ADDENDUM NO. 2
To the Plans and Specifications for:

Seminole City Center Roadway Improvements

City of Seminole

1. BID DATE: NO CHANGE

MONDAY, MARCH 8, 2021 @ 11:00 A.M.

2. TECHNICAL SPECIFICATIONS:

TS.1 **Section 02400 – Full Depth Reclamation**

This section has been revised and reissued.

3. PLANS: NO CHANGE

4. RESPONSE TO SUBMITTED QUESTIONS

RSQ.1 Please comment if asphalt may be used for the curb pad.

The Contractor may utilize an asphalt curb pad in lieu of the crushed concrete curb pad. This substitution, if pursued, shall be made at no additional cost to the City.

RSQ.2 Can you clarify typical section #4 with regards to "Dense Material Below Proposed Base To Remain In Place"? Is this material stabilized? Is the contractor to stabilize? Please clarify.

Stabilization is not proposed as the roadway's proposed structural number is adequate without a stabilized subgrade. The above-referenced callout is intended to minimize excavation below the proposed bottom of base elevation to ensure that this dense material can remain in place.

RSQ.3 Can you verify the UM for concrete driveway restoration? Bid sheet has SF, this would usually be a SY item.

Please utilize the unit of measurement for concrete sidewalks as presented.

RSQ.4 I do not see a contingency line item in the bid, will there be a contingency item placed in this bid package?

A contingency line item is not anticipated.

RSQ.5 What testing shall be borne by the contractor?

All testing shall be borne by the Contractor.

RSQ.6 There is no item for Survey or As-Builts, shall this be placed in the Mobilization Item?

The Contractor may place costs for survey layout and record drawing preparation within the mobilization pay item.

RSQ.7 Is a temporary field office a requirement of this project (Mobilization Specification)?

A temporary field office will not be required.

RSQ.8 There is not a definitive laydown area directly adjacent to this project site, can you provide us with a laydown/storage area of sufficient size?

Item GC.7 in Addendum No. 1 identified where City-controlled lands are available for staging. No additional property permissions have been provided.

RSQ.9 Just to clarify, the Recycled Concrete Aggregate item shall not be used to pay for the material under the proposed curbing, correct?

This is correct. The curb pad is to be included in the curb pay item.

RSQ.10 Can an MOT plan for each street be provided along with a projected sequence of construction that the City requires?

The Contractor is required to prepare, furnish, erect and maintain the Maintenance of Traffic Plan associated with the improvements. Please allow the following to supplement the requirements set forth within the plans and specifications:

Johnson Blvd.

The Contractor will be permitted to close two (2) of the four (4) travel lanes at any time. One (1) lane shall remain open in either direction at all times.

80th Ave.

Closure of the eastbound lane will be permitted. Westbound travel lane shall remain open at all times during construction.

Liberty Lane

The City will permit closure of the roadway and the Contractor to limit access to only local traffic. Concurrent closures of the Temple Terrace / Liberty Lane intersection and Johnson Blvd. / Liberty Lane intersection will not be permitted. However, the City will permit for the Contractor to route traffic on base material. Needed repairs shall be made to the base prior to paving.

Addendum No. 1 stated that at least one (1) driveway of Freedom Square shall remain in full service at all times. This requirement remains in force and pertains to each unit as opposed to the overall Freedom Square development.

Addendum No. 1 stated that all coordination efforts with PSTA will be led by the City. This coordination effort pertains to shelter removal and replacement and general construction items and does not absolve coordination requirements associated with the Maintenance of Traffic Plan. PSTA construction personnel will be invited to the Pre-Construction Meeting and are aware of the project requirements.

Please reference the Maintenance of Traffic specification to view specific parties in which coordination is needed in the event of a road closure. Adjacent property owners shall also be included within this coordination effort. Such coordination shall be performed for single lane closures in addition to full road closures. This coordination shall be done through the use of door hangers in addition to individual property owner outreach.

RSQ.11 Under Maintenance of Traffic Section of General Notes (Sheet C2) it states we are to have 2 variable message boards for the duration of the project, where will these be situated?

The location of the variable message boards will be vary depending on phase of construction.

RSQ.12 Will it be required to finish each street individually (work in each bid schedule) prior to starting on another street?

The City will permit for the 80th Avenue and Johnson Blvd. improvements to run concurrently so long as the above-stated maintenance of traffic requirements are implemented into the plan. However, Liberty Lane and Johnson Blvd. shall not be constructed concurrently. Revisions to this requirement must be approved in writing by City officials.

RSQ.13 Can the existing utilities requiring adjustment within the Parkway Grading item be quantified for bidding purposes?

Itemization has not been provided at this time.

RSQ.14 Is it anticipated that there will be existing irrigation that will require fixes, relocation, or (re)installation? If so, where shall cost for this be placed?

Irrigation facilities have not been mapped throughout the project limits. However, a degree of irrigation system impact is anticipated. Restoring existing irrigation systems shall be a component of the project and correlated to the pay item the Contractor deems appropriate.

RSQ.15 Can you tell me what the contract time is for this project?

Please note that the Construction Agreement provided within Addendum No. 1 identifies the start and completion dates for the project. This equates to a contract time of 172 days.

5. GENERAL CLARIFICATION / INFORMATION:

GC.1 Detectable warning surfaces shall be yellow.

CITY OF SEMINOLE

February 26, 2021

Section 02400
Full Depth Reclamation

Part 1 General

1.01 Description

A. Scope - This work shall consist of the preparation of a base course constructed by in-place pulverizing and blending of the existing bituminous pavement and predetermined portion of the underlying base materials, and the introduction of asphalt emulsion or foamed asphalt, cement and other additives. Pulverize existing asphalt pavement and base material by a method that does not damage the material below the design depth as shown on the plans.

1.02 Quality Assurance

A. Qualifications

The full depth reclamation Contractor will provide a list of similar projects with owner's contact information and project location in which a minimum of three projects of a minimum of 7,000 SY each of full depth reclamation has been constructed using either emulsion or cement stabilization within the past three years from the date of the submittal of bid. Include documentation that indicates the specification criteria of each project was met without significant time delays or cost overruns.

1.03 Mix Design

Prior to construction, obtain an adequate number of core samples to develop the mix design(s). Representative samples of the asphalt pavement material, underlying base material, and virgin materials, where applicable, shall be supplied to a nationally accredited laboratory with no affiliation to the emulsion supplier, for testing to determine the proportions of asphalt emulsion and cement needed to produce a mix design meeting the requirements below. The optimum binder content shall be the binder content that results in the highest wet tensile strength while also having 70% retained tensile strength compared to the dry strength and additionally has a minimum 2500 pounds Marshall stability. Cement shall be used at a minimum dosage rate of 1% and at a maximum dosage rate of 2.5% by dry weight of reclaimed material. Cement amounts greater than 2.5% will only be allowed if approved by the engineer. The mix design shall be signed and sealed by a professional engineer and submitted to the Engineer prior to use for approval.

Mix Design Criteria		
Test	Test Method No.	Criteria
Reclaimed Material Gradation	AASHTO T 27-11	Report
Optimum Binder Content Determination		
Compaction effort at optimum fluids content. Marshall Compactor; 50 blows/side or Superpave Gyratory Compactor, 100 mm diameter specimens, 30 gyrations. Density determination.	Asphalt Institute MS 14, Appendix F. ASTM D6926-10 AASHTO T 312-12 FM 1-T 166	Report
Marshall stability Cure at 60°C to constant weight. Test at 40°C.	ASTM D6927-06	2,500 lbs. minimum Marshall stability
Resistance of compacted bituminous mixture to moisture induced damage. 55 to 75% vacuum saturation, water bath at 25°C for 23 hours	AASHTO T 283-07 (2011) with modification of Marshall stability instead of tensile	70% minimum retained Marshall stability

Part 2 Products

2.01 Materials

A. Asphalt Emulsion

1. If the mix design calls for stabilization with asphalt emulsion, utilize CSS-1h or CMS-2h, meeting the requirements of AASHTO M 208-01 (2009)

B. Foamed Asphalt

1. If the mix design calls for stabilization with foamed asphalt utilize an asphalt binder meeting the requirements of Section 916 of the FDOT's SSRBC and listed on the FDOT's Approved Products list (APL).

C. Water

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

D. Portland Cement

1. Portland cement in either a dry or slurry form shall be added to the reclaimed mixture. Slurry made from Portland cement shall contain a minimum of 30% dry solids content. Cement used for full depth reclamation shall be Type I or II and comply with Section 921 of the FDOT's SSRBC.

E. Additional Base Materials

1. Additional base material, if needed, shall be recycled concrete aggregate meeting the requirements of Section 285 of the FDOT's SSRBC.

F. Reclaimed Asphalt Pavement

1. Materials must meet all requirements specified in the 2017 Florida Department of Transportation Standard Specifications for Road and Bridge Construction 283-2, except that 98% of all material is required to pass through a 50 mm (2 inch) sieve.

G. Soil

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

2.02 Equipment

A. Road Reclaimer

1. Utilize a road reclaimer specifically designed for pavement reclaiming and capable of pulverizing and mixing pavement, base materials, and subgrade soil to a depth of 20 inches. It shall have the capability of introducing and metering additives uniformly and

accurately and have positive displacement pumps which can accurately meter the planned amount of asphalt emulsion or foamed asphalt into the mixture. The reclaiming machine shall mix the emulsified or foamed asphalt additive thoroughly with the RAP and soil materials. The pump shall be mechanically or electronically interlocked with the ground speed of the machine. The asphalt metering system and water metering system shall be capable of continuously monitoring (GPM) flow and totaling the quantity of water and asphalt applied into the mixing chamber. Additives shall be uniformly distributed and mixed with the pulverized material, any existing underlying material as specified.

B. Cement Spreader

1. Ensure cement is spread uniformly and accurately during the reclamation process with an Integrated binder spreader system, capable of spreading in various widths by opening or closing panels and micro processer-controlled metering cells for precise metering of the cement. The spreader shall be mounted on the Road Reclaimer, have digital and automated controls and be dust free. Cement will not be allowed to be spread with spreader bars from a tanker. Minimize the amount of airborne cement dust to the satisfaction of the Engineer and in accordance with OSHA regulations.

C. Motor Grader

1. Utilize a motor grader of sufficient size and horsepower to adequately rough grade the pulverized base and finish grade the mixed and compacted base. The equipment shall be in good working order free from leaks and capable of maintaining an accurate grade and cross-slope.

D. Rollers

1. Shall be in good working order free from leaks and capable of compacting the mix to the requirements of this specification: Vibratory rollers shall be a minimum of 10 tons and capable of rolling in either vibratory or static mode. Three wheel static rollers shall be a minimum of 11 tons. Pneumatic tire rollers shall have a minimum of 9 oscillating wheels with smooth, low pressure tires (pressure shall be equally matched in all tires within 5 PSI) and weigh at least 28 tons. Initial compaction shall be accomplished by either single or dual drum vibratory or three wheel roller static rollers.

E. Additional Equipment

1. Additional equipment will be needed to complete the operations required by this technical provision. All equipment necessary for the successful completion of projects governed by this technical provision shall be included in the unit costs associated herein. Availability of quality assurance devices (such as a 10' straight edge) shall be the responsibility of the Contractor.

Part 3 Execution

3.01 Layout

The Contractor will be responsible for the string lining and layout of the roadway prior to paving. Elevations of the existing roadway must be referenced at sufficient intervals to ensure the roadway elevation is constructed in accordance with the Contract Documents. Where elevations are not provided, the roadway elevation shall match existing.

3.02 Weather & Seasonal Limitations

Do not mix or place the base while the air temperature is below 40°F or when conditions indicate that the temperature may fall below 40°F within 24 hours. Do not mix or place the base when the weather is foggy or rainy or when the soil or subgrade is frozen.

3.03 Widening

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

Place approved base material (per above material requirements) onto the existing pavement so it can be mixed in with the existing pavement and base material during the pulverization operation to make a homogeneous base course across the entire width of the road, including the widening area. Correct all areas of irregular grade or deficient thickness and remove and replace material contaminated with soil, organic material, or debris.

3.04 Additional Material

When additional material is to be added to correct cross slope deficiencies or change elevation as directed by the Engineer, use base material per above material requirements placed on the roadway prior to the final pass for pulverization and mix uniformly with the existing material.

3.05 Pulverization

Pulverize and blend the existing pavement and base material to the depth required so that all of the material shall be uniformly graded in accordance with AASHTO T 27-11 to meet the requirements of the below table

Gradation Requirements for Pulverized Material	
Sieve Size	*Percent Passing (Min.)*
3 Inches	100
2 Inches	98-100
No. 200*	0 to 20

* For asphalt emulsion, the maximum allowable percent passing the No. 200 sieve is 20%.

Material gradation may vary due to local aggregates and conditions. A minimum of two passes of the reclaimer is required. Additional passes may be necessary to achieve the required gradation.

Remove pulverized material to the depth shown on the plans.

Introduce the asphalt emulsion or foamed asphalt into the mix through the reclaimer uniformly and accurately metered such that areas are of equal consistency and moisture content. Combine the reclaimed material, cement and additives in place to meet the requirements specified in such proportions that the reclaimed mixture is of acceptable composition and stability. Before the start and at the end of each day's work and at any time requested, permit the Engineer access to the mixing equipment in order to read the meter to verify the quantity of asphalt emulsion applied during the day's work. Make field adjustments, as necessary, to the mix design under the guidance of a knowledgeable and competent technician or superintendent to obtain a satisfactory reclaimed mixture of consistent composition and stability throughout the project.

3.06 Compaction

After the material has been processed, compact the base course to the lines, grades, and depth required. Apply water as necessary to ensure optimum moisture content at the time of mixing and compaction.

Construct a control strip of not less than 1000 feet to develop proper rolling/compaction patterns and methods to obtain the required density. Obtain density readings using a nuclear gauge in accordance with FM 1-T 238, while witnessed by the Engineer. Whenever there is a change in the reclaimed material, compaction method, equipment, mix design, or unacceptable results occur, construct a new control strip of the same length, as determined by the Engineer. Control strips failing to meet specification criteria may be required to be reworked, as determined by the Engineer. Acceptance of the control strips shall be obtained prior to continuance with production.

Furnish the proper number, weight and type of rollers to obtain the required compaction of the reclaimed material. Begin rolling at the low side of the course, except leave three to six inches from any unsupported edge or edges unrolled initially to prevent distortion. Compact the base course to a field dry density (i.e. corrected gauge wet density) of at least 96.0 percent of the maximum laboratory dry density.

Correct any reclaimed base shoving, rutting, or other unacceptable displacement. Take care in rolling the edges of the reclaimed mixture so the line and grade of the edges are maintained.

At the end of each day's production, construct a transverse joint formed by a header or by cutting back into the compacted material to form a true vertical face free of loose material. Protect construction joints so that the placing, spreading, and compacting of base material will not damage previous work. Where it is necessary to operate or turn any equipment on the completed base course, protect and cover the finished surface using mats or wood planks to prevent damage.

3.07 Thickness

Construct the base to a daily average thickness within 1/2 inch of the plan thickness. Individual measurements may deviate from the plan thickness by 3/4 inch. Measure the thickness while being witnessed by the Engineer. When the thickness is not within the tolerances given, the Engineer will evaluate the area and determine if it shall be reconstructed at the Contractor's expense or the deficiency deducted from the total material in place.

3.08 Finishing

After completing all base course operations, assure the base course conforms to the required lines, grades, and cross section. If necessary, lightly scarify the surface to eliminate any imprints made by equipment and then recompact the surface to the required density. Correct all irregularities grater than ½” over ten feet to the satisfaction of the Engineer.

3.09 Protection & Curing

Protect and cure the completed base course by applying a prime coat at a rate of 0.10 to 0.15 gallons per square yard. Apply the prime coat after the completion of finishing operations but prior to opening to traffic (this shall be done within 24 hours). Keep the finished base course continuously moist until the prime coat is placed. At the time the prime coat is applied, ensure the surface is dense, free of all loose and extraneous material, and contains sufficient moisture to promote proper penetration of the bituminous material. Apply water in sufficient quantity to fill

the surface voids immediately before the bituminous curing material is applied. Prime coat shall meet the requirements of Section 300 of the FDOT's SSRBC.

To prevent equipment from marring or damaging the completed work, protect finished portions of base used by equipment.

Do not allow traffic on the reclaimed base until it is assured the reclaimed base surface will not distort, shove, or ravel under the anticipated vehicular loading. Apply sand to primed surface and broom off excess sand to install temporary striping prior to opening to traffic.

3.10 Field Quality Control

Perform the following quality control tests at the prescribed frequency. Correct all deficiencies unless otherwise approved by the Engineer.

Prior to performing testing, the Contractor shall provide a figure depicting the testing locations for review and approval.

Reclaimed Base Material Gradation

Determine the percent passing the following sieve sizes: 3 inches, 2 inches, No. 4 and No. 200. Obtain a sample at a frequency of one sample per 3,500 SY (not less than once per day) and confirm compliance with gradation table contained within this specification. Adjust the pulverization operation as needed to meet the specification. A 20 pound (min.) sample shall be tested.

Moisture /Density Relationship of Reclaimed Base

Establish a wet/dry density relationship for density specification compliance by obtaining a sample at the location of each nuclear density measurement, at a frequency of once per 3,500 SY (not less than once per day). Determine moisture content in accordance with FM 1-T 180.

In-Place Field Density

Perform one nuclear density test per 1,000 SY (not less than once per day). The dry field density (i.e. the corrected gauge wet density) of the compacted mixture shall be at least 98% of the maximum laboratory dry density. No individual density test shall be lower than 95% of the maximum laboratory dry density. If one density test is below 95% or two consecutive density tests are below 98% of the maximum laboratory dry density, cease production and resolve the issue before resuming production.

Marshall Stability

Perform Marshall Stability testing twice per day or once per day if less than 1,500 SY is reclaimed. Meet the requirements of the table contained within this specification. If the Marshall Stability test does not meet the specification, cease production and resolve the issue before resuming production.

Compressive Strength of Molded Cylinders

Perform testing in accordance with ASTM D-1633 at a frequency of once each 3,000 SY (not less than once per day). If one test is below 250 PSI or two consecutive tests are below 300 PSI, cease production and resolve the issue before resuming production.

Depth Measurements

Depth measurements shall obtained at least once per 250 SY. Meet the requirements of 3.07.

End of Section