tests conducted in accordance with AASHTO T 2 and one sand equivalency test conducted in accordance with AASHTO T 176. If the average of the five gradation tests is within the stockpile tolerances shown in Table 335-8 for all of the sieve sizes, and the one sand equivalent test meets the requirement shown in Table 335-7, then the stockpile is accepted. If the average of the five gradation tests is not within the stockpile tolerances shown in Table 335-8 for any sieve size, remove the stockpiled material and replace it with new aggregate or blend other aggregate sources with the stockpiled material. Aggregates used in blending must meet the quality tests shown in Table 335-7 before blending and must be blended in a manner to produce a consistent gradation and sand equivalent value. If the sand equivalent quality control test does not meet the criteria shown in Table 335-7, remove the stockpiled material and replace it with new aggregate. If new aggregate is obtained or blending of aggregates is performed resulting in an aggregate that is not represented by the mix design, submit a new mix design to the Engineer for approval prior to production of the mix. Costs for test shall be borne by the Contractor.

The Engineer may obtain stockpile samples at any time. If the average of five gradation tests conducted in accordance with AASHTO T 2 is not within the gradation tolerances shown in Table 335-8 for any sieve size, or if the sand equivalent value does not meet the requirements of Table 335-7, cease production until the problem is corrected to the satisfaction of the Engineer.

All stockpiled aggregates shall be screened at the stockpile area prior to delivery to the paving machine to remove oversize material and non-desirable particles. The screened aggregate will be placed directly into the nurse truck or into the micro surfacing mixing machine, depending on whether continuous or truck mounted machines are used. Screened aggregate may not be placed on the ground prior to mixture laydown.

335-2.2.3 Polymer Modifier and Polymer Modified Based Asphalt: For conventional, the polymer modifier shall be either SBR or SBS in composition. It shall be co-milled with the asphalt cement during the manufacture of the emulsified asphalt to produce a homogeneous mixture. The polymer modifier shall be added in the necessary proportions to result in a minimum 3.0% polymer solid by weight of residual asphalt cement in the emulsion. For premium, the base asphalt for the emulsion shall be SBS polymer modified at 6% prior to and not concurrent with the emulsification process and shall meet the requirements listed in Table 335-6.

335-2.2.4 Mineral Filler: Utilize Type I or I/II Portland cement, hydrated lime, limestone dust, fly ash or other approved filler, as listed in ASTM D242 for mineral filler. The owner will accept the mineral filler by visual inspection. The type and amount of mineral filler 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 mineral filler may be permitted during production if it is found to result in better consistency or set times. Any changes to the percentage of mineral filler must meet the requirements of Table335-7.

335-2.2.5 Water: Utilize water that is potable and free of harmful soluble salts, reactive chemicals, or any other contaminants.

335-2.2.6 Additives: Additives may be added to the mixture or any of the component materials to provide control of quick-trafficking properties. The additives to be used shall be indicated on the mix design and be compatible with the other components of the mix. The additives shall be supplied by the asphalt emulsion manufacturer or approved by the laboratory as part of the mix design.

335-2.3 Mix Design.

Before work begins, the Contractor shall submit a mix design to the Engineer. The mix design must have been developed within the last year using the specific materials to be used on the project. Mix designs shall be developed by laboratories with experience in designing micro surfacing mixtures. When requested by the Engineer, the mix design shall be verified by an independent laboratory not affiliated with the emulsion supplier or the contractor. Verification shall include confirmation of the mix design results for wet cohesion and 1hour wet track abrasion loss. Projects requiring rut filling, or multilayer application, shall also require lateral displacement confirmation.

Submit the proposed mix design with supporting test data indicating compliance with all mix design criteria. Allow the Engineer a minimum of 10 days to either conditionally verify or reject the mix design.

Meet the requirements provided in Table 335-9. After the mix design has been approved, no substitutions to the mix design will be permitted, unless approved by the Engineer. The Engineer 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.

Table 335-9
Mix Design Testing Requirements

Test	Method ISSA TB #(a)	Value	
		Conventional	Premium
Wet Track Abrasion Loss, Maximum 1 hour, soak 6 day soak	TB 100	50 g/ft^2 75 g/ft^2	38 g/ft^2 60 g/ft^2
Lateral Displacement, Maximum	TB 147A or TB 147C	5%	5%
Excess Asphalt by LWT (Maximum)	TB 109	50 g/ft^2	50 g/ft^2
System Compatibility, minimum grade	TB 144	11 points	11 points
Mixing Time, Seconds @ 77°F, minimum	TB 113	120	120
Set Time, 30 minutes, minimum	TB 139	12 kg-cm	12 kg-cm
Early Rolling Traffic Time, 60 minutes, minimum	TB 139	20 kg-cm	20 kg-cm
Water Resistance, 30 minutes	TB 102	No Discoloration	No Discoloration
Wet Stripping Test, % Coating, minimum	TB 114	90	90
System Compatibility	TB 115	Pass	Pass
To be Conducted at Recommended Job Mix Formula			
Cantabro Mass Loss – % (b)	TX 245-F	NA	2.0% Max
Indirect Tensile Stiffness Modulus – MPa (b)	EN 12697-26 Annex C	NA	10,000 min
Bulk Specific Gravity	AASHTO T166	NA	2.100-2.400

(a) Reference to ISSA TB means International Slurry Surfacing Association Technical Bulletin.
(b) Samples to be prepared by ISSA TB 148 Marshall Compaction only (30 blows/side) and tested in dry condition at 25°C.

The mix design must clearly show the proportions of aggregate, emulsified asphalt, mineral filler, water, and additive usage based on the dry weight of the aggregate; allowable adjustments to mineral filler shall be identified in the mix design. Meet the mix design component material requirements provided in Table 335-10.

Table 335-10
Mix Design Component Material Requirements

Component Materials	Specification Requirements
Residual Asphalt	6.0 to 9.0% (by dry weight of aggregate)
Mineral Filler	0.5 to 3.0% (by dry weight of aggregate)
Polymer-based Modifier(solids based on asphalt weight content)	Conventional - Minimum of 3.0% Premium – Minimum of 6.0% SBS
Additives	As needed
Water	As required to produce proper mix consistency

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 Engineer. 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.

335-2.4 Equipment.

335-2.4.1 General: Maintain all equipment, tools, and machines used in the performance of this work in satisfactory working condition at all times to ensure a high-quality product.

335-2.4.2 Mixing Equipment: The paving mixture shall be blended by a self-propelled, positive, non-slipping aggregate delivery system (belt over chain) micro-surfacing mixing machine which shall be a continuous flow mixing unit able to accurately deliver and proportion the aggregate, polymer-modified emulsion,

mineral filler, field control additives and water to a revolving multi-blade, twin shafted mixer and discharge the mixed product on a continuous flow basis. The mixture shall be thoroughly blended so that no uncoated aggregate is visible upon discharge from the mixing unit. The machine shall be equipped with self-loading devices, which provide for the loading of all materials while continuing to lay the micro surfacing, thereby minimizing construction joints. The machine shall be equipped with opposite side driving stations to optimize longitudinal alignment. The machine shall be equipped to allow the operator to have full hydrostatic control of the forward and reverse speed during the application of the micro-surfacing material. If truck-mounted units are allowed, they shall be equipped with a positive, non-slipping aggregate delivery system (belt over chain) and have the capability of applying a minimum of 10 tons of aggregate without recharging the aggregate bin.

335-2.4.3 Water Pressure System: The mixing machine shall be equipped with a water pressure system and nozzle type spray bar to provide water spray ahead and outside the spreader box.

335-2.4.4 Proportioning Device: The machine shall be equipment with individual volume or mass controls or other gauging devices for measuring and proportion each material (i.e., aggregate, mineral filler, emulsified asphalt, additives, and water) added to the mix. Each material control device shall be calibrated, properly marked and positively interlocked. The aggregate feed to the mixer shall be equipped with a revolution counter or similar device so that the amount of asphalt emulsions, aggregate and mineral filler used may be determined at any time.

335-2.4.5 Spreading Equipment: Attached to the machine shall be a hydraulically adjustable type spreader box with a positive screed adjustment for yield control. The box shall be attached to the mixer, equipped with ribbon flights mounted on an adjustable shaft to continually agitate and distribute the material throughout the box. The box will be equipped with curb bumpers and replaceable runners with a minimum of 5-ft long end runners. The box shall be equipped with a sufficient walkway to provide access to either side of the spreader box without walking through the freshly applied material. The box must be capable of laying mix to a width of 14 ft. The equipment shall provide sufficient turbulence to prevent the mix from setting in the box or causing excessive build-up or lumps. To prevent the loss of mixture from the box, the contractor shall attach flexible seals, front and rear, in contact with the road. The full width application box shall be equipped with a secondary strike-off located approximately 2 to 3 ft behind the primary strikeoff to minimize transvers corrugations. The secondary strike-off shall have elevation and width adjustments similar to the primary strike-off. It shall have a pivot point where it can be tilted for texturing or raised completely off of the surface. The use of burlap drags or other drags necessary to obtain the desired surface texture shall require approval by the City. Drags having excessive build-up shall be replaced. Drags shall be kept in a completely flexible condition at all times.

335-2.4.5.1 Rut-filling Equipment: When required by the plans, micro surfacing material may be used to fill ruts, utility cuts, depressions in the existing surface, etc. Mixtures shall meet ther requirements of Type III. When rutting or deformation is less than 1/2 inch, a full width scratch course may be applied with the spreader box using a metal or stiff rubber strike-off. Ruts of 1/2 inch or greater in depth shall be filled independently with a rut-filling box, either five or six feet in width. Ruts that are in excess of 1-1/2 inch in depth may require multiple applications with the rut-filling box to restore the cross-section.

When a rut box is used, emulsified asphalt content may be reduced by 0.5% of the mix design target. Any reduction of emulsified asphalt content must be within the tolerance of the job mix formulation listed in the mix design. Material placed with the rut-filling box shall have a 1/4 inch crown to allow for traffic consolidation. Before placing subsequent lifts, allow all rut-filling material to cure under traffic for at least 24 hours.

335-2.4.6 Emulsion Pump: The emulsion pump shall be heated, positive displacement-type pump.

335-2.4.7 Auxiliary Equipment: Provide suitable surface preparation equipment, traffic control equipment, hand tools, and any other support and safety equipment necessary to perform the work.

335-2.5 Calibration.

Calibrate each mixing unit to be used in the performance of the work in the presence of the City prior to the start of construction. Previous calibration documentation covering the exact materials to be used may be acceptable, provided that no more than 60 days have lapsed. Document the individual calibration of each material at various settings, which can be related to the machine metering devices. Do not utilize any mixing unit until the calibration has been completed and approved by the City. Any component replacement affecting material proportioning requires that the machine be recalibrated. Once calibrated, the aggregate and emulsion flows shall not be changes without approval of the City. The water and additive may be adjusted in the field to control the mix properties to produce an acceptable mix.

335-2.6 Weather Limitations.
Micro surfacing shall only be applied when both pavement and air temperatures are 50°F and rising. Do not apply when the weather is foggy or rainy or there is a forecast of temperatures below 32°F within 48 hours of placement. The mixture shall not be applied when weather conditions prevent opening to traffic within a reasonable amount of time, as determined by the City.

335-2.7 Surface Preparation.

335-2.7.1 General: Remove any thermoplastic striping materials and retro-reflective pavement markers in the areas to be micro surfaced. Provide temporary striping as necessary to comply with plan requirements. Immediately prior to applying the micro surfacing, clear the surface of all loose material, silt spots, vegetation, and other material that will negatively affect the quality of the micro surfacing, utilizing any standard cleaning method. If water is used for cleaning, allow any unsealed cracks to dry thoroughly before applying micro surfacing. Protect manholes, valve boxes, drop inlets and other service entrances from the micro surfacing mixture by a suitable method. The City will approve the surface preparation prior to micro surfacing. No loose aggregate, either spilled from the lay-down machine or existing on the road, will be permitted.

335-2.7.2 Cracks: If the Work Order call for crack filling prior to construction of the micro surfacing treatment, pre-treat any cracks in the surface of the pavement with a crack filler meeting the material requirements of Section 305 prior to the application of the micro surfacing. Fill any cracks with a width greater than 1/4 inch. Do not overfill the cracks. Crack filling material must cure for a minimum of 30 days prior to application of the micro surfacing.

335-2.7.3 Rumble Strips: Where shoulders are not to be micro surfaced, prevent material from being applied to or entering any rumble strip depressions. If necessary, remove any material that enters the depressions. When rumble strips are to be micro surfaced, place a scratch course to fill the depressions prior to placing the final surface course.

335-2.7.4 Tack Coat: Place a tack coat on all concrete or brick pavement prior to constructing a micro surfacing course. In general, the City will not require a tack coat on asphalt pavements except in areas that are extremely dry or raveled, as determined by the City. If required, the tack coat should be type SS, type CSS, or the micro surfacing emulsified asphalt. It may consist of one part emulsified asphalt to three parts water and should be applied with a standard distributor. The distributor shall be capable of applying the dilution evenly at a rate of 0.05-0.15 gallons per square yard.

335-2.8 Test Strip.
Construct a test strip for the City to evaluate. The test strip should be performed in similar conditions as those expected during actual application. The test strip shall be 1,000 feet in length at a location not associated with the project within reasonable proximity to the project staging area. The intention of the test strip is to assure adequate workmanship, aesthetics and that the cure time of the mixture is achievable when applied with the personnel, equipment and materials intended for use during execution of the project. Acceptable cure time is defined by the ability of the test strip to accept rolling traffic within one hour after placement. Full production may begin once the test strip has been accepted by the City.

If the City deems the test strip to be unacceptable, the Contractor shall make any necessary changes. Once the City is satisfied that the cause of the problem has been remedied, the Contractor may resubmit a new test strip for evaluation.

335-2.9 Application.

335-2.9.1 General: Pre-wet the surface by fogging ahead of the spreader box with water. Adjust the rate of application of the fog spray to suit temperatures, surface texture, humidity, and dryness of the pavement.

The micro surfacing shall be of the desired consistency upon leaving the mixer. Carry a sufficient amount of material in all parts of the spreader box at all times so that complete coverage is obtained. Avoid overloading of the spreader box. Do not allow lumping, balling, or unmixed aggregate in the micro surfacing mixture.

Do not leave streaks, such as those caused by oversized aggregate, in the finished surface. If excess streaking develops, stop production until the situation has been corrected. Excessive streaking is defined as more than four drag marks greater than 1/2 inch wide and 4 inches long, or 1 inch wide and 3 inches long, in any 30 square yard area. Do not permit transverse ripples or longitudinal streaks of 1/4 inch in depth or greater, when measured by placing a 10 foot straight edge over the surface.

335-2.9.2 Rate of Application: The average single application rate, as measured by the Contractor, shall be in accordance with Table 335-11, unless otherwise specified in the plans. Full width application rates must

be maintained within plus or minus 2 pounds per square yard of the specified rate. Application rates are based upon the weight of dry aggregate in the mixture. The maximum thickness of any single layer of micro surfacing at the edge of the pavement shall be 1/4 inch.

Table 335-11
Rate of Application

Aggregate Type	Location	Suggested Application Rate(1)	
Type II	Collectors, Local Roads, and Airport Runways	Single Application: 5-21 lbs/yd^2	Double Application (two lifts): Bottom: 14-18 lbs/yd^2 Top: 16-20 lbs/yd^2 Total: 30-34 lbs/yd^2
	Scratch or Leveling Course	As Required --- 14 lb/yd^2 (minimum)	
Type III	Interstate, Arterial Routes, and Wheel Ruts	Single Application: 18-26 lbs/yd^2	Double Application (two lifts): Bottom: 16-22 lbs/yd^2 Top: 18-22 lbs/yd^2 Total: 34-44 lbs/yd^2
	Scratch or Leveling Course	As Required --- 16 lb/yd^2 (minimum)	

(1) Suggested application rates are based upon the weight of dry aggregate in the mixture.

335-2.9.3 Joints: Prevent excessive buildup, uncovered areas, or unsightly appearance on longitudinal and transverse joints. Provide suitable-width spreading equipment to produce a minimum number of longitudinal joints throughout the project. Place longitudinal joints on lane lines, where possible. Use half passes and odd-width passes only when absolutely necessary. Do not apply a half pass as the last pass of any area. Do not overlap longitudinal lane line joints by more than three inches. Do not construct joints having more than a 1/4 inch difference in elevation when measured by placing a 10 foot straight edge over the joint and measuring the elevation drop-off. Construct longitudinal joints so that water is not held at the joint. Construct transverse joints at the beginning and end project limits so that the elevation difference between the micro surfacing and the adjacent pavement does not exceed 1/4 inch.

335-2.9.4 Mix Stability: Produce a micro surfacing mixture that possesses 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. The mixture shall be free of excess water or emulsified asphalt and free of segregation of the emulsified asphalt and aggregate fines from the coarser aggregate. Do not spray water directly into the spreader box while applying micro surfacing material under any circumstances.

335-2.9.5 Handwork: Utilize hand squeegees or lutes to provide complete and uniform coverage of micro surfaced areas that cannot be reached with the mixing machine. Lightly dampen the area to be hand worked prior to mix placement, if necessary. Care shall be exercised to leave no unsightly appearance from handwork. When performing handwork, provide the same type of finish as that applied by the spreader box.

335-2.9.6 Lines: Construct straight lines along curbs and shoulders. Do not permit runoff on these areas. Keep lines at intersections straight to provide a good appearance. If necessary, utilize a suitable material to mask off the end of streets to provide straight lines. Edge lines shall not vary by more than 2 inches horizontally.

335-2.9.7 Cleanup: Remove micro surfacing mixture from all areas such as manholes, gutters, drainage structures, rumble strips, and as otherwise specified by the Engineer. On a daily basis, remove any debris resulting from the performance of the work.

335-2.9.8 Post Sweeping: If required by the City, broom the surface of any loose material within 48 hours after the completion of the micro surfacing. If directed by the City, perform this operation again approximately seven to ten days after completion of the micro surfacing as needed. Additionally, clean the surface, as necessary, prior to application of the final pavement markings.

335-2.10 Quality Control and Assurance.

335-2.10.1 General: Produce a mixture that will meet the mix design and the quality control (QC) tolerances specified in Table 335-12. Notify the Engineer immediately if QC test results exceed the tolerances specified in Table 335-12, and stop mix production. Identify the cause of the deviation, and determine the corrective action necessary to bring the mixture into compliance. Obtain the Engineer's approval before resuming work.

The City reserves the right to verify, at the City's cost, QC test accuracy by an independent laboratory not heretofore associated with the project. If the Engineer identifies a condition that causes an unsatisfactory micro surfacing treatment, immediately stop production work and correct the defect at no additional cost.

Table 335-12 Micro Surfacing Quality Control Tolerances							
Aggregate Gradation Tolerances (±)							
Sieve Size	No. 4	No. 8	No. 16	No. 30	No. 50	No. 100	No. 200
Tolerance	6.0%	5.0%	5.0%	4.0%	4.0%	3.0%	3.0%
General Quality Control Tolerances (±)							
Parameter				Tolerance			
Asphalt Cement Content Single Test				0.5% from mix design			
Asphalt Cement Content Daily Average				0.2% from mix design			
Application Rate (as determined by 1,000 ft yield checks)				2 lb/yd^2			
Sand Equivalent Test (ASTM D2419)				7% from mix design			

335-2.10.2 Contractor's Quality Control Plan: Provide and follow a QC plan that will maintain QC for production and construction processes. Provide the Engineer with a copy of the QC plan for review and approval before the pre-construction meeting. Include, at a minimum, the following items:

a) The source materials used on the project.
b) Sampling and testing methods used to determine compliance with material specifications.
c) The equipment to be used on the project.
d) Calibration method used to determine compliance with the mix design.
e) Pavement cleaning and preparation procedure.
f) Plan for protecting micro surfacing mixture from damage by traffic.
g) Procedure for monitoring initial acceptance requirements.
h) An action plan demonstrating adjustments of the micro surfacing operation for adverse environmental conditions.

335-2.10.3 Minimum Sampling and Testing Frequency:

335-2.11.3.1 Fine Aggregate Gradation: Sample fine aggregate from the project stockpile and test for gradation and sand equivalency. Perform one test per 500 tons of fine aggregate.

At the discretion of the City, an alternative would allow certification of an entire stockpile. The stockpile will be accepted based on five quality control gradation tests conducted in accordance with AASHTO T 2 and five sand equivalency tests conducted in accordance with AASHTO T 176. If the average of the five gradation tests is within the stockpile tolerances shown in Table 335-8 for all of the sieve sizes and the five sand equivalent tests meets the requirement shown in Table 335-7, then the stockpile is accepted.

335-2.11.3.2 Asphalt Content: Calculate the percent asphalt content of the mixture at least three times per day. The City's on-site representative shall randomly determine the timing for the readings used to calculate asphalt content.

335-2.11.3.3 Application Rate: Calculate the yield of the course placed at least three times per day. The Owner's on-site representative shall randomly determine the timing for the readings used to calculate application rate.

335-2.10.4 Documentation: Complete a daily report that includes the following information:

a) Job number
b) Route/Street Name(s)
c) Owner's On-Site Representative
d) Date
e) Air temperature – Min/Max (during application)
f) Unit weight of emulsion (pounds per gallon)
g) Beginning and ending application locations
h) Counter readings (beginning, ending, and total difference)
i) Total area (square yards)
j) Aggregate weight
k) Gallons of emulsion
l) Application rate (pounds per square yard)

m) Contractor's authorized signature
n) QC aggregate properties (if required)
o) Asphalt emulsion bill of lading(s)

335-2.11 Acceptance.
Allow the Engineer 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.

335-2.12 Basis of Payment.
335-2.12.1 General: The micro surfacing shall be paid unit price per square yard, completed and accepted. Such price and payment shall be full compensation for performing all work included in this section, and shall include the cost of all materials, including the cost of the emulsified asphalt and aggregate. Crack sealing, if required, shall be paid for under the appropriate pay item.

335-3 Cape Seal
335-3.1 Description and Payment.
Construct a cape seal application by placing a chip seal application in accordance with 335-1 or rejuvenating scrub seal in accordance with 335-5 followed by a micro surface application in accordance with 335-2. Payment will be made in accordance with the separate chip seal or rejuvenating scrub seal and micro-surfacing applications as outlined in the Work Order.

335-4 Asphalt Rejuvenation
335-4.1 Description.
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 with or without titanium dioxide to asphaltic concrete surface courses.

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.

335-4.2 Materials.
The asphalt rejuvenating agent shall be an emulsion composed of a petroleum resin oil base uniformly emulsified with water. The contractor shall submit a certified statement from the asphalt rejuvenator manufacturer showing that the asphalt rejuvenating emulsion conforms to the required physical and chemical requirements shown in Table 335-13. Asphalt rejuvenating agent with titanium dioxide shall have a minimum of 2.0% TiO_2.

Table 335-13
Asphalt Rejuvenation Requirements

Property	Test Methods		Requirements	
	ASTM	AASHTO	Min	Max
Tests on Emulsion:				
Viscosity @ 25°C, SFS	D-244	T-59	15	40
Residue, % W[1]	D-244(Mod.)	T-59(Mod)	60	65
Miscibility Test[2]	D-244(Mod.)	T-59(Mod)	No Coagulation	
Sieve Test, %W[3]	D-244(Mod.)	T-59(Mod)		0.1
Particle Charge Test	D-244	T-59	Positive	
Percent Light Transmittance[4]	-	-		30
Tests on Residue from Distillation:				
Flash Point, COC, °C	D-92	T-48	196	
Viscosity @ 60°C, cSt	D-445	-	100	200
Asphaltenes, %w	D-2006-70	-		1.00
Maltene Dist. Ratio[5]	D-2006-70	-	0.3	0.6
PC/S Ratio[5]	D-2006-70	-	0.5	
Saturated Hydrocarbons,S[5]	D-2006-70	-	21	28
[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] Procedure for Determining Percent Light Transmittance on Asphalt Rejuvenating Agent:

1. Scope: This procedure covers the determination of percent light transmittance of the asphalt rejuvenating agent.
2. Apparatus:
   a. Container may be glass, plastic or metal having a capacity of 6,000 ml.
   b. Graduated cylinder, 1,000 ml, or greater
   c. Light transmittance measuring apparatus, such as Bausch and Lomb or Lumberton spectrophotometer
   d. Graduated pipette having 1 ml capacity to 0.01 ml accuracy
   e. Suction bulb for use with pipette
   f. Test tubes compatible with spectrophotometer, 3/4" X 6, Bausch and Lomb, Catalog No. 33-17- 81, (B&L)
3. Calibration of spectrophotometer; calibrate 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.
4. Procedure:
   a. Shake, stir or otherwise thoroughly mix emulsion to be tested. Place sample of emulsion in beaker and allow to stand one minute.
   b. Place 2,000 ml tap water in container.
   c. Suck 1.00 ml emulsion into pipette using suction bulb. Wipe off outside of pipette.
   d. Using suction bulb, blow emulsion into container.
   e. Rinse pipette by sucking in diluted emulsion solution and blowing out.
   f. Clean pipette with soap or solvent and water. Rinse with acetone.
   g. Stir diluted emulsion thoroughly.
   h. Rinse out tube to be used with the diluted emulsion three times and fill to top of circle.
   i. Calibrate spectrophotometer.
   j. Place diluted emulsion sample tube in spectrophotometer, cover and read %LT to nearest tenth.
   k. Repeat steps i. and j. until three identical consecutive readings are achieved.
   l. The elapsed time between addition of emulsion to dilution of water and final %LT reading should not exceed 5 minutes.

[5] Chemical Composition by ASTM Method D-2006-70:

$$\frac{PC + A_1}{S + A_2}$$

PC = Polar Compounds, A_1 – First Acidaffins, A_2 = Second Acidaffins, S = Saturated Hydrocarbons

The rejuvenating agent shall have a record 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. The contractor shall submit a manufacturer's certification that the material proposed for use is in compliance with the specification requirements. The contractor shall submit previous use documentation and test data conclusively demonstrating that; the rejuvenating agent has been used successfully and that the asphalt rejuvenating agent has been proven to perform, as heretofore required, through field testing 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 and reasonable life expectancy.

335-4.3 Material Performance.

335-4.3.1 Maltene Replacement: 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 effected shall be by analysis of the chemical properties the asphalt binder. The viscosity shall be reduced by a minimum of 25% for a pavement two years or less in age, and reduced by a minimum of 40% for a pavement greater than two years in age as determined by dynamic shear rheometer (DSR) method for asphalt testing in

accordance 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 inch of pavement. In addition, the treated areas shall be sealed in-depth to the intrusion of air and water. The City will require that untreated and treated core samples, a minimum of six inches in diameter, be removed by the Contractor at locations indicated by the City. The treated core sample shall be taken in the same lane in close proximity to each untreated sample. A minimum of one untreated and treated core sample shall be taken for each pavement group or one per 50,000 square yards of treated pavement in each pavement group.

335-4.3.2 Photocatalytic Properties (required for rejuvenator with titanium dioxide only)

335-4.3.2.1 Titanium Dioxide Penetration Test: The TiO_2 Enhanced Asphalt Rejuvenating Agent shall have a non-destructive analytical procedure applied to determine the percent of Titanium Dioxide nanoparticles present in each two-millimeter (2mm) layer of the field core sample matrix for a minimum depth of six millimeters (6mm) from the top of the treated sample core. The method of measurement shall be by fluorescent X-ray emitted from the surface when excited by a principal X-ray source that is exceptional for the given element. A hand-held XRF analyzer may be accepted for this testing. The minimum required concentration of Titanium Dioxide nanoparticles per each two-millimeter (2mm) section up to the minimum depth (6mm) shall be 2000 parts per million.

335-4.3.2.2 NO_2 Reduction: The TiO_2 Enhanced Asphalt Rejuvenating Agent shall be verified for the effectiveness of the air pollution remediation of the Titanium Dioxide nano-particle portion of by laboratory analysis of core samples extracted from the treated pavement as directed and required by the City. The cores shall be a minimum of four inches (4") in diameter and in pairs at each location directed by the City. The cores shall be tested by an accredited laboratory or university with the equipment and capability to perform the following test procedures. A photo reactor test chamber shall be employed that allow for the evaluation of the efficient photocatalytic reduction of introduced NOx gas of a known and controlled concentration within the chambers volume. The chamber light source shall be a UV lamp having a wavelength of 375 nanometers. The interior chamber environment shall be at 77ºF with a constant humidity of 55% ±5%. The test total duration shall be five hours. The analysis test system shall be based on a Japanese Industrial Standard (JIS) TR Z0018 "Photocatalytic Materials-Air purification test procedure". NO removal efficiency shall be measured using a Model 42i Chemiluminescence NO-NO2-NOx Analyzer (Thermo Fisher Scientific Inc.). The minimum NO reduction following the heretofore outlined test procedure evaluating field core samples shall average 25% for all cores tested.

335-4.4 Equipment.

335-4.4.1 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 0.04 to 0.5 gallons per square yard of surface, and with an allowable variation from any specified rate not to exceed 5% 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. The rate of application shall be controlled by an onboard computer control system designed to uniformly and consistently control the selected application rate in gallons per square yard regardless of the forward speed of the distributor truck. A check of distributor equipment as well as application rate accuracy and uniformity of distribution shall be made when directed by the City.

335-4.4.2 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 manufactured sand 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 City.

335-4.4.3 Calibration.

335-4.4.3.1 Distributor: Prior to construction, calibrate the distributor in accordance with ASTM D2995-99 in the presence of the City. The distributor shall be moving forward at the proper application speed at the time the spray bar is opened. If at any time a nozzle becomes clogged or not spraying a proper pattern, the operation shall be immediately halted until repairs are made.

335-4.4.3.2 Sand Truck. Prior to construction, calibrate the spreader in accordance with ASTM D5624-02, in the presence of the City. The allowable deviation in the amount of manufactured sand

spread on each of the rubber mats shall not exceed plus or minus 1 pound per square yard in the transverse direction, or plus or minus 1 pound per square yard in the longitudinal direction, from the design application rate.

335-4.5 Construction.

335-4.5.1 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.

335-4.5.2 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 40° 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 county. 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.

335-4.5.3 Preparation of Surface: The contractor will be responsible for blowing or sweeping the road immediately ahead of the application operation to make sure the road is free of standing water, dirt, loose aggregate and other debris. The surface shall be clean and dry prior to the application.

335-4.5.4 Application of asphalt rejuvenating emulsion: 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.

335-4.5.4.1 Material Placement: 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 application passes of the distributor truck. Before spreading, the asphalt rejuvenating agent shall be blended with water at the rate of two parts rejuvenating agent to one 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 0.04 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 shall receive an additional uniformly applied treatment of the asphalt rejuvenating emulsion as directed 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.

335-4.5.4.2 Material Placement: Test Strip for Application Rate: Prior to start of the project, the contractor shall perform test strip applications as directed by the engineer. Test strips shall be performed for each pavement group of similar age and type within the project area. The test strips shall be applied at a minimum width of 6 feet and for a length of 50 feet. A total of three test strips shall be applied at application rates of 0.04, 0.08 and 0.10 gallons per square yard, respectively. The time, in minutes, for essentially complete absorption of the asphalt rejuvenating emulsion shall be recorded for each test strip. The optimal rate to be used in a given area shall be that rate essentially absorbed within 30 minutes. In the event that all three of the standard test rates are absorbed completely within the 30 minute timeframe, then the Contractor and the Engineer shall agree on a fourth test strip application rate. Upon completion of the test strips for each pavement group, the Engineer will determine the final application rate to be applied to each pavement group.

335-4.5.4.3 Sanding/Blotting: After the rejuvenating emulsion has penetrated, and when recommended by the Contractor and approved by the Engineer, a coating of dry manufacture sand shall be applied to the surface in sufficient amount to protect the traveling public as required. All manufactured sand used during the treatment must be removed no later than 24 hours after treatment of a roadway. 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 emulsion. If, after

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

335-4.5.4.4 Handling of Asphalt Rejuvenating Agent: Contents in tank cars or storage tanks shall be circulated at least 45 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.

335-4.5.4.5 Street Sweeping: The Contractor shall be responsible for sweeping and cleaning of the streets after treatment. 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. 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.

335-4.6 Method of Measurement Basis of Payment.

Asphalt rejuvenation shall be paid unit price per square yard, completed and accepted. Such price and payment shall be full compensation for performing all work included in this section, and shall include the cost of all materials, equipment, labor and testing.

335-5 Rejuvenating Scrub Seal

335-5.1 Description

This work shall consist of furnishing all labor, equipment, material, supplies, and other incidentals necessary to provide an application rejuvenating scrub seal emulsion drag broom and cover coat aggregate as defined below. Meet the applicable requirements for plants, equipment, and construction requirements as defined below. Use asphalt emulsion and stone that meet the requirements of this specification.

335-5.2 Materials

335-5.2.1 Liquid bituminous material for surface treatment: Use CMS-1PC liquid bituminous material conforming to the requirements in Table 335-14. Contractor may substitute an alternative rejuvenating polymer bituminous material if approved, in advance, by the Engineer.

Table 335-14
Rejuvenating Scrub Seal

Material Designation - Cationic Asphalt Emulsion			
Emulsion Properties	Test	Min	Max
Viscosity, Saybolt Furol, 77° F (25° C), SFS	T59	50	350
Storage Stability Test, 24-h, %	T59		1
Oil Distillate, %	T59		0.5
Sieve Test, %	T59		0.1
Residue by Distillation[1] @ 350°F, %	T59	60	
Residue Properties from Distillation:	T59		
Penetration, 4°C (39.2°F), 200 g., 60 sec	T49	30	
Residue Properties from Low Temp Evaporation:	PP72-11, Procedure B		
MSCR @ 52°C, J_{nr} @ 3.2kPa	ASTM D7405		4.0
Polymer Properties:			
Swelling in rejuvenating agent, % max weight increase: 48 hours	ASTM D471 Mod[2]		40%
Tensile Strength, PSI	ASTM D412A Mod[3]	800	

Glass Transition Temperature (T_g) – Midpoint by DSC (°C)	ASTM D7426 Mod[4]	0	
Latex Density @ 23°C, (g/cm^3)	ASTM D6937 Mod[5]	1.00	1.05
Latex pH	ASTM E70 Mod[6]	6.0	8.0
Rejuvenating Agent Properties			
Flash Point, COC, °F	T48	380	
Viscosity, 140 °F, CST	T201	50	175
Saturate, % by weight	ASTM D2007		30
Asphaltenes	ASTM D2007		1.0
Test on Residue from RTFO			
Weight change, %w	ASTM D2872		6.5
Viscosity Ratio (RTFO/Orig.)	ASTM D2170		3

[1] 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] Modifications for Polymer Testing, Resistance to Swelling:

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

[5] 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 = (Wf - Wt) * 0.1
S.G. = D / 8.337
Where: Wf = Weight of filled cup (g)
Wt = Weight of empty cup (g)

[6] 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.

335-5.2.2 Aggregates: Use crushed granite #89 stone conforming to FDOT specifications Section 901. aggregate shall be washed, hard, durable, clean rock and free from coatings or deleterious material.

335-5.3 Equipment

335-5.3.1 Distributor: The distributor shall be self-powered and capable of providing a uniform application rate of emulsion varying from .05-1.00 gallon per square yard over a variable width up to the maximum width as required by the Engineer in a single pass. Distributor shall be self-powered and include a computerized application controls, a tachometer, pressure gauges, accurate volume devices, calibrated tank, and a thermometer for measuring temperatures of the emulsion in the tank.

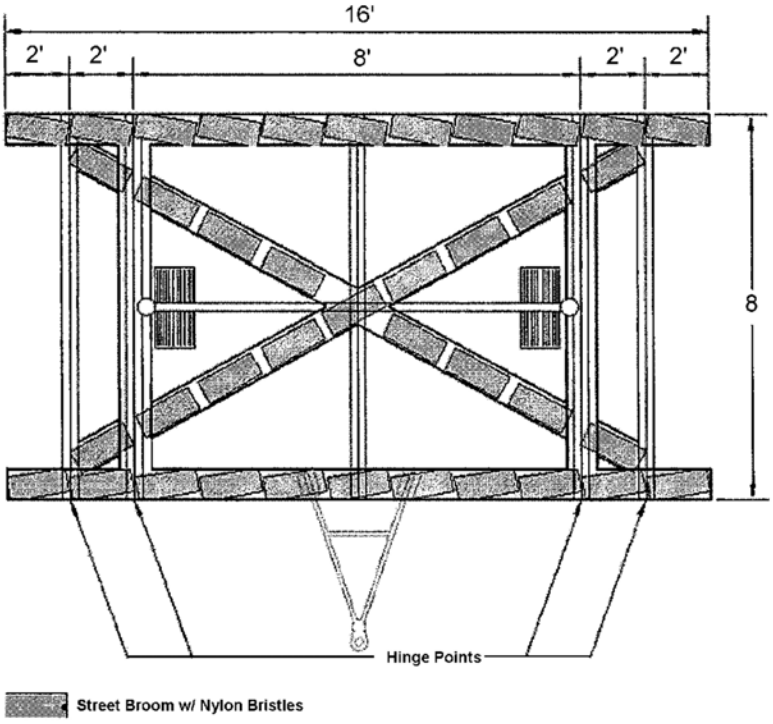
The distributor shall be equipped with ground speed control and a variable power unit for the pump and full circulation spray bars, which are adjustable laterally and vertically. Prior to construction, the nozzle angle shall be adjusted uniformly to 15 – 30 degrees at an angle to the axis of the spray bar, and the spray bar height shall be set to provide one hundred percent of triple coverage in a single pass. Where multiple lane passes will be required to complete the road width, overlapping passes must be four inches with fifty percent coverage so that the next pass will complete the full application rate specified. The longitudinal joints shall coincide with existing painted lane lines.

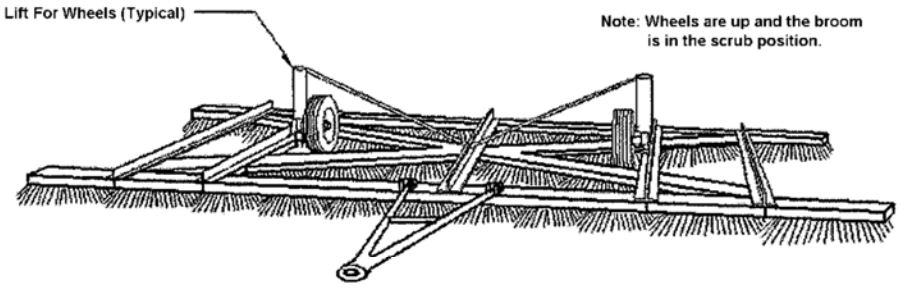
335-5.3.2 Aggregate Spreader: The aggregate spreader shall be self-propelled and supported by at least four tires on two axles capable of providing a uniform application rate of aggregate from five to fifty pounds per square yard over a variable width up the maximum width as required by the Engineer. The uniformity of this machine shall not vary by more than one pound per square yard. The aggregate spreader shall be equipped with the means of applying the cover aggregate to the surface with computerized application rate control so that the required amount of material will be deposited uniformly over the full width of the asphalt emulsion.

335-5.3.3 Scrub Broom: A scrub broom as described herein and depicted in the diagram below 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 below. 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.





Scrub Broom

335-5.3.4 Pneumatic Tire Rollers: Three (3) Self-propelled pneumatic tired rollers shall be used on the project. Pneumatic rollers are capable of ballast loading, either with water or sand, which allows the weight of the machine to be varied "from 10 to 16 tons" or "not more than 20 tons" to achieve the specified contact pressure which typically runs around 80 pounds per square inch. Tire pressure shall be specified by the manufacturer for the pneumatic tire rollers and shall not vary more than plus or minus 5.0 psi

335-5.3.5 Sweepers: Provide motorized brooms with a positive means of controlling vertical pressure and capable of cleaning the road surface prior to spraying bituminous material and removing loose aggregate after bituminous seal coating.

335-5.3.6 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 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.

335-5.4 General Construction Requirements

335-5.4.1 Layout: The Contractor will be responsible for the string lining and lay out of the roadway prior to surface treatment.

335-5.4.2 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 55°F.

335-5.4.3 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 surface treatement. The contractor shall be responsible for removal of 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.

335-5.4.4 Application of bituminous material: Prior to construction, calibrate the distributor in accordance with ASTM D2995-99 in the presence of the Engineer. Liquid bituminous material shall be applied at a rate of 0.20 – 0.50 gallons per square yard (depending on the composition of the roadway, surface texture and sized of aggregate in use to obtain proper embedment) 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.

The temperature of the asphalt emulsion when applied shall be between 140ºF and 180ºF. For smaller areas, the emulsion may be applied with a wand. The emulsion shall be immediately broomed to fill cracks and voids. The emulsion scrub broom shall be as described herein.

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.

335-5.4.5 Application of cover aggregate: The aggregate shall be applied within 1 minute of 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 to achieve proper embedment. Prior to construction, calibrate the aggregate spreader in accordance with ASTM D5624-02, in the presence of the Engineer. The allowable deviation in the amount of aggregate spread on each of the rubber mats shall not exceed ± 1 pound per square yard in the transverse direction, or ± 1 pound per square yard in the longitudinal direction, from the design application rate. Spreading shall be accomplished in such a manner that the tires of the trucks and aggregate spreader never contact the newly applied asphalt emulsion. The width of the aggregate spreader shall be equal to the width of the emulsion spread, except where additional passes are required. Areas, which are deficient in aggregate, shall be covered immediately with additional material. Previously used (sweeping) aggregates will not be allowed.

335-5.4.6 Mix Design: The contractor shall provide a mix design to the engineer at the Pre-Construction meeting to be approved prior to beginning work. The Modified Kearby design method or alternative method approved by the Engineer shall be utilized in determining application rates.

335-5.4.7 Mix Design Test Strip: Begin the rate of application for the bituminous material as determined by the approved bituminous seal coat design. Construct a short test strip 100 feet long to ensure the bituminous material application rate is adequate. After applying the bituminous material to this test strip, place the cover aggregate at the design application rate. Inspect the aggregate after rolling for proper embedment. Make adjustments to the rate of application, if necessary. Construct one full lane width at a time. Make additional adjustments to the rate of application during the Project, if needed.

335-5.4.8 Rolling: Initial chip seal rolling shall begin one (1) minute after the application of cover coat aggregate. Rollers shall work in tandem and complete a minimum of three passes with a sufficient overlap. Should the rolling operation be delayed, the aggregate and emulsion spreading shall be halted until the operation regains proper sequencing and timing. The maximum speed of the rolling operations shall be 5 miles per hour.

335-5.4.9 Sweeping: Excess aggregate shall be swept from the roadway and adjacent areas. Sweep off the surplus aggregate on the same day of the chip seal construction. Exercise care to not disturb aggregate that has set. Re-sweep areas the day after the initial sweeping. The Contractor will dispose of the surplus cover aggregate in a manner satisfactory to the Engineer.

335-5.5 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.

335-5.6 Quality Control.

335-5.6.1 General: The Contractor is responsible for quality control (QC) sampling and testing.

335-5.6.2 Chip Seal Aggregate:

335-5.6.2.1: Stockpile Production: Provide material gradation and quality test results taken during production. The testing rate for gradation is a minimum of one per day, or one per 1500 tons, whichever is greater.

335-5.6.2.2 Construction: Sample the cover aggregate once each production day. The aggregate sample will be taken from the chip spreader.

335-5.6.3 Asphalt Emulsion: Only asphalt emulsion from Certified Sources is allowed for use. Verify the application rate of the asphalt emulsion by dividing the volume of material used by the area of chip sealing for that day. Provide material certification and quality control test results for each batch of asphalt emulsion used on the Project. Include the supplier name, plant location, emulsion grade, and batch number on all reports.

335-5.7 Quality Assurance.

335-5.7.1 General: The County and Contractor are responsible for quality assurance (QA) sampling and testing. Samples cannot be from split samples and must be taken randomly by the Engineer.

335-5.7.2 Cover Aggregate:

335-5.7.2.1 Stock Pile Production: Test for gradation-the testing rate is a minimum of one per day, or one per 1500 tons, whichever is greater. If the material is hauled from the production site to a temporary stockpile, test at the temporary stockpile.

335-5.7.2.2 Construction: Sample the cover aggregate once each production day. The aggregate sample will be taken from the chip spreader. Samples will be stored and tested for gradation, at the Engineer's discretion. If the results vary from the requirements, the contractor will remove and replace the defective material placed as directed by the engineer to meet specifications.

335-5.7.3 Asphalt Emulsion: Sample the first daily shipment. Also, provide one sample for every 50,000 gallons (approximately 200 ton). The contractor shall provide sample containers and an independent testing laboratory for the emulsion test. The Contractor shall be responsible for the cost of the testing. The City reserves the right to test any shipment of emulsion. The contractor will remove and replace the defective material placed as directed by the engineer to meet specifications.

335-5.8 Method of Measurement & Basis of Payment: All labor, equipment and materials required by this section shall be included in the unit prices bid. The quantity to be paid shall be for all work placed and accepted by the City.

SECTION 337 ASPHALT CONCRETE FRICTION COURSES

337-6.1 FC-9.5 and FC-12.5

Mixture acceptance shall meet the requirements of 334-6.

337-7.8 Material Transfer Vehicle

The contractor shall utilize a remixing material transfer vehicle (example: Roadtec MTV1000 or Terex CR662RM) to allow for continuous paving and remixing or asphalt materials.

337-11 Method of Measurement

There will be no separate payment for the asphalt or unit price adjustment for binder material in the asphalt mix.

337-12 Basis of Payment

337-12.1 General

No composite pay factor will be paid. Material acceptance shall meet the requirements of 334-6.

SECTION 344 CONCRETE FOR LAP (OFF-SYSTEM) (REV 6-9-21) (FA 7-2-21) (7-22) MODIFIED

Delete Section 346 and Section 347 and replace with the following:

Mix designs may be utilized that have current approval by FDOT for use in the appropriate application for the appropriate class of concrete. Copies of approved concrete mix design shall be provided by the Contractor and shall be approved by the City prior to use.

344-1 Description.

344-1.1 General

Construct concrete based on the type of work as described in the Contract Documents and the concrete work categories as defined below.

344-1.2 Work Categories

Construction will fall into one of the following concrete work categories:

344-1.2.1 Concrete Work Category 1: Includes the construction cast-in-place non-structural concrete including sidewalks, curb and gutter, ditch and slope pavement, or other non-reinforced cast-in- place elements.

344-1.2.2 Concrete Work Category 2: Includes the construction of precast and prestressed concrete products.

334-1.2.2.1 Precast Concrete Drainage Structures: Includes but are not limited to reinforced and non-reinforced concrete pipes, french drains, underdrains, inlets, manholes, junction boxes, endwalls, pipe culverts, storm sewers, and box culverts.

334-1.2.2.2 Incidental Precast/Prestressed Concrete Structures: Includes the fabrication, storage, transportation, and erection of prestressed concrete poles, concrete bases for light poles, highway sign foundations, retaining wall systems, traffic separators, sound barriers or other structural precast elements.

344-1.2.3 Concrete Work Category 3: Includes the work associated with the placement and/or construction of structural cast-in-place concrete meeting the requirements of this section.

344-2 Materials.

344-2.1 General

Use concrete composed of a mixture of Portland cement, aggregates, and water, with or without chemical or mineral admixtures that meet the following requirements:

344.2.1.1 Portland Cement: Portland cements meeting the requirements of AASHTO M-85 or ASTM C-150 is required. Different brands of cement, cement of the same brand from different facilities or different types of cement shall be stored separately and shall not be mixed.

344.2.1.2 Coarse and Fine Aggregates: Aggregates shall meet ASTM C 33. Source approval by the FDOT is required.

344.2.1.3 Water: Water shall meet the requirements of ASTM C 1602.

344.2.1.4 Chemical Admixtures: Chemical admixtures shall be listed on the FDOT Appoved Products List. Admixtures may be added at the dosage rates recommended by the manufacturer.

344.2.1.5 Types of Cement: Unless a specific type of cement is designated in the Contract Documents, use Type I, Type IL, Type IP, Type IS, Type II, Type II (MH) or Type III cement in all classes of concrete. Use Type IL or Type II (MH) for all mass concrete elements.

344.2.1.6 Supplementary Cementitious Materials shall meet the requirements of ASTM C618 and ASTM C989, respectively. Fly ash shall not include the residue resulting from the burning of municipal garbage or any other refuse with coal, or the burning of industrial or municipal garbage in incinerators.

344-3 Production, Mixing and Delivery of Concrete.

344-3.1 Concrete Production Requirements

344.3.1.1 Category 1: Use a concrete production facility that is listed on the FDOT list of non-structural concrete producers. Concrete production facilities listed on the FDOT Producers with Accepted QC Programs list for structural concrete may also be used for Category 1.

344.3.1.2 Category 2: Obtain precast concrete products from plants that are currently on the FDOT's Production Facility Listing for the types of products that they are producing.

344.3.1.3 Class 3: Obtain structural concrete from a plant that is currently on the FDOT's Production Facility Listing for structural concrete.

344-3.2 Classes of Concrete: Meet the requirements of Table 344-1.

Table 344-1 Master Proportion Table [7]				
Class of Concrete	28-day Specified Minimum Compressive Strength (f_c') (psi)	Maximum Water to Cementitious Materials Ratio (pounds per pounds)	Minimum Total Cementitious Materials Content (lb/yd^3)	Target Slump Value (inches) [3]
Category 1				
Class NS	2,500	N/A	N/A	N/A
Category 3				
I [1]	3,000	0.53	470	3 [2]
I (Pavement)	3,000	0.50	470	1.5 or 3 [5]
II [1]	3,400	0.53	470	3 [2]
II (Bridge Deck)	4,500	0.44	600 [8]	3 [2]
III [4]	5,000	0.44	600 [8]	3 [2]
III (Seal)	3,000	0.53	600 [8]	8
IV	5,500	0.41[6]	600 [8]	3 [2]
IV (Drilled Shaft)	4,000	0.41	600 [8]	8.5
V (Special)	6,000	0.37 [6]	600 [8]	3 [2]
V	6,500	0.37 [6]	600 [8]	3 [2
VI	8,500	0.37 [6]	600 [8]	3 [2]
VII	10,000	0.37 [6]	600 [8]	3 [2]

Notes:
(1) For precast three-sided culverts, box culverts, endwalls, inlets, manholes and junction boxes, the target slump value and air content will not apply. The maximum allowable slump is 6 inches, except as noted in (2). The Contractor is permitted to use concrete meeting the requirements of ASTM C478 (4,000 psi) in lieu of the specified Class I or Class II concrete for precast endwalls, inlets, manholes and junction boxes.
(2) The Engineer may allow a maximum target slump of 7 inches when a Type F, G, I or II admixture is used. When flowing concrete is used, meet the requirements of Section 8.6 of the FDOT Materials Manual.
(3) For a reduction in the target slump for slip-form operations, submit a revision to the mix design to the Engineer. The target slump for slip-form mix is 1.50 inches.
(4) When precast three-sided culverts, box culverts, endwalls, inlets, manholes or junction boxes require a Class III concrete, the minimum cementitious materials content is 470 pounds per cubic yard. Do not apply the air content range and the maximum target slump shall be 6 inches, except as allowed in (2).
(5) Meet the requirements of Section 350 of FDOT Specifications.
(6) When silica fume or metakaolin is required, the maximum water to cementitious material ratio will be 0.35. When ultrafine fly ash is used, the maximum water to cementitious material ratio will be 0.30.
(7) Tolerance for slump is ± 1.5 inches and Air Content range is 0.0% to 6.0%.
(8) The minimum total amount of cementitious materials content of 600 pounds per cubic yard is required for extremely aggressive environment. For moderately and slightly aggressive environments, the required amounts are 550 lb/yd^3 and 510 lb/yd^3, respectively.

344-3.3 Contractors Quality Control: For Categories 1 and 2, assume full responsibility for controlling all operations and processes such that the requirements of these Specifications are met at all times.

For Category 3, furnish a Quality Control (QC) plan to identify to the Engineer how quality will be ensured at the project site. During random inspections, the Engineer will use this document to verify that the construction of the project is in agreement with the QC plan.

344-3.4 Concrete Mix Design: For all categories, submit to the Engineer for approval, FDOT approved mix designs. Do not use concrete mix designs without prior approval of the Engineer.

Materials may be adjusted provided that the theoretical yield requirement of the approved mix design is met. Show all required original approved design mix data and batch adjustments on an Engineer approved concrete delivery ticket.

344-3.5 Delivery: For Category 3, the maximum allowable transit time of concrete is 90 minutes. For critical placements, with the Engineer's approval, the transit time may be extended to the allowable mixing time shown in the mix design.

Furnish a delivery ticket on a form approved by the Engineer with each batch of concrete before unloading at the placement site. Record material quantities incorporated into the mix on the delivery ticket. Ensure that the Batcher responsible for producing the concrete signs the delivery ticket certifying that the batch was produced and delivered in accordance with these requirements. Sign the delivery ticket certifying that the concrete was placed in accordance with these requirements.

344-3.6 Placing Concrete:

344.3.6.1 Placing Concrete in Cold Weather: Do not mix or place concrete when the air temperature at placement is below 40°F.

During the curing period, if NOAA predicts the ambient temperature to fall below 35°F for 12 hours or more or to fall below 30°F for more than 4 hours, enclose the structure in such a way that the air temperature within the enclosure can be kept above 50°F for a period of 3 days after placing the concrete or until the concrete reaches a minimum compressive strength of 1,500 psi.

Assume all risks connected with the placing and curing of concrete. Although the Engineer may give permission to place concrete, the Contractor is responsible for satisfactory results. If the placed concrete is determined to be unsatisfactory, remove, dispose of, and replace the concrete at no expense to the City.

344.3.6.2 Placing Concrete in Hot Weather: For Category 3, hot weather concreting is defined as the production, placing and curing of concrete when the concrete temperature at placing exceeds 86ºF but is less than 100ºF.

Spray reinforcing bars and metal forms with cool fresh water just prior to placing the concrete in a method approved by the Engineer.

Assume all risks associated with the placing and curing of concrete. Although the Engineer may give permission to place concrete, the Contractor is responsible for satisfactory results. If the placed concrete is determined to be unsatisfactory, remove, dispose of, and replace the concrete at no expense to the City.

Unless the specified hot weather concreting measures are in effect, reject concrete exceeding 85ºF at the time of placement. Regardless of special measures taken, reject concrete exceeding 100ºF. Predict the concrete temperatures at placement time and implement hot weather measures to avoid production shutdown.

344-3.7 Mixers: For Category 3 concrete, do not place concrete from a truck mixer that does not have a current FDOT mixer identification card.

344-3.8 Small Quantities of Concrete: With approval of the Engineer, small quantities of concrete, less than 3 cubic yards placed in one day and less than 0.5 cubic yards placed in a single placement may be accepted using a pre-bagged mixture. The Engineer may verify that the pre-bagged mixture is prepared in accordance with the manufacturer's recommendations and will meet the requirements of this Specification.

344-3.9 Sampling and Testing:

344.3.9.1 Category 1: The Engineer may sample and test the concrete to verify its quality. The minimum 28 day compressive strength requirement for this concrete is 2,500 psi.

344.3.9.2 Category 2: No sampling and testing is required for category 2.

344.3.9.3 Category 3: The Engineer will randomly select a sample from each LOT to determine its plastic properties and to make three 4 x 8 inch cylinders for testing by the Engineer at 28 days to ensure that the design compressive strength has been met for the class of concrete as specified in Table 344-1. A LOT is defined as the concrete placement of 200 cubic yards or one day's production, whichever is less.

344-3.10 Records: Ensure the following records are available for review for at least 3 years after final acceptance of the project:

1. Accepted concrete Plant QC Plan
2. Approved concrete mix designs.

3. Materials source (delivery tickets, certifications, certified mill test reports).
4. A copy of the scale company or testing agency report showing the signature of the scale company representative, date of inspection, observed deviations from quantities checked during calibration of the scales and meters.
5. A copy of the documentation certifying the admixture weighing/measuring devices.
6. Aggregate moisture control records including date and time of test.
7. Manufacturer's mixer information.
8. Certification documents for admixture weighing and measuring dispensers.
9. A daily record of all concrete batched for delivery to the projects, including respective mix design numbers and quantities of batched concrete.

344-4 Acceptance of Work.

344-4.1 Category 1 Work: Category 1 work will be accepted based on certification by the batcher and contractor on the delivery ticket.

344-4.2 Category 2 Work: Certify that the precast elements were produced by production facilities that are currently on the FDOT's Production Facility Listing for the types of products that they are producing. In addition, the producer's logo shall be stamped on the element. The producer shall not use the Florida Department of Transportation QC stamp on elements used on this project. Provide a statement of certification from the manufacturer of the precast element that the element meets the requirements of this Specification.

344-4.3 Category 3 Work: Category 3 concrete will be accepted based on the Engineer's test results for plastic properties and compressive strength requirements for the class of concrete as defined in Table 344-1. In addition, a Delivery Ticket as described in 344-3.5 will be required for acceptance of the material at the project site.

344-4.4 Small Quantities of Concrete: Category 3 concrete meeting the definition of 344-3.8 will be accepted in accordance with 344-4.3 based on test results for plastic properties and compressive strength.

344-5 Method of Measurement.

The quantities to be paid for will be the items shown in the plans, completed and accepted.

344-6 Basis of Payment.

Prices and payments will be full compensation for all work and materials specified in this Section.

SECTION 520 CONCRETE GUTTER, CURB ELEMENTS AND TRAFFIC SEPARATOR

This section will be primarily used for concrete curb and gutter point repairs and replacement.

SECTION 522 CONCRETE SIDEWALK AND DRIVEWAYS

This section will be primarily used for concrete sidewalk, driveway and curb ramp point repairs and replacement. All curb ramps will require field engineering to meet ADA requirements; field engineering shall be included in the unit price bid.

Any and all final sidewalk in excess of a 2% cross slope, regardless of any interim phase inspection acceptance, shall be replaced at the Contractor's expense. No tolerance in excess of 2% will be accepted.

All ADA ramps shall be constructed with 6" thick concrete including a 6" concrete base beneath detectable warning areas. All 6" thick concrete (ramps, driveways, turnouts, etc.) shall require 6x6 WWM or 1.5 lb polypropylene fiber mesh per CY.

SECTION 527 DETECTABLE WARNINGS

527-2 Materials

Detectable warning surfaces outside of FDOT right-of-way shall be clay or concrete red brick. No post-applied materials or wet-set materials are acceptable.

527-4 Method of Measurement

Detectable warning surfaces placed in newly constructed sidewalk/curb ramps outside of FDOT right-of-way will be paid by the square foot furnished, installed and accepted.

527-5 Basis of Payment

Pay Item – Detectable Warning Surface – per SF

SECTION 570 PERFORMANCE TURF

570-3.2 Seeding

The Contractor shall furnish to the City Inspector, prior to placement of any seed, a certification from the Florida Department of Agriculture and Consumer Services Division of Plant Industries, stating that the seed is free of noxious weeds, including tropical soda apple. All seed materials shall be subject to inspection by the City Inspector prior to placement. Any sod with noxious weeds and grasses, including tropical soda apple, shall be rejected for use on the project.

570-3.3 Sod

Any portion of the existing right-of-way, including all easements, that is disturbed outside the limits of construction shall be sodded at the Contractor's expense as directed by the City Inspector. The Contractor shall furnish to the County Inspector, prior to placement of any sod, a certification from the Florida Department of Agriculture and Consumer Services Division of Plant Industries, stating that the sod is free of noxious weeds, including tropical soda apple. All sod materials shall be subject to inspection by the County Inspector prior to placement. Any sod with noxious weeds and grasses, including tropical soda apple, shall be rejected for use on the project.

Contractor may elect to use hydroseed in lieu of sod. Contractor shall be responsible to maintain erosion control on areas that are stabilized with hydroseed. The City shall not make payment for redressing of areas the Contractor elects to place hydroseed due to erosion.

SECTION 660 VEHICLE DETECTION SYSTEM

All loops shall be 30 ft in length unless otherwise noted in the plans.

SECTION 665 PEDESTRIAN DETECTOR SYSTEM

All detectors shall have solid state switch, momentary LED and tone (ex. Polara Engineering (Bulldog) BDL3 Series).

SECTION 700 HIGHWAY SIGNING

Generally: All signage shall be attached to posts with stainless steel bolts and vandal proof stainless steel nuts.

Posts: When the Contractor has the option for sign post type, the sign post type shall be uni-strut square post for street name assemblies and 2 lb/lf u-channel posts for all other sign types. Uni-strut post shall be embedded 3.5 ft into the ground and u-channel post shall be embedded 3 ft into the ground.

Post Installed in Concrete – The following minimum standards shall be followed:

1. A 6 inch long, 8 inch round, schedule 40 PVC pipe shall be buried so it is thru the entire concrete pour and each end is open and accessible.
2. The top opening of the sign tube shall be flush with the surface of the sidewalk and empty of debris for the entire length.
3. Duct tape shall be applied over the top prior to a post being installed so debris cannot enter the opening.
4. The pipe shall be buried not driven into the ground.
5. The pipe shall be installed before the concrete pour and the concrete poured around the pipe, leaving the top of the pipe exposed for sign installation.

Post Installed in Brick – The following minimum standards shall be followed:

1. A 6 inch long, 8 inch round, schedule 40 PVC pipe is to be buried.
2. The top opening of the sign tube shall be flush with the surface of the brick sidewalk and empty of debris for the entire length.
3. Duct tape shall be applied over the top prior to a post being installed so debris cannot enter the opening.
4. If a concrete base is poured for the bricks the PVC tube is to go the length of the bricks and the concrete so there is an opening of the tube at the top and one at the bottom below the concrete.

5. The pipe shall be installed before the concrete pour and the concrete poured around the pipe, leaving the top of the pipe exposed for sign installation.

Post Mounted Street Name Signs – The following minimum standards shall be followed:

1. Four (4) blanks shall be provided per intersection
2. One-half inch border matching the letter color shall be provided around the perimeter
3. Letters shall be 6 inch – series "B"
4. Supercript letters shall be 2-3/4 inch – series "C"
5. Shall be centered and bolted on post with signs back-to-back with the post between them. Signs shall be riveted together on each end. Rivet shall be in the center of the sign and on-half inch from the outer end.
6. Attach to post, above the stop sign with primary street sign on top of post with cross (secondary) street sign below the primary sign.

SECTION 710 PAINTED PAVEMENT MARKINGS

This section will primarily be utilized to place striping on new asphalt or surface treated pavements and shall include any layout effort.

SECTION 711 THERMOPLASTIC PAVEMENT MARKINGS

This section will primarily be utilized to place striping on new asphalt or surface treated pavements and shall include any layout effort.