GENERAL NOTES AND SPECIFICATIONS

General Requirements:
Contractor shall provide all labor, equipment, and materials necessary for the work and to cover incidental activities for the project in accordance with the January 2019 edition of the FDOT's Standard Specification for Road and Bridge Construction manual. The costs of these requirements shall be included in the unit prices. There will be no separate pay item for General Requirements.

Pre-construction meeting:
A Pre-Construction Conference shall be held at the Highlands County Engineering Department, 505 S. Commerce Ave., Sebring, Fl 33870 prior to issuance of a NOTICE TO PROCEED.

Reference documents:
A. Any work category not included in this document shall comply with the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, January 2019 Edition, hereinafter referred to as the Standard Specification.
B. Unit of Measurement and Basis of Payment shall be based on the Bid Schedule included in this solicitation.
C. All applicable Standard Plans for Road Construction are made a part of this contract and can be referenced in the FDOT Standard Plans for Road Construction, 2019-20 Edition.
D. Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways ("Florida Greenbook"), 2016.
E. The project plans associated with this project are identified as "CR 623 (Kenilworth Boulevard) Mill & Resurfacing Between Mini Ranch Road West & Haywood Taylor Blvd."

Examination of Site:
It shall be the responsibility of the prospective bidder to visit the project site and make such examinations and explorations as may be necessary to determine the site of all ambient conditions which may affect construction of this project. Particular attention should be given to methods of providing ingress and egress to adjacent private and public properties, procedures for protecting existing improvements and disposition of all materials to be removed in order that proper considerations may be given to these details during the preparation of the Proposal. Any unusual conditions which may give rise to later contingencies should be brought to the attention of the County and its Engineer prior to the time of the submission of the Proposal.

Payment
101-1
Mobilization, Surveying, and Pre-Construction Video:
Mobilization/Demobilization shall conform to the provisions of the FDOT Specifications Section 101, except as modified and amended herein. The Contractor shall furnish all necessary

equipment and material storage areas. The costs any required insurance and other pre-construction expense necessary for the start of work.

Construction survey stakeout and as-built record survey shall be included in this item and performed by a registered licensed professional surveyor and mapper.

A pre-construction video shall be provided to and accepted by the County which documents all structures withing the ROW before any construction activities begin. Deliverable shall be an electronic copy of the video recorded at full high definition (1080p) resolution, as well as a hard copy in DVD-Video format. Video must be provided prior to any pavement/soil disturbance and/or clearing and grubbing activities.

Payment for Mobilization, Surveying, and Pre-Construction Video shall be at the contract Lump Sum (LS) price.

102-1
Maintenance of Traffic:
The work in the section consists of maintaining traffic in the construction area to include all signs, barricades, flagmen, and other necessary traffic control devices. All Maintenance of Traffic work shall conform to the provisions of the FDOT Specification Section 102 and FDOT Standard Plans 102, except as modified or amended herein.

All work zones shall always have the FDOT required pre and post signs (i.e. Construction Ahead, Men working). Except as specifically approved by the County, all roads shall be kept open to traffic during construction. The Contractor shall always keep all work zones clean and safe.

The Contractor shall take due care to avoid damaging the existing paint and thermoplastic pavement striping, RPM's on all traveled roads. The Contractor shall repair any pavement marking damaged on any traveled road with the same material that existed prior, as determined by the County. Any pavement marking repairs shall be incidental to the Maintenance of Traffic bid item.

Temporary detours of traffic shall be permitted only upon prior written approval by the County. Temporary signs are permitted as long as they are in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). If a lane closure is anticipated to be in excess of twelve (12) hours, post mounted signage is required. The Contractor shall be responsible for contacting the EMS, Fire & Sheriff's, School Board office's prior and during road closure.

The Contractor will not be permitted to isolate residences or businesses without prior written notification to each and to the County. In areas where this may be difficult to achieve, the Contractor may opt to perform work in the late evening or on weekends with notification and approval by the County. All option work performed in the late evenings shall be in accordance with applicable Federal, State, and Local rules, regulations and ordinances. Whenever practical alternate access should be provided to all residences and business whenever construction interfaces with existing means of access, the Contractor shall provide and maintain in a safe condition, temporary approaches or

crossing over intersections with trails, roads, streets and entrances to business, and residences. Failure to comply with the terms in the section may result in the immediate cessation of all operations by the Contractor, until the County authorizes resumption.

Traffic Plan- The Contractor shall submit a (signed and sealed by a Florida Certified Professional Engineer) Maintenance of Traffic (MOT) Plan for review and approval by the County at the Pre-Construction Conference or fifteen (15) days prior to the start of construction at each work site.

Payment shall be at the contract Lump Sum (LS) price for Maintenance of Traffic and shall include MOT plan, labor, equipment, and materials.

104-10-3
Sediment Barrier (Silt Fence) & Floating Turbidity Barrier:
The Contractor shall place soil erosion control devices as indicated on the plans or as required by local or state agencies prior to disturbance of ground cover or earthmoving operations. The work in this section shall conform to the requirements of the FDOT Specification Section 104. Unprotected ground shall be exposed for the shortest time practical, runoff velocities controlled, and outlet waters filtered at all times while work is continuing on the project site. The application for and cost associated with applying for the N.P.D.E.S permit shall be considered incidental to the work performed. Payment shall be at the contract unit bid price per Lineal Foot (LF) for Sediment Barrier (Silt Fence) and shall include all labor, equipment, and materials required to complete this item of work.

110-1-1
Clearing and Grubbing:
The work in this section shall conform to the requirements of FDOT Specifications section 110. Contractor shall provide all labor and equipment for complete removal and disposal of all trees, vegetation, debris, flexible pavement, complete removal and disposal of all existing concrete driveways, and any other obstructions in all areas where excavation is to be done, or where embankments or structures will be constructed as indicated on the plans. This includes roadway area, ditch area, borrow and material pits, and areas where pipe culverts will be constructed, and any shrub/tree trimming/removal needed to accomplish swale grading. Payment for this item shall be Lump Sum (LS) for the area shown in the construction plans.

120-1
Regular Excavation:
The work in this section shall conform to the requirements of FDOT Specifications Section 120. Excavation is intended for reshaping shoulders slopes and swale grading. The Contractor shall verify the quantity for this bid item. Should the restoration area be in excess of the bid item allowance, the Contractor shall notify the County before proceeding with the work. Work under this item shall be paid for under Cubic Yardage (CY) for Excavation and shall include all labor, equipment, and materials required to complete this item of work.

120-6
Embankment:
The work in this section shall conform to the requirements of FDOT Specifications Section 120. Embankment is intended for reshaping shoulder slopes and swale grading. This work is also intended for reshaping of shoulders and slopes from the proposed edge of pavement to existing ground where pavement slope corrections occur as indicated in the plan. The Contractor shall verify the quantity for this bid item. Should the restoration area be in excess of the bid item allowance, the Contractor shall notify the County before proceeding with the work. Payment for this item shall be per Cubic Yard (CY) in-place as shown on the construction plans.

160-4
Type B Stabilization 12":
The work in this section shall conform to the requirements of FDOT Specifications Section 160, except as amended, as shown in the plans. Stabilization (Type B, 12") is to be used to stabilize designated 10-foot shoulder portions of the roadbed to provide a firm and unyielding subgrade, having the required bearing value as shown on the plans and cross sections. The work under this section shall include all equipment, labor, tools, materials and all incidentals necessary for satisfactorily supplying, hauling, excavating existing material, dumping, spreading and compacting a stabilization base (Type B , 12") as described in the construction plans. Work under this item shall be paid for per Square Yard (SY) of construction activity as shown in the plans.

285-706
Optional Base, 8" Limerock:
The work in this section shall conform to the requirements of FDOT Specifications Section 285, except as amended, as shown in the plans. Limerock base is to be used for the reconstruction of shell, dirt, or other non-asphalt concrete driveways, or turnouts as indicated on the plans. All turnouts shall be constructed, as specified in the plans. The work under this section shall include all equipment, labor, tools, materials, and all incidentals necessary for satisfactorily supplying, hauling, excavating existing material, dumping, spreading, and compacting an optional base (8-inch limerock) course as described in the construction plans. Work under this item shell be paid for per Square Yardage (SY) of construction activity as shown in the plans. Asphalt shall be paid under the superpave AC Traffic B SP 9.5 item.

285-709
Full Pavement Restoration (Optional Base Type B 12.5, 6"):
The work in this section shall conform to the requirements of FDOT Specifications Section 285, except as amended, as shown in the plans. Optional Base 6 (Type B 12.5, 6") is to be used to repair pavement areas where base failure has occurred, thereby preventing pavement overlaying. Upon review of pre-milling pavement conditions, it is estimated that less than 5% of the pavement will require full pavement restoration. Once pavement milling is complete, the Contractor shall verify which pavement sections shall require full pavement restoration with the County and Engineer. Should the restoration area be in excess of the bid item allowance, the Contractor shall notify the County before proceeding

with the work. The work under this section shall include all equipment, labor, tools, materials and all incidentals necessary for satisfactorily supplying, hauling, excavating existing material, dumping, spreading and compacting an optional base (Type B 12.5, 6") as described in the construction plans. Work under this item shall be paid for per Square Yard (SY) of construction activity as shown in the plans. It is anticipated that full lane width numerous small areas will require full depth restoration.

327-70
Milling Existing Asphalt Pavement:
Contractor shall provide all labor, equipment, and materials for milling including proper disposal per FDOT Specifications 327, except as amended hereafter. The straight segment of the pavement is proposed to be milled 2". Designated turnouts are proposed to be milled ½" as shown on the plans. Payment for this item shall be per Square Yardage (SY) of material milled, as shown in the construction plans.

334-1-13
Superpave Asphalt Concrete:
The work in this section shall conform to the requirements of FDOT Specifications Section 334 except as amended hereinafter. The work under this section shall include all equipment, labor, tools, include cost of bituminous material (tack coat) and all incidentals for satisfactorily placing, hauling, compacted Type SP 12.5 asphaltic concrete (structural & overbuild course) and Type SP-9.5 asphaltic concrete (surface & leveling course). as described on the construction plans. The Contractor is required to utilize a paving material transfer vehicle (shuttle buggy) to store and transfer hot-mixed asphalt material from the truck to the paver for remixing and continuous paving activity. Work under this item shall be paid for Tonnage (TN) placed as shown in the construction plans.

430-94
Desilting Pipe:
The work in this section shall conform to the requirements of FDOT Specifications Section 430, except as amended hereinafter. The work in this section shall include furnishing equipment and labor necessary to desilt existing stormwater drainage pipes/Catch Basins, and also includes disposing of all silt and debris removed during the desilting operation as summarized on plans by pipe location, diameter (or equivalent round diameter), and length to be desilted. Payment for this item shall be per Lineal Foot (LF) of pipe desilting.

430-174
Pipe Culverts:
The work in this section shall conform to the requirements of FDOT Specifications Section 430, except as amended hereinafter. Work under this item shall include all incidentals, labor, & tools for placing drain pipes and shall be paid for per Lineal Foot (LF) placed as shown in the construction plans. Pipe cutting, removal, disposal, and collars for connecting new pipe to existing pipe are considered incidental to pipe construction. No additional payment will be made for these items.

430-982
Mitered End Sections (M.E.S.):
The work in this Section shall include all equipment, labor, tools, materials and all incidentals for each mitered-end section per FDOT Specification Section 430. Payment for this item shall be Each (EA) mitered-end section constructed as shown in the construction plans and shall include concrete pipe as noted on plans.

552-2-129
Concrete Driveways:
The work in this section shall conform to the requirements of FDOT Specifications Section 522, except as amended, as shown in the plans. A concrete flared driveway is to be used for the reconstruction of existing concrete flared driveways as indicated on the plans. All turnouts shall be constructed, as specified in the plans. The work under this section shall include all equipment, labor, tools, materials, and all incidentals necessary for satisfactorily supplying, hauling, excavating existing material, dumping, and spreading as described in the construction plans. Work under this item shall be paid for per Square Yardage (SY) of construction activity as shown in the plans. Concrete shall be paid under the Concrete Driveway item.

530-3
Rip-Rap (Rubble):
Contractor shall provide all labor, equipment and materials to install materials per FDOT Specifications 530, except as amended hereafter. Payment for this item shall be per Ton (TN) of material placed, if required. This item may be needed to prevent erosion where the proposed swales end.

570-1-2
Performance Turf, Sod:
Contractor shall furnish all labor, equipment, and material to establish a stand of grass within all disturbed ditch/shoulder areas, in accordance with the most current edition of the FDOT Standard Specifications for Road and Bridge Construction, Section 570. Contractor shall be responsible for obtaining a final result of well-rooted growth, resistant to normal washing and drought. Measurement and basis of payment for sodding shall be at the contract unit price bid for the actual Square Yards (SY) of sodding within the required limits and placed to the satisfaction of the County.

700-1-11
Single Post Sign Installation:
The work under this section shall conform to the requirements of FDOT Specifications Section 700, except as amended hereinafter. The work under this section shall include all equipment, labor, tools materials and all incidentals necessary for installation of single post signs and mounting speed limit warning signs on existing poles, as shown in the construction plans. Payment for this item shall be per Assembly (AS) of signs installed.

Highlands County Traffic Operations Sign Material Technical Specifications:

1. All signs shall have aluminum substrate .80 thickness and follow latest version of FDOT standard specifications.
2. All retro-reflective sheeting shall be FDOT type 11 with UV laminate.
3. All signs shall be printed, no electro-cut film.
4. Street name signs shall have series “B” with upper case lettering only.
5. County maintained roads shall have a green background with white lettering, Non-County maintained roads shall have white background with green lettering and have an inset border, Private roads shall have a blue background with white lettering and have “Private Road” spelled out on sign.
6. Design templates for street name signs shall be furnished to Highlands County Traffic Operations in the current format of their design software or PDF document for approval.
7. All street name signs shall be mounted to sign post using twist bracket or “Z” bar.
8. All street name signs assembled on post shall have the shortest horizontal sign on top and longer street name sign on the bottom of street sign array.
9. All signs shall have a nylon washer on the sign face in front of metal washer at all mounting points.
10. All traffic signs shall be mounted with FDOT approved aluminum “Z” bar.
11. All sign posts shall be 3.0” aluminum round or galvanized channel post for twist brackets.
12. All sign assemblies shall have a soil plate attached to the post as approved by FDOT and Federal standards.
13. All sign hardware (bolts, nuts, washers) shall be galvanized, no zinc or stainless steel hardware.

Vendors or contractors must also follow the standards set forth in the most current version of the Florida Department of Transportation Standard Specifications for Road & Bridge Construction and the most current version of the Florida Design Standards (FDOT Indexes) and the Federal Manual on Uniform Traffic Control Devices.

706-3
Retro-Reflective Pavement Markers (RPMs):
The work in this section shall conform to the requirements of FDOT Specifications Section 706. The work in this section shall include all equipment, labor, tools, materials, and incidentals necessary to install Retro-Reflective Pavement Markers as described on the construction plans. Payment for this item shall be Each (EA) Marker as noted on the plans.

71010-11 & 711-16
Pavement Markings (Paint & Thermoplastic):
The work in this section shall conform to the requirements of FDOT Specifications Sections 701, 706, 710, & 711 except as amended hereinafter. The work in this section

shall include all equipment, labor, tools, materials and all incidentals necessary to apply both temporary striping and final Thermoplastic markings as described on the construction plans. Payment for items above shall be per Gross Mile (GM), Nominal Mile (NM), Lineal Foot (LF), & Each (EA), as shown in the construction plans and bid schedule above. Contractor shall be responsible for any corrections for these items not within FDOT spec, or any item within this section damaged during construction at his/her expense. A 15-calendar day “asphalt curing” time shall be acknowledged by the Contractor, prior to placement of the final Thermoplastic striping.

915-332-2
Full Depth Reclamation:
Mix Design Procedures are included in Appendix 1 (attached). The work in this section shall include all equipment, labor, tools, materials, and all incidentals to complete the reclamation base work, including, but not limited to reworking the cross-slope and widening the base, coring and sampling, laboratory testing and development of the mix design, certification of the mix design by a Florida Professional Engineer, sampling and testing of the work in progress and final testing, certification and verification by accredited laboratories documenting satisfactory quality control, layout, and any other items along with all materials, including, but not limited to asphalt emulsion, foamed asphalt, water, Portland cement in accordance with the attached Appendix 1 for a smooth reworked asphalt/base as determined by a rolling straight edge provided by the Contractor. Payment for this item shall be per SY of reworked asphalt/base for the project, as shown in the plans. For Bid Purposes, the Full Depth Reclamation (FDR) shall be set at 2.5 gal/sy of emulsion and 30 lb/sy of Portland cement. When the final mix design is approved, adjustments will be made to these quantities.

All Contractors and their Subcontractors shall be FDOT prequalified. Bidders must submit a minimum of five Full Depth Reclamation (with emulsion stabilization) project references that have been completed within the past three years. Bidders may be required to submit detailed information regarding the staff that they propose for this project. Contractor shall be capable of meeting all the requirements of this specification at the time of the bid. Staff shall have the option to inspect the Contractor’s equipment and if found deficient, it shall be the basis for rejection of Contractor’s bid.

R-1
Geotextile Paving Fabric:
The work in this section shall include all equipment, labor, tools, materials, and incidentals necessary to install the Petromat Geotextile fabric, or approved equal, as described on the construction plans. Payment for this item shall be Square Yards (SY) as noted on the plans.

Damage to Existing Property, Structures, and Utilities:
The Contractor shall be held responsible for and shall repair all damage to pavement beyond the limits of this Contract or outside the right-of-way. Also, buildings, telephone or other cables, poles, signs, mailboxes, irrigation piping, water pipes, sanitary pipe, or other structures which may be encountered, shall be repaired if damaged. It shall be the

Contractor's responsibility to determine the location, character, and depth of any existing utilities.

Quantity Verification:
The quantities shown in the Bid Form are based on available records. The bidder shall verify the same prior to bidding and bring any discrepancy to the County's attention in writing prior to bid submittal.

Final payment:
will be based on actual units of measure as measured in the field. This will include all the line items specified in the scope of work above.

Default:
If the Contractor fails to perform the Contract terms and conditions, fails to begin the work within the time specified, fails to perform the work with sufficient workmen, equipment or materials to assure the prompt completion of the Contract, performs the work unsuitably, neglects or refuses to remove materials, refuses to perform work anew, fails to comply with Contract requirements, or if the Contractor's performance, under the Contract, becomes unsatisfactory in the opinion of the County, the County will give notice, in writing, to the Contractor stating the nature of the failure to perform and providing time certain to correct the failure.

If the Contractor, within the period of time described in the notice, shall not proceed to correct the conditions, of which complaint is made, the County will have full power and authority, without violating the Contract to take back authority of the work, out of the hands of the Contractor, and to declare the Contact in default.

SPECIAL PROVISIONS
The Sebring International Raceway conducts a large annual race, which has been postponed to November for the 2020 race season due to COVID 19. The Contractor shall take special care to coordinate with this event and maintain appropriate flow of traffic. A construction schedule that accounts for this event shall be submitted to the County for review and approval.

APPENDIX 1: SECTION 332
FULL DEPTH RECLAMATION

332-1 Description.

This work shall consist of the preparation of a base course constructed by in-place pulverizing and blending of the existing bituminous pavement and base materials, and the introduction of asphalt emulsion or foamed asphalt and other additives, if called for in the mix design. 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.

332-2 Materials.

332-2.1 Asphalt Emulsion: 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) and approved by the State Materials Office prior to use.

332-2.2 Foamed Asphalt: If the mix design calls for stabilization with foamed asphalt utilize an asphalt binder meeting the requirements of Section 916 and listed on the Department's Approved Products List.

332-2.3 Sampling, Certification, and Verification: At any time during the project, the Engineer may sample and test the asphalt emulsion or asphalt binder 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 the product. Further shipment of the product will remain suspended until the cause of the problem is evaluated and corrected by the supplier to the satisfaction of the Engineer.

332-2.4 Water: The water for the base course compaction and foaming additive (if used) shall meet the requirements of Section 923.

332-2.5 Portland Cement: Portland cement in either a dry or slurry form may be added to the reclaimed mixture if required by the mix design. Slurry made from Portland cement shall contain a minimum of 30% dry solids content. Cement used for full depth reclamation shall be Type I or II and comply with Section 921. Cement shall be limited to no more than 1.5 percent by dry weight of reclaimed material. Cement amounts greater than 1.5 percent will only be allowed if approved by the Engineer.

332-2.6 Documents: Provide copies of all materials delivery tickets to the Engineer upon materials delivery to the project site.

332-3 Mix Design.

Prior to construction, obtain an adequate number of core samples to develop the mix design(s). Representative samples of the asphalt pavement material, underlying base material, and virgin materials, where applicable, shall be supplied to a nationally accredited laboratory for testing to determine the proportions of asphalt emulsion or foamed asphalt, and other additives, if necessary, needed to produce a mix design meeting the requirements of Table 332-1. The optimum binder content shall be the binder content that results in the highest wet tensile strength while also having 70% retained tensile strength compared to the dry strength and additionally has a minimum 1800 pounds. Marshall stability. The mix design shall be signed and sealed by a professional engineer and submitted to the Engineer prior to use for approval.

Table 332-1 Mix Design Criteria		
Test	Test Method Number	Criteria
Gradation of reclaimed material	AASHTO T 27-11	Report
Determination of optimum binder content		
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	1800 lbs. minimum stability
Resistance of compacted bituminous mixture to moisture induced damage. 55 to 75% vacuum saturation, water bath at 25°C for 23 hours, last hour in water bath at 40°C.	AASHTO T 283-07 (2011)	70% minimum retained tensile strength

332-4 Equipment.

332-4.1 Road Reclaimer: 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 16 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 interlocked with the ground speed of the machine. The asphalt metering system and water metering system shall be capable of continuously monitoring flow and totaling the quantity of water and asphalt applied into the mixing chamber. Additives, if specified, shall be uniformly distributed and mixed with the pulverized material and any existing underlying material.

332-4.2 Motor Grader: Utilize a motor grader of sufficient size and horsepower to adequately rough grade the pulverized base and rough and finish grade the mixed and compacted base. The equipment shall be in good working order free from leaks and capable of maintaining an accurate grade and cross-slope.

332-4.3 Rollers: Utilize rollers in good working order free from leaks and capable of compacting the mix to the requirements of this specification.

332-4.4 Additional equipment: Utilize additional equipment as needed to complete the work in the contract.

332-5 Construction.

332-5.1 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 not changed in any location after the final surface is placed. Maintain roadway elevations except for cross slope correction or as approved by the Engineer.

332-5.2 Weather and 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.

332-5.3 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 (materials listed in FDOT Design Standard Index 514 as General Use Optional Base Materials) 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.

332-5.4 Additional Material: When additional material is to be added to correct cross slope deficiencies or change elevation as directed by the Engineer, use approved base material (bases listed in FDOT Design Standard Index 514 as General Use Optional Base Materials) placed on the roadway prior to the final pass for pulverization and mix uniformly with the existing material.

332-5.5 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 Table 332-2.

Table 332-2

Gradation Requirements for Pulverized Material

Sieve Size	Minimum Percent Passing
3 inches	100
2 inches	95
No. 4	55
No. 200*	5

*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 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.

332-5.6 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 500 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, or unacceptable results occur, construct a new control strip. 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.

Furnish the proper number, weight and type of rollers to obtain the required compaction of the reclaimed material. 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 pavement shoving 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.

332-5.7 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.

332-5.8 Finishing: After completing all base course operations, assure the base course conforms to the required lines, grades, and cross section by rolling a straight edge test. This test should be provided by the **CONTRACTOR**. If necessary, lightly scarify the surface to eliminate any imprints made by equipment and then recompact the surface to the required density. Correct all straightedge or surface irregularities greater than 1/2 inch over 10 feet to the satisfaction of the Engineer.

332-5.9 Protection and Curing: Protect and cure the completed base course by applying a prime coat meeting the requirements of Section 300 at a rate of 0.15 to 0.25 gallons per square yard. Apply the prime coat no later than 24 hours after the completion of finishing operations. 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. Cure the reclaimed base until the moisture content reduces to 2.0 percent or less.

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.

332-6 Quality Control Testing.

332-6.1 Frequency: Perform the following quality control tests at the prescribed frequency. Randomly determine sample locations in accordance with ASTM D 3665-12 or equivalent. Correct all deficiencies unless otherwise approved by the Engineer.

Reclaimed 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 3,000 SY. Meet the requirements of Table 332-2. If the requirements of Table 332-2 are not met, adjust the pulverization operation so that the resultant material will meet specification requirements or to the satisfaction of the Engineer.

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 1000 square yards. Determine the moisture content in accordance with AASHTO T 110-03 (2011), AASHTO T 265-12, or ASTM D 4643-08.

In-place field density: Perform one nuclear density test per 1000 square yards. The dry field density (i.e. corrected gauge wet density) of the compacted mixture shall be at least 96.0 percent of the maximum laboratory dry density. No individual density test shall be lower than 92.0 percent of the maximum laboratory dry density. If one density test is below 92.0 percent or two consecutive density tests are below 96.0 percent of the maximum laboratory dry density, cease production and resolve the issue to the satisfaction of the Engineer before resuming production.

Marshall stability: Perform Marshall stability testing twice per day or once per day if less than 1500 square yards is reclaimed. Meet the requirements of Table 332-1. If the Marshall stability does not meet the requirements of Table 332-1, cease

production and resolve the issue to the satisfaction of the Engineer before resuming production.

Retained tensile strength: Perform retained tensile strength testing twice per day or once per day if less than 1500 square yards is reclaimed. Meet the requirements of Table 332-1. If the retained tensile strength does not meet the requirements of Table 332-1, cease production and resolve the issue to the satisfaction of the Engineer before resuming production.

Depth of mixing: Determine the depth of mixing at least once per 250 square yards. Meet the requirements of 332-5.7.

Cross slope measurement: Meet the requirements of Table 330-4.

Additional sampling and testing may be required if significant changes in the characteristics of the reclaimed material are observed, such as a much coarser or finer gradation or a noticeable difference in asphalt content, or when there is considerable variability in the field test results.

332-7 Acceptance.

Acceptance of the material will be based on providing documentation that component materials meet the requirements of 332-2 and by quality control test results meeting the requirements of 332-6.

332-8 Basis of Payment.

332-8.1 General: The full depth reclamation shall be paid for at the Contract unit price per square yard, completed and accepted. Such price and payment shall be full compensation for performing all full depth reclamation work as described in this Section.

332-8.2 Payment: Payment will be made under:

Item No. 915-332-2 Full Depth Reclamation, per square yard