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 Department 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 Department 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.

The Department will consider requests for time extension due to delay in work operations within the limits of the railroad right-of-way, the adjoining 15 feet, or determined by the Railroad or Department to be able to potentially foul the tracks regardless of distance from railroad right-of-way on job progress as the basis for granting a time extension only if all the following criteria are met:

1. Delays are due to a lack of availability of Railroad protective services as required by 7-11.4.

2. Work within the limits of the railroad right-of-way or the adjoining 15 feet actually impacted progress toward completion of controlling work items.

3. The Contractor took all reasonable measures to minimize the effect of work operations within the limits of the railroad right-of-way or the adjoining 15 feet on job progress, including compliance with all provisions of 7-11.4 and 5-12, and cooperative scheduling of the Contractor's operations.

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

A preliminary request for an extension of Contract Time must be submitted in writing to the Engineer within ten calendar days after the commencement of a delay to a controlling item of work. If the Contractor fails to submit this required preliminary request 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 writing within 30 days after the elimination of the delay to the controlling item of work identified in the preliminary request for an extension of Contract Time. Each request for a Contract Time extension shall include as a minimum all documentation that the Contractor wishes the Department 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 preliminary request of 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 Department's analysis and identification of the actual controlling or non-controlling work activities. Further, in such instances, the Department's 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 Department's determination was without any reasonable factual basis.

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

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

Original Contract Amount	Daily Charge Per Calendar Day
$299,999 and under	$904
$300,000 but less than $2,000,000	$1,685

$2,000,000 but less than $5,000,000.....$2,667
$5,000,000 but less than $10,000,000.....$3,813
$10,000,000 but less than $20,000,000.....$5,021
$20,000,000 but less than $40,000,000.....$7,442
$40,000,000 and over.....$10,224 plus 0.00005 of any amount over $40 million (Round to nearest whole dollar)

The Engineer may approve adjustments to the liquidated damages amounts in accordance with the Construction Project Administration Manual (CPAM) provided all contract work is complete.

SECTION 9 – MEASUREMENT AND PAYMENT.

9-1.3 Determination of Pay Areas:

9-1.3.1 Final Calculation: When measuring items paid for on the basis of area of finished work, where the pay quantity is designated to be determined by calculation, the Engineer will use lengths and widths in the calculations based on the station to station dimensions shown on the plans; the station to station dimensions actually constructed within the limits designated by the Engineer; or the final dimensions measured along the surface of the completed work within the neat lines shown on the plans or designated by the Engineer. The Engineer will use the method or combination of methods of measurement that reflect, with reasonable accuracy, the actual surface area of the finished work as the Engineer determines.

9-1.3.2 Plan Quantity: When measuring items paid for on the basis of area of finished work, where the pay quantity is designated to be the plan quantity, the Engineer will determine the final pay quantity based on the plan quantity subject to the provisions of 9-3.2. Generally, the Engineer will calculate the plan quantity using lengths based on station to station dimensions and widths based on neat lines shown in the plans.

9-3 Compensation for Altered Quantities.

9-3.1 General: When alteration in plans or quantities of work not requiring a supplemental agreement as hereinbefore provided for are offered and performed, the Contractor shall accept payment in full at Contract unit bid prices for the actual quantities of work done, and no allowance will be made for increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor, resulting either directly from such alterations, or indirectly from unbalanced allocation among the Contract items of overhead expense on the part of the bidder and subsequent loss of expected reimbursement therefore, or from any other cause.

Compensation for alterations in plans or quantities of work requiring supplemental agreements shall be stipulated in such agreement, except when the Contractor proceeds with the work without change of price being agreed upon, the Contractor shall be paid for such increased or decreased quantities at the Contract unit prices bid in the Proposal for the items of work. If no Contract unit price is provided in the Contract, and the parties cannot agree as to a price for the work, the Contractor agrees to do the work in accordance with 4-3.2.

9-3.2 Payment Based on Plan Quantity:

9-3.2.1 Error in Plan Quantity: As used in this Article, the term "substantial error" is defined as the smaller of (a) or (b) below:

(a) a difference between the original plan quantity and final quantity of more than 5%,

(b) a change in quantity which causes a change in the amount payable of more than $5,000.

On multiple job Contracts, changes made to an individual pay item due to substantial errors will be based on the entire Contract quantity for that pay item.

Where the pay quantity for any item is designated to be the original plan quantity, the Department will revise such quantity only in the event that the Department determines it is in substantial error. In general, the Department will determine such revisions by final measurement, plan calculations, or both, as additions to or deductions from plan quantities.

In the event that either the Department or the Contractor contends that the plan quantity for any item is in error and additional or less compensation is thereby due, the claimant shall submit, at their own expense, evidence of such in the form of acceptable and verifiable measurements or calculations. The Department will not revise the plan quantity solely on the basis of a particular method of construction that the Contractor selects. For earthwork items, the claimant must note any differences in the original ground surfaces from that shown in the original plan cross-sections that would result in a substantial error to the plan quantity, and must be properly documented by appropriate verifiable level notes, acceptable to both the Contractor and the Department, prior to disturbance of the original ground surface by construction operations. The claimant shall support any claim based upon a substantial error for differences in the original ground surface by documentation as provided above.

9-3.2.2 Authorized Changes in Limits of Work: Where the Department designates the pay quantity for any item to be the original plan quantity and authorizes a plan change which results in an increase or decrease in the quantity of that item, the Department will revise the plan quantity accordingly. In general, the Department will determine such revisions by final measurement, plan calculations or both.

9-3.2.3 Specified Adjustments to Pay Quantities: Do not apply the limitations specified in 9-3.2.1 and 9-3.2.2 to the following:

(1) Where these Specifications or Special Provisions provide that the Department determines the pay quantity for an item on the basis of area of finished work adjusted in accordance with the ratio of measured thickness to nominal thickness.

(2) Where these Specifications provide for a deduction due to test results falling outside of the allowable specified tolerances.

(3) To payment for extra length fence posts, as specified in 550-6.3.

9-3.3 Lump Sum Quantities:

9-3.3.1 Error in Lump Sum Quantity: Where the Department designates the pay quantity for an item to be a lump sum and the plans show an estimated quantity, the Department will adjust the lump sum compensation only in the event that either the Contractor submits satisfactory evidence or the Department determines and furnishes satisfactory evidence that the lump sum quantity shown is in substantial error as defined in 9-3.2.1.

9-3.3.2 Authorized Changes in Work: Where the Department designates the pay quantity for an item to be a lump sum and the Plans show an estimated quantity, the Department will adjust compensation for that item proportionately when an authorized plan change is made which results in an increase or decrease in the quantity of that item. When the Plans do not show an estimated plan quantity or the applicable specifications do not provide adjustments for contingencies, the Department will compensate for any authorized plan change resulting in an

increase or decrease in the cost of acceptably completing the item by establishing a new unit price through a supplemental agreement as provided in 4-3.2.

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 Department will correct all partial estimates and payments in the subsequent estimates and in the final estimate and payment.

The Department 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.

Contract amount is defined as the original Contract amount adjusted by approved supplemental agreements.

Retainage will be determined for each job on multiple job Contracts. The Department will not accept Securities, Certificates of Deposit or letters of credit as a replacement for retainage. **9-5.2 Unsatisfactory Payment Record:** In accordance with Sections 255.05 and 337.16 of the Florida Statutes, and the rules of the Department, the Department may disqualify the Contractor from bidding on future Department contracts if the Contractor's payment record in connection with contract work becomes unsatisfactory.

9-5.3 Withholding Payment:

9-5.3.1 Withholding Payment for Defective Work: If the Department discovers any defective work or material prior to the final acceptance, or if the Department has a reasonable doubt as to the integrity of any part of the completed work prior to final acceptance, then the Department 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 Department will withhold progress payments from the Contractor if he fails to comply with any or all of the following within 60 days 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 Department will withhold progress payments until the Contractor has satisfied the above conditions.

9-5.5 Partial Payments for Delivery of Certain Materials:

9-5.5.1 General: The Department will allow partial payments for new materials that will be permanently incorporated into the project and are stockpiled in approved locations in

the project vicinity. Stockpile materials so that they will not be damaged by the elements and in a manner that identifies the project on which they are to be used.

The following conditions apply to all payments for stockpiled materials:

1. There must be reasonable assurance that the stockpiled material will be incorporated into the specific project on which partial payment is made.

2. The stockpiled material must be approved as meeting applicable specifications.

3. The total quantity for which partial payment is made shall not exceed the estimated total quantity required to complete the project.

4. The Contractor shall furnish the Engineer with copies of certified invoices to document the value of the materials received. The amount of the partial payment will be determined from invoices for the material up to the unit price in the Contract.

5. Delivery charges for materials delivered to the jobsite will be included in partial payments if properly documented.

6. Partial payments will not be made for materials which were stockpiled prior to award of the Contract for a project.

9-5.5.2 Partial Payment Amounts: The following partial payment restrictions apply:

1. Partial payments less than $5,000 for any one month will not be processed.

2. Partial payments for structural steel, ITS and signal components, and precast prestressed items will not exceed 85% of the bid price for the item. Partial payments for all other items will not exceed 75% of the bid price of the item in which the material is to be used.

3. Partial payment will not be made for aggregate and base course material received after paving or base construction operations begin except when a construction sequence designated by the Department requires suspension of paving and base construction after the initial paving operations, partial payments will be reinstated until the paving and base construction resumes.

9-5.5.3 Off Site Storage: If the conditions of 9-5.5.1 are satisfied, partial payments will be allowed for materials stockpiled in approved in-state locations. Additionally, partial payments for materials stockpiled in approved out-of-state locations will be allowed if the conditions of 9-5.5.1 and the following conditions are met:

1. Furnish the Department a Materials Bond stating the supplier guarantees to furnish the material described in the Contract to the Contractor and Department. Under this bond, the Obligor shall be the material supplier and the Obligees shall be the Contractor and the Florida Department of Transportation. The bond shall be in the full dollar amount of the bid price for the materials described in the contract.

2. The following clauses must be added to the construction Contract between the Contractor and the supplier of the stockpiled materials:

"Notwithstanding anything to the contrary, <supplier> will be liable to the Contractor and the Florida Department of Transportation should <supplier> default in the performance of this agreement."

"Notwithstanding anything to the contrary, this agreement, and the performance bond issued pursuant to this agreement, does not alter, modify, or otherwise change

the Contractor's obligation to furnish the materials described in this agreement to the Florida Department of Transportation."

3. The agreement between the Contractor and the supplier of the stockpiled materials must include provisions that the supplier will store the materials and that such materials are the property of the Contractor.

9-5.6 Certification of Payment 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 Department 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 Department 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 Department. 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 Department.

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 Contract for all work completed and materials furnished. The Department 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 Department and the affected subcontractors or suppliers within said 30 day period.

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

120 EARTHWORK AND RELATED OPERATIONS FOR LAP (CLASS - D). (REV 12-17-24) (FA 7-13-21) (FY 2025-26)

SECTION 120 is deleted and the following substituted:

SECTION 120
EARTHWORK AND RELATED OPERATIONS FOR LAP (CLASS - D)

120-1 Description.

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

Earthwork and related operations consist 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.

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 non-traffic bearing applications such as sidewalks and bike paths along with any drainage structures associated with these facilities that are considered non-mainline.

120-1.2.2 Earthwork Category 2: Includes the earthwork and related operations associated with the construction of non-traffic bearing applications such as roadway shoulder-only areas, shared use paths, 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 mainline traffic bearing applications such as pavement lanes, turn lanes, ramps, parking lots, concrete box culverts, emergency shoulder use, retaining wall systems, 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 potentially contaminated materials, cease operations immediately in the vicinity and notify the Engineer. The presence of storage tanks or drums; observation of discolorations or sheens on earth; or other conditions that appear abnormal may indicate the presence of contaminated materials and must be treated with extreme caution.

Once determined safe, take measures if needed, 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.

The Engineer will notify the Department's Contamination Impact Coordinator who will then coordinate selecting and tasking the Department's Contamination Assessment/Remediation Contractor (CAR). Provide access to any potentially contaminated area. Preliminary investigation by the CAR Contractor will determine the course of action necessary for site security and the steps necessary under applicable laws, rules, and regulations for additional assessment and/or remediation work to resolve the contamination issue.

120-2 Classifications 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, and channel excavation.

If the proposal does not show subsoil excavation or lateral ditch excavation as separate items of payment, include such excavation under the item of regular excavation.

If the proposal shows lateral ditch excavation as a separate item of payment but does not show channel excavation as a separate item of payment, include such excavation under the item of lateral ditch excavation. Otherwise, include channel excavation under the item of regular excavation.

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

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.

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 Contract.

A Cost Savings Initiative Proposal (CSIP) submittal based on using borrow material from within the project limits will not be considered.

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 ponds and ditches that identify the placement of a blanket material, the existing surface is template as 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 excavation (Truck Measure).

120-2.4 Lateral Ditch Excavation: Lateral ditch excavation consists of all excavation of inlet and outlet ditches to structures and roadway, and ditches parallel to the roadway right-of-way. Dress lateral ditches to the grade and finished graded surface shown in the Plans.

120-2.5 Channel Excavation: Channel excavation consists of the excavation of channels of streams 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 pipelines, retaining walls, headwalls for pipe culverts and drains, catch basins, drop inlets, manholes, and similar structures.

120-3 Preliminary Soils Investigations.

When the Plans 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 depths shown in the Plans as the removal limits or as indicated by the Engineer, and backfill with suitable material. Where the removal of plastic soils is required, meet a construction tolerance of ±0.2 foot in depth and ±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. Remove the existing base beneath the pavement if indicated in the Plans. 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 Excavation for Structures and Pipe.

120-4.2.1 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.

120-4.2.2 Earth Excavation:

120-4.2.2.1 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.

120-4.2.2.2 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.

120-4.2.2.3 Removal of Obstructions: Remove boulders, logs, or any unforeseen obstacles encountered in excavating.

120-4.2.3 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.

120-4.2.4 Pipe Trench Excavation: Excavate trenches for pipes 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 pipelines 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.

120-5 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 Placement of Muck on Side Slopes: As an exception to the provisions of 120-5.1, when approved by the Engineer, the Contractor may store muck (A-8 material) alongside the

roadway, provided there is a clear distance of at least 6 feet between the roadway grading limits and the muck and the Contractor dresses the muck to present a neat appearance. Do not store such material in a manner which will impede the inflow or outfall of any channel or side ditches. All stored materials that is not used for the final surface material must be disposed of outside the right-of-way.

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. Existing base materials that are removed may be incorporated in the stabilized portion of the subgrade. If the construction sequence allows, incorporate all existing base material 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. The embankment materials must meet the requirements of Standard Plans 120 001. 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 details or as the Engineer directs.

Construct the embankment using maximum particle sizes as follows:

1. In top 12 inches: 3-1/2 inches (in any dimension).
2. 12 to 24 inches: 6 inches (in any dimension).
3. 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 3-½ inches in diameter within 3 feet of the location of any end-bent piling.

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 pit only when sufficient quantities of suitable material are not available from roadway 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 so 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 Agency, 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. A LOT is defined as a single lift of finished embankment. Do not construct another LOT over an untested LOT without the Engineer's approval in writing.

Construct mainline traffic bearing applications such as pavement lanes, turn lanes, ramps, parking lots, concrete box culverts, emergency shoulder use, and retaining wall systems in LOTs not to exceed 500 feet.

Construct non-mainline LOTs, not to exceed 2,000 feet, for non-traffic bearing applications such as shoulder-only areas, shared use paths, and sidewalks areas.

When mainline and non-mainline areas are constructed in one operation, a LOT shall not exceed 500 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 120-9 and in accordance with the acceptance program requirements in 120-10.

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 the embankment in successive layers with lifts up to a maximum listed in the table below 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 Needed
	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. Perform five density 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 or 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 Dewatering 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: When 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 120-9.2.3 and 120-9.2.6.

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 control line 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.

For sidewalks, the standard control line is a vertical line one foot from the left and right edge of the sidewalk. When the sidewalk is immediately adjacent to another roadway element such as curb-and-gutter, the control line is the distance between the two elements when the distance is less than a foot. The vertical control lines for sidewalks are referenced as the area to be compacted in 522-4.

For retaining wall system, the standard control line is a vertical line along the inside edges of the left and right side of the retaining wall face. For gravity walls and cast-in-place (CIP) retaining walls, the standard control line is a vertical line originating at the inside edge of the top of the gravity or CIP retaining wall.

When various elements are present in a single operation, a hierarchy for standard control line is as follows:

1. Retaining wall system,
2. CIP retaining wall systems,
3. Gravity walls,
4. Curb-and-gutter,
5. Shoulder break point,
6. and concrete driveway and sidewalk.

Where material that is unsuitable for normal embankment construction is to be used in the embankment outside the standard control line, 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 Dewatering 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 below. If the embankment material is classified as Group 2 in the table below 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 120-2

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 Needed
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 Greater than 12 Inches Inside Diameter:

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 the 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 top of embankment.

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 Standard Plans, 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.

The Engineer may permit the use of granular material 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 its 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 a layer of Type D4 geosynthetic 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, 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 FM 1-T099 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 Pipes, 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 needed for planting.

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-T310. 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
Proctor Maximum Density	One per soil type
Density	1 per LOT
Soil Classification and Organic Content	One per Maximum Density

120-11 Maintenance and Protection of Work.

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

Maintain and protect all earthwork construction throughout the life of the Contract 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 and grades 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 and grades shown in the Plans. In final shaping of the surface of earthwork, maintain a tolerance of 0.3 foot above or below the finished graded surface with the following exceptions:

1. Shape the surface of shoulders to within 0.1 foot of the finished graded surface.
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 finished graded surface.

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, calculated by the method of average end areas, unless the Engineer determines that another method of calculation will provide a more accurate result. The material will be measured in its original position by field survey or by photogrammetric means as designated by the Engineer. Measurement for payment will include the excavation of unsuitable material, lateral ditch excavation, channel excavation, and excavation for structures and 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: Measurement 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.

120-14 Basis of Payment.

120-14.1 General: Prices and payments for the work items included in this Section will be full compensation for all work described herein, including excavating, dredging, pumping, hauling, placing, and compacting; dressing the surface of the earthwork; and maintaining and protecting the complete earthwork.

120-14.2 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.

120-14.3 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.

334 ASPHALT CONCRETE FOR LAP (CLASS - D). (REV 12-12-24) (FA 7-2-21) (FY 2025-26)

SECTION 334 is deleted and the following substituted:

SECTION 334
ASPHALT CONCRETE FOR LAP (OFF-SYSTEM)

334-1 Description.

334-1.1 General: Construct an Asphalt Concrete pavement based on the type of work specified in the Contract and the Asphalt Work Categories as defined below. Meet the applicable requirements for plants, equipment, and construction requirements as defined below. Use an asphalt concrete mix that meets the requirements of this specification.

334-1.2 Asphalt Work Mix Categories: Construction of Asphalt Concrete 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 mix type as shown in Table 334-1.

Table 334-1
Mix Types

Asphalt Work Category	Mix Types	Traffic Level	ESALs (millions)
1	Type SP-9.5(1)	B	< 3
2	Structural Mixes: Types SP-9.5 or SP-12.5(1) Friction Mixes: Types FC-9.5 or FC-12.5(1)	B	< 3
3	Structural Mixes: Types SP-9.5 or SP-12.5 Friction Mixes: Types FC-9.5 or FC-12.5	C	≥ 3

(1) Equivalent mixes may be approved as determined by the Engineer. For example, Marshall S-III mixture type is equivalent to Superpave SP-9.5, Marshall S-I is equivalent to Superpave SP-12.5, and Marshall FC-3 is equivalent to Superpave FC-9.5.

At no additional cost, for a Type SP mix the following Traffic Level substitutions are allowed:

Traffic Level C can be substituted for Traffic Level B.

334-1.4 Gradation Classification: Asphalt concrete mixtures are classified as fine and are defined in Standard 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 layers will be the plan thickness as shown in the Contract Documents. Before paving, propose a thickness for each individual layer meeting the requirements of this specification, which when combined with other layers (as applicable) will equal the plan 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.....1-1/2 to 3 inches
Type FC-12.5 ..... 1-1/2 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 must 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

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 320-3.2 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. When using a PG 76-22 asphalt binder in friction course mixtures, limit the amount of RAP material used in the mix to a maximum of 20% by weight of total aggregate. As an exception, amounts greater than 20% RAP by weight of total aggregate can be used if no more than 20% by weight of the total asphalt binder comes from the RAP material. When using a PG 76-22 asphalt binder in structural course mixtures, refer to 334-3.

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. a grizzly or grid over the RAP bin;
b. in-line roller or impact crusher;
c. 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, and bulk specific gravity (G_{sb}) of the RAP material based on a representative sampling of the material by roadway cores or stockpile samples. For roadway core samples, assume responsibility for the degradation that will occur during the milling operation..

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
16 - 30	PG 58-22
≥ 30	PG 52-28

334-2.3.4 Allowable RAP Percentages for Type SP Structural Mixtures with PG 76-22 Asphalt Binder: For Type SP structural mixtures using PG 76-22 asphalt binder, select the percentage of RAP material based on Table 334-3.

Table 334-3
Allowable RAP Percentages[1] in Type SP Structural Mixtures with PG 76-22 Asphalt Binder

		Coarse RAP	Intermediate RAP	Fine RAP
Gradation % Passing #16 Sieve[2]		≤ 40%	> 40% to ≤ 50%	> 50%
PG_{HT}[3] > 100.0° C	Allowable RAP Percentage	≤ 25%	≤ 20%	≤ 20%
PG_{HT}[3] ≤ 100.0° C		≤ 30%	≤ 25%	

Notes:
1. RAP aggregate by weight of total aggregate or RAP binder by weight of total binder.
2. RAP gradations based on ignition oven extraction of RAP material in accordance with FM 5-563.
3. PGHT: asphalt binder high temperature continuous performance grade of RAP in accordance with Section 916.

334-3 Composition of Mixture.

334-3.1 General: Compose the asphalt mixture using a combination of aggregate (coarse, fine or mixtures thereof), 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: 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. As an exception to these requirements, use a currently approved FDOT Mix Design.

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 his/her 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 323, as well as the Primary Control Sieve (PCS) Control Point from AASHTO M 323. 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 N_{design} as defined in Table 334-4. Measure the inside diameter of gyratory molds in accordance with AASHTO T 312.

Table 334-4
Gyratory Compaction Requirements

Traffic Level	N_{design} Number of Gyrations
B	65
C	75

334-3.2.4 Design Criteria: Meet the requirements for nominal maximum aggregate size as defined in AASHTO M 323, as well as for relative density, VMA, VFA, and

dust-to-binder ratio as specified in AASHTO M 323. $N_{initial}$ and $N_{maximum}$ requirements are not applicable.

334-3.2.5 Moisture Susceptibility:

1. 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.

2. 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 proposed mix design submitted for verification:

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, as identified in the FDOT aggregate control program.

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 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) Qualified Mix Designer.

11. The ignition oven and maximum specific gravity (G_{mm}) 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 for process control purposes.

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 laying operations.

334-5.2 Limitations of Paving Operations:

334-5.2.1 General: Place 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 or prime coat, 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 Ambient Air Temperature: Place the mixture only when the air temperature in the shade and away from artificial heat meets the requirements of Table 334-5. The minimum ambient temperature requirement may be reduced by 5°F when using warm mix technology, if mutually agreed to by both the Engineer and the Contractor.

Table 334-5 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
FC-5[(1)]	65
[(1)] As an exception, place the mixture at temperatures no lower than 60°F, only when approved by the Engineer based on the Contractor's demonstrated ability to achieve a satisfactory surface texture and appearance of the finished surface. For mixtures containing PG 76-22 binder, the minimum ambient temperature may be further reduced to 55°F when using warm mix technology, if agreed to by both the Engineer and the Contractor.	

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 30°F 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 Table334-6. Notify the Engineer of the rejection immediately.

Table 334-6 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 mixture 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 that 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 Surface Preparation:

334-5.5.1 Cleaning: Before placing the mixture, clean the surface of the base or underlying pavement 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 300-7. Control application rate within plus or minus 0.01 gallon 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 300-7
Tack Coat Application Rates

Asphalt Mixture Type	Underlying Pavement Surface	Target Tack Rate (gal/yd^2)[1]
Base Course, Structural Course, Dense-Graded Friction Course, Open-Graded Friction Course	Newly Constructed Asphalt Layers	0.06
	Milled Asphalt Pavement Surface, Oxidized and Cracked Asphalt Pavement, Concrete Pavement	0.09

Note 1: 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 0.02 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. When using a spray paver, the requirements above do not apply.

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: Place all asphalt mixtures by the stringline method to obtain an accurate, uniform alignment of the pavement edge. As an exception, pavement edges adjacent to curb and gutter or other true edges do not require a stringline. Control the unsupported pavement edge to ensure that it will not deviate from the stringline more than plus or minus 1.5 inches.

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, standing 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 Table 334-6, 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.

334-6.4 Hand Work: In limited areas where the use of the paver is impossible or impracticable, the Contractor may place 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. When determining 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.

When the average spread rate for two consecutive days is beyond plus or minus 5% of the target spread, stop the construction operation at any time 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 334-5.10.4, 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 coverages 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 or use the following standard rolling pattern:

1. Breakdown rolling: Provide two static coverages with a tandem steel-wheeled roller, following as close behind the paver as possible without pick-up, undue displacement, or blistering of the mix.

2. Intermediate rolling: Provide five static coverages with a pneumatic-tire roller, following as close behind the breakdown rolling operation as the mix will permit.

3. Finish rolling: Provide one static coverage with a tandem steel-wheeled roller, after completing the breakdown rolling and intermediate rolling, but before the surface pavement temperature drops to the extent effective compaction may not be achieved or the rollers begin to damage the pavement.

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: When laying fresh mixture against the exposed edges of joints, place it in close contact with the exposed edge to produce an even, well-compacted joint after rolling.

Place the mixture as continuously as possible to minimize transverse joints. When constructing permanent transverse joints, meet the surface requirements as defined in 334-6.10.3.1 Construct temporary transverse joints in such a manner to allow traffic to pass over it. When resuming the paving operation, construct a transverse joint by cutting back on the previously placed pavement at a location where the straightedge requirements are met. At the project limits, tie into the adjoining pavement layers as shown in the Plans.

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 straightedge requirements for transverse joints at the beginning and end of the project, at the beginning and end of bridge structures, at manholes, and at 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.

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 334-5.10.4, 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. The limits of the intersection will be from stop bar to stop bar for both the mainline and side streets.

As an exception, in the event the Engineer identifies an objectional surface irregularity in the above areas, straightedge and address all deficiencies in excess of 3/8 inch in accordance with 334-5.10.4.

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 (where possible) of the defective area for the full width of the paving lane, at no additional cost.

334-7 Acceptance of the Mixture.

334-7.1 General: 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: 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, 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 agency, 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 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 (G_{mm}) from the approved mix design. If the Contractor or Engineer suspects that the mix design G_{mm} is no longer representative of the asphalt mixture being produced, then a new G_{mm} 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 334-8.

Table 334-8
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 G_{mm}
Roadway Density (any single core)	Minimum 89.5% of G_{mm}

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 334-6.3.1. In addition, the Engineer will 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 will sample and test the material as described in 334-7.3.1. The Engineer will randomly obtain at least one set of samples per day. Assure that the asphalt content, gradation and density test results meet the criteria in Table 334-8. 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 agency, 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, open-graded friction courses, variable thickness overbuild courses, leveling courses, any asphalt layer placed on subgrade (regardless of type), miscellaneous asphalt pavement, bike/shared use paths, crossovers, gore areas, 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 testing 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. A random core location that occurs within the intersection shall be moved forward or backward from the intersection at the direction of the Engineer. 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 will be the weight of the mixture, in tons.

The bid price for the asphalt mix will include the cost of the liquid asphalt and the tack coat application as specified in 334-5.5.4. There will be no separate payment or unit price adjustment for the asphalt 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.

344 CONCRETE FOR LOCAL AGENCY PROGRAM (LAP) (CLASS - D). (REV 1-29-25) (FA 7-2-21) (FY 2025-26)

SECTION 344 is deleted and the following substituted:

SECTION 344
CONCRETE FOR LAP (OFF-SYSTEM)

344-1 Description.

344-1.1 General: Construct concrete structures and other concrete members, 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 of cast-in-place nonstructural 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.

344-1.2.2.1 Precast Concrete Drainage Structures and Box Culverts: Includes but are not manholes, junction boxes, endwalls, pipe culverts limited to reinforced and non-reinforced concrete pipes, french drains, underdrains, inlets, storm sewers, and box culverts.

344-1.2.2.1 Incidental Precast/Prestressed Concrete Products: 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 or blended cement, aggregates, and water, with or without chemical admixtures or supplementary cementitious materials. Deliver concrete to placement site in a freshly mixed, unhardened state. Ensure concrete is placed and cured in a manner that ensures the strength and durability of the concrete are maintained. Ensure all materials used in concrete are free from deleterious materials. Meet the following requirements:

344-2.1.1 Portland Cement: Use portland cement meeting the requirements of AASHTO M 85 or ASTM C150. Do not comingle cement of different types or from different sources.

344-2.1.2 Blended Cement: Use blended cement meeting the requirements of AASHTO M 240 or ASTM C595. Store different brands of cement, cement of the same brand from different facilities, or different types of cement separately.

344-2.1. 3 Coarse and Fine Aggregates: Use aggregates meeting the requirements of ASTM C33.

344-2.1.4 Water: Use water meeting the requirements of ASTM C1602.

344-2.1.5 Chemical Admixtures: Use chemical admixtures meeting the requirements of ASTM C494 and ASTM C260. Add admixtures at the dosage rates recommended by the manufacturer.

344-2.1.6 Supplementary Cementitious Materials: Use supplementary cementitious materials meeting the requirements of ASTM C618 and ASTM C989, as applicable. Do not use coal ash derived from the burning of municipal garbage or other refuse.

344-3 Production, Mixing and Delivery of Concrete.

344-3.1 Concrete Production Requirements:

344-3.1.1 Concrete Work Category 1: Use a concrete production facility that is certified by the National Ready Mixed Concrete Association (NRMCA) or listed on the FDOT's Non-Structural Concrete Production Facility Listing with an Accepted QC Plan. Concrete production facilities listed on the FDOT Structural Concrete Production Facility Listing with an Accepted QC Plan may also be used for Category 1.

344-3.1.2 Concrete Work Category 2: Obtain precast concrete products from plants with an approved by National Cert Program or that are currently on the FDOT's Concrete Production Facility Listing with an Accepted QC Plan for the types of products that they are producing.

344-3.1.3 Concrete Work Category 3: Use a concrete production facility that is certified by the National Ready Mixed Concrete Association (NRMCA) or listed on the FDOT's Structural Concrete Production Facility Listing with an Accepted QC Plan.

344-3.2 Classes of Concrete: Meet the requirements of Table 344-1.

Table 344-1 Concrete Class Requirements[10]				
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)[9]
Category 1				
Class NS[8]	2,500	N/A	N/A	N/A
Category 3				
I (Seal)	3,000	0.53	470[6]	8
I (Pavement)[4] [11]	3,000	0.50	470[6]	1.5 or 3
II[2]	3,400	0.53	470	3[1]
II (Bridge Deck)	4,500	0.44	600[5]	3[1]
III	5,000	0.44	600[5] [7]	3[1]
III (Seal)	3,000	0.53	600[5]	8
IV	5,500	0.41[3]	600[5]	3[1]
IV (Drilled Shaft)	4,000	0.41	600[5]	8.5
V (Special)	6,000	0.37[3]	600[5]	3[1]
V	6,500	0.37[3]	600[5]	3[1]
VI	8,500	0.37[3]	600[5]	3[1]
VII	10,000	0.37[3]	600[5]	3[1]

Notes:
(1) For increased slump concrete, flowing concrete, SCC and slip form concrete meet the requirements of 346-3.1.
(2) 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 II concrete for precast endwalls, inlets, manholes and junction boxes.
(3) 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.
(4) If 28-day strength is 2,500 or greater, concrete may be accepted if 28-day compressive strength is reached by 56 days.
(5) 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 pounds per cubic yard and 510 pounds per cubic yard, respectively.
(6) Request the use of concrete mixes with a lower amount of total cementitious materials content at the Contractor's option. The mix design must meet the requirements of Section 9.2 Volume II of the Materials Manual.
(7) When precast three-sided culverts, box culverts, endwalls, inlets, manholes or junction boxes require a Class III concrete, minimum cementitious materials content may be reduced to 470 pounds per cubic yard.
(8) Recycled Asphalt Pavement (RAP) may replace up to 20% of the total aggregate in the design mix. Use RAP from a Department approved stockpile.
(9) Tolerance for slump is ± 1.5 inches.
(10) The required air content for all classes of concrete is less than or equal to 6.0%.
(11) For Class I (Pavement), air content testing is not required.

344-3.3 Contractors Quality Control: , Assume full responsibility for controlling all operations and processes such that the requirements of these Specifications are always met.

For Concrete Work 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 agrees with the QC plan.

344-3.4 Concrete Mix Design: Before producing any concrete, submit the proposed mix designs to the Engineer for approval. Materials amounts may be adjusted provided that the theoretical yield requirement of the approved mix design is met. Show all required mix data and batch adjustments on an Engineer approved concrete delivery ticket.

344-3.5 Delivery: For concrete for Concrete Work Category 3, the maximum allowable transit time of concrete is 90 minutes. With the Engineer's approval, the transit time may be extended.

Furnish a delivery ticket on a form approved by the Engineer with each batch of concrete before discharging 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 Concreting in Cold Weather: Do not mix or place concrete when the air temperature at placement is below 40°F.

During the curing period, if the National Oceanic and Atmospheric Administration (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 Agency.

344-3.6.2 Concreting in Hot Weather: Hot weather concreting is defined as the production, placing and curing of concrete when the concrete temperature at placing exceeds 86°F but is less than 100°F. Unless the specified hot weather concreting measures are in effect, reject concrete exceeding 85°F at the time of placement. Regardless of special measures taken, reject concrete exceeding 100°F.

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 Agency.

344-3.7 Mixers: Operate all concrete mixers at speeds and volumes per the manufacturer's design or recommendation as stipulated on the mixer rating plate. Produce a completely uniform mixed concrete in a truck mixer for a minimum of 70 revolutions at the mixing speed designated by the truck manufacturer.

When Volumetric Mixers are used, for concrete for Concrete Work Category 1, deliver concrete in accordance with the Volumetric Mixer Standards of the Volumetric Mixer Manufacturers Bureau (VMMB) VMMB 100-01.

344-3.8 Small Quantities of Concrete: For Concrete Work Category 1, 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.

344-3.9 Sampling and Testing:
Perform concrete sampling and testing in accordance with the following methods:

Table 344-2 Concrete Sampling and Testing Methods	
Description	Method
Slump of Hydraulic Cement Concrete	ASTM C143
Air Content of Freshly Mixed Concrete by the Pressure Method	ASTM C231
Air Content of Freshly Mixed Concrete by the Volumetric Method	ASTM C173
Making and Curing Test Specimens in the Field	ASTM C31
Compressive Strength of Cylindrical Concrete Specimens	ASTM C39
Obtaining and Testing Drilled Core and Sawed Beams of Concrete	ASTM C42
Initial Sampling of Concrete from Revolving Drum Truck Mixers or Agitators	FM 5-501
Low Levels of Chloride in Concrete and Raw Materials	FM 5-516
Density (Unit Weight), Yield and Air Content (Gravimetric) of Concrete	ASTM C138
Temperature of Freshly Mixed Portland Cement Concrete	ASTM C1064
Sampling Freshly Mixed Concrete (1)	ASTM C172
Concrete Resistivity as an Electrical Indicator of its Permeability	AASHTO T 358
Notes: (1) Take the test sample from the middle portion of the batch in lieu of collecting and compositing samples from two or more portions, as described in ASTM C172.	

344-3.9.1 Concrete for Concrete Work 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: Concrete for Concrete Work Category 2: No sampling and testing is required by the Engineer for Category 2.

344-3.9.3 Concrete for Concrete Work Category 3: The Engineer will randomly select a sample from each LOT to determine its plastic properties and to make a minimum of three 4 x 8-inch cylinders for testing by the Engineer at 28 days to ensure that the designed 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.

344-4 Acceptance of the Work.

344-4.1 Concrete Work Category 1: Concrete will be accepted based on certification by the batcher and contractor on the delivery ticket.

344-4.2 Concrete Work Category 2: Certify that the precast elements were produced by production facilities that are currently on the FDOT's Concrete Production Facility Listing, with an Approved QC Plan, 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 Concrete Work Category 3: Concrete will be accepted based on certification by the batcher and contractor on the delivery ticket as described in 344-3.5 and the Engineer's test

results for plastic properties and compressive strength requirements for the class of concrete as defined in Table 344-2.

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.

SCOPE OF WORK – INTENT OF CONTRACT.
(REV 10-25-21) (FA 1-26-22) (FY 2025-26)

ARTICLE 4-1 is expanded by the following:

The Improvements under this Contract consist of adding a 7.0' buffered bike lane to each side of the roadway, and the replacement of the sidewalk on one side of the roadway..

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – LAWS TO BE OBSERVED - COMPLIANCE WITH FEDERAL ENDANGERED SPECIES ACT AND OTHER WILDLIFE REGULATIONS (BEAR).
(REV 6-6-17) (FA 6-13-17) (FY 2025-26)

SUBARTICLE 7-1.4 is expanded by the following:

The Department has determined that Florida black bears (*Ursus americanus floridanus*) occur in the project area. Unless stored overnight in a sealed, manufacturer-labeled bear-resistant container or in a locked metal container, remove garbage and food debris from the construction site daily to eliminate possible sources of food that could encourage and attract bears. Human bear conflicts are to be reported to the FWC Hotline at 1-888-404-3922.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – LAWS TO BE OBSERVED – COMPLIANCE WITH FEDERAL ENDANGERED SPECIES ACT AND OTHER WILDLIFE REGULATIONS (SCRUB-JAYS).
(REV 5-14-20) (FA 7-7-20) (FY 2025-26)

SUBARTICLE 7-1.4 is expanded by the following:

The Department has determined that the project occurs within known habitat of scrub-jays (*Aphelocoma coerulescens*).

The Department will provide instruction at a preconstruction meeting regarding:

1.The presence of the species.
2.The appearance, habits and biology of the species.

3.Their protected status.

4.The civil and criminal penalties for harming, harassing, or killing the species.

Advise all work crews of this information.

As depicted in the Plans, install an exclusion silt fence around scrub jay habitat. Install fence prior to initiation of ground-disturbing activities. Maintain fence throughout construction.

Avoid disturbing or clearing scrub jay habitat from within delineated areas.

Remove fence after construction is complete.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – LAWS TO BE OBSERVED - COMPLIANCE WITH FEDERAL ENDANGERED SPECIES ACT AND OTHER WILDLIFE REGULATIONS (GOPHER TORTOISE).
(REV 6-15-17) (FA 6-20-17) (FY 2025-26)

SUBARTICLE 7-1.4 is expanded by the following:

Certain gopher tortoise (*Gopherus Polyphemus*) burrows are to remain within the project area, as shown in the Plans, and must be protected. Avoid ground disturbing impacts within a 25 foot radius of each burrow. Install and maintain silt fence in accordance with Section 104 as a means of burrow avoidance, ensuring that it opens towards the offsite project limits, does not herd tortoises toward an obstacle, and that burrows are not fully encircled. Install fence prior to any other construction activity. Replace fence in the same location as the original fence. Remove fence upon completion of construction.

Silt fence intended for burrow avoidance may also be used as silt fence for erosion control but shall not be considered as the only silt fence needed for erosion control purposes within the project limits.

Follow the gopher tortoise species requirements posted in the URL address in 7-1.4 when gopher tortoises are observed or previously unidentified burrows are discovered.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC –LAWS TO BE OBSERVED - COMPLIANCE WITH FEDERAL ENDANGERED SPECIES ACT AND OTHER WILDLIFE REGULATIONS (INDIGO SNAKE).
(REV 5-25-17) (FA 6-13-17) (FY 2025-26)

SUBARTICLE 7-1.4 is expanded by the following:

The Department has determined that eastern indigo snake (*Drymarchon corais couperi*) habitat exists in the project limits. Implement the Standard Protection Measures for the Eastern Indigo Snake published by the US Fish and Wildlife Service which are available at: Eastern Indigo Snake Conservation | U.S. Fish & Wildlife Service (fws.gov).

THIS COMPLETES THIS SPECIFICATIONS PACKAGE

ADDITIONAL ITEM NO. 1
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
COLLIER BOULEVARD BIKE LANE IMPROVEMENTS
ENVIRONMENTAL RESOURCE GENERAL PERMIT 11-110327P

Following is a copy of the South Florida Water Management District Environmental Resource General Permit for the project. The Contractor shall still be responsible for all Stormwater Pollution Prevention Control throughout the project and shall obtain an NPDES Generic Permit for Stormwater Discharge from Large and Small Construction Activities from the Florida Department of Environmental Protection. Upon completion of the project, and approval from the City, the Contractor shall close out this permit.

South Florida Water Management District
Environmental Resource General Permit No. 11-110327-P
Date Issued: May 21, 2024

Permittee: City Of Marco Island
50 Bald Eagle Drive
Marco Island, FL 34145

Project: City Of Marco Island, Collier Blvd Alternate Bike Lanes

Location: Collier County, See Exhibit 1

Application No. 240129-42180

Description: The project is located along various roads within the City of Marco Island, Collier County. Refer to Exhibit No. 1.0 Location Map. The proposed activities include constructing 7-foot buffered bike lanes on each side of the roadway. Roadways include segment #1: Amazon Court, Castaway Street, Saturn Court, and Greenbrier Street. Segment #2 consists of: Peru Street, Seagrape Drive, and Swallow Avenue. Construction includes the removal of the existing 4-foot sidewalk and replacement with a 5-foot sidewalk; replacement of an existing watermain; replacement of existing driveways and culvert pipes. This project will not create any new vehicle travel lanes. Some of the roadside ditches will be regraded and supplemented with additional storm sewers. Existing drainage patterns will be maintained. The total disturbed area will be limited to 6.29 acres. Refer to Exhibit No. 2.0 SWM Plans for additional information.

Rule: **62-330.447, F.A.C.:** General Permit to the Florida Department of Transportation, Counties, and Municipalities for Minor Activities within Existing Rights-of-Way or Easements

Expiration: May 21, 2029

Your application to use a General Environmental Resource Permit has been approved. This action is taken based on Chapter 373, Part IV, of Florida Statutes (F.S.) and the rules in Chapter 62-330, Florida Administrative Code (F.A.C.). Please read this entire agency action thoroughly and understand its contents.

This permit is subject to:

- Not receiving a filed request for a Chapter 120, F.S., administrative hearing.
- The attached General Conditions for Environmental Resource General Permits.
- The attached Specific Conditions.
- All referenced Exhibits.

Should you object to these conditions, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the "Notice of Rights", we will assume that you concur with the District's action.

Certificate of Service

I hereby certify that this written notice has been mailed or electronically transmitted to the Permittee (and the persons listed in the distribution list) on May 21, 2024 , in accordance with Section 120.60(3), F.S. Notice was also electronically posted on this date through a link on the home page of the District's website (www.sfwmd.gov/ePermitting).

Rich Batewell, III, P.E.

General Conditions for All General Permits, 62-330.405, F.A.C.

1. The general permit is valid only for the specific activity indicated. Any deviation from the specified activity and the conditions for undertaking that activity shall constitute a violation of the permit and shall subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.

2. The general permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any construction, alteration, operation, maintenance, removal or abandonment authorized by this permit; and it does not authorize any violation of any other applicable federal, state, local, or special district laws (including, but not limited to, those governing the "take" of listed species).

3. This general permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the general permit.

4. The general permit does not relieve the permittee from liability and penalties when the permitted activity causes harm or injury to: human health or welfare; animal, plant or aquatic life; or property. It does not allow the permittee to cause pollution that violates state water quality standards.

5. Section 253.77, F.S., provides that a person may not commence any excavation, construction, or other activity involving the use of state-owned or other lands of the state, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund without obtaining the required consent, lease, easement, or other form of authorization authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on state-owned lands.

6. The authorization to conduct activities under a general permit may be modified, suspended or revoked in accordance with Chapter 120, F.S., and Section 373.429, F.S.

7. The general permit is not transferable to a new third party. To be used by a different permittee, a new notice to use a general permit must be submitted in accordance with rule 62-330.402, F.A.C. Activities constructed in accordance with the terms and conditions of a general permit are automatically authorized to be operated and maintained by the permittee and subsequent owners in accordance with subsection 62-330.340(1), F.A.C. Any person holding the general permit, persons working under the general permit, and owners of land while work is conducted under the general permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to sale, conveyance, or other transfer of ownership or control of the permitted project, activity, or the real property at which the permitted project or activity is located.

8. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the permitted system to ensure conformity with the plans and specifications approved by the general permit.

9. The permittee shall maintain any permitted project or activity in accordance with the plans submitted to the Agency and authorized in this general permit.

10. A permitee's right to conduct a specific activity under this general permit is authorized for a duration of five years.

11. Activities shall be conducted in a manner that does not cause or contribute to violations of

state water quality standards. Performance-based erosion and sediment control best management practices shall be implemented and maintained immediately prior to, during, and after construction as needed to stabilize all disturbed areas, including other measures specified in the permit to prevent adverse impacts to the water resources and adjacent lands. Erosion and sediment control measures shall be installed and maintained in accordance with the State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Environmental Protection and Florida Department of Transportation, June 2007), available at https://www.flrules.org/Gateway/reference.asp?No=Ref-04227, and the Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008), available at http://publicfiles.dep.state.fl.us/DEAR/Stormwater_Training_Docs/erosion-inspectors-manual.pdf.

12. Unless otherwise specified in the general permit, temporary vehicular access within wetlands during construction shall be performed using vehicles generating minimum ground pressure to minimize rutting and other environmental impacts. Within forested wetlands, the permittee shall choose alignments that minimize the destruction of mature wetland trees to the greatest extent practicable. When needed to prevent rutting or soil compaction, access vehicles shall be operated on wooden, composite, metal, or other non-earthen construction mats. In all cases, access in wetlands shall comply with the following:
(a) Access within forested wetlands shall not include the cutting or clearing of any native wetland tree having a diameter four inches or greater at breast height;
(b) The maximum width of the construction access area shall be limited to 15 feet;
(c) All mats shall be removed as soon as practicable after equipment has completed passage through, or work has been completed, at any location along the alignment of the project, but in no case longer than seven days after equipment has completed work or passage through that location; and
(d) Areas disturbed for access shall be restored to natural grades immediately after the maintenance or repair is completed.

13. Barges or other work vessels used to conduct in-water activities shall be operated in a manner that prevents unauthorized dredging, water quality violations, and damage to submerged aquatic communities.

14. The construction, alteration, or use of the authorized project shall not adversely impede navigation or create a navigational hazard in the water body.

15. Except where specifically authorized in the general permit, activities must not:
(a) Impound or obstruct existing water flow, cause adverse impacts to existing surface water storage and conveyance capabilities, or otherwise cause adverse water quantity or flooding impacts to receiving water and adjacent lands; or
(b) Cause an adverse impact to the maintenance of surface or ground water levels or surface water flows established pursuant to section 373.042, F.S., or a Works of the District established pursuant to section 373.086, F.S.

16. If prehistoric or historic artifacts, such as pottery or ceramics, projectile points, stone tools, dugout canoes, metal implements, historic building materials, or any other physical remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, the permitted project shall cease all activities involving subsurface disturbance in the vicinity of the discovery. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance Review Section (DHR), at (850)245-6333, as well as the appropriate permitting agency office. Project activities shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and the proper authorities notified in accordance with section 872.05, F.S.

17. The activity must be capable, based on generally accepted engineering and scientific

principles, of being performed and of functioning as proposed, and must comply with any applicable District special basin and geographic area criteria.

18. The permittee shall comply with the following when performing work within waters accessible to federally- or state-listed aquatic species, such as manatees, marine turtles, smalltooth sawfish, and Gulf sturgeon:
(a) All vessels associated with the project shall operate at "Idle Speed/No Wake" at all times while in the work area and where the draft of the vessels provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
(b) All deployed siltation or turbidity barriers shall be properly secured, monitored, and maintained to prevent entanglement or entrapment of listed species.
(c) All in-water activities, including vessel operation, must be shut down if a listed species comes within 50 feet of the work area. Activities shall not resume until the animal(s) has moved beyond a 50-foot radius of the in-water work, or until 30 minutes elapses since the last sighting within 50 feet. Animals must not be herded away or harassed into leaving. All onsite project personnel are responsible for observing water-related activities for the presence of listed species.
(d) Any listed species that is killed or injured by work associated with activities performed shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1(888)404-3922 and ImperiledSpecies@myFWC.com.
(e) Whenever there is a spill or frac-out of drilling fluid into waters accessible to the above species during a directional drilling operation, the FWC shall be notified at ImperiledSpecies@myfwc.com with details of the event within 24 hours following detection of the spill or frac-out.

19. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any activity authorized by the general permit.

20. The permittee shall immediately notify the Agency in writing of any submitted information that is discovered to be inaccurate.

Specific Conditions for General Permits, 62-330.447, F.A.C.

1. (a) The permittee shall limit stream channel relocation to streams which have an average discharge of 10 cubic feet per second or less. The length of relocated channels or those significantly altered shall be limited to 200 feet per stream. A stream channel shall be altered only when such a measure will reduce the long term adverse water quality impacts and will maintain or restore the stream's natural hydraulic capability; and

   (b) This general permit shall not apply to ditch construction in Class I or Class II surface waters, Outstanding National Resource Waters or waters designated as Outstanding Florida Waters.

   (c) Activities under this general permit must not diminish existing stormwater treatment, attenuation, or conveyance capacity.

   (d) This general permit does not authorize the construction of additional traffic lanes. Activities that require additional traffic lanes must first obtain an individual environmental resource permit under this chapter, as applicable, before the start of construction.

Project Work Schedule for Permit No. 11-110327-P

The following activities are requirements of this Permit and shall be completed in accordance with the Project Work Schedule below. Please refer to General Conditions, Special Conditions and/or Specific Conditions for more information. Any deviation from these time frames will require prior approval from the District's Environmental Resources Bureau and may require a modification to this permit. Such requests must be made in writing and shall include: (1) reason for the change, (2) proposed start/finish and/or completion dates, and (3) progress report on the status of the project.

Condition No.	Date Added	Description (Application Number)	Due Date	Date Satisfied
SC 4	05/21/2024	Construction Commencement Notice	Prior to Construction	
SC 6	05/21/2024	Submit Certification	30 Days After Construction Completion	
SC 6	05/21/2024	Pre-Construction Meeting	Prior to Construction	

GC = General Condition

SC = Special Condition

Distribution List

David Schmitt, Hole Montes A Bowman Company

Audubon of Florida

Div of Recreation and Park - District 4

US Army Corps of Engineers - Permit Section

Exhibits

The following exhibits to this permit are incorporated by reference. The exhibits can be viewed by clicking on the links below or by visiting the District's ePermitting website (http://my.sfwmd.gov/ePermitting) and searching under this application number 240129-42180 .

Exhibit No. 1.0 Location Map

Exhibit No. 2.0 SWM Plans

NOTICE OF RIGHTS

As required by Chapter 120, Florida Statutes, the following provides notice of the opportunities which may be available for administrative hearing pursuant to Sections 120.569 and 120.57, Florida Statutes, or judicial review pursuant to Section 120.68, Florida Statutes, when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Some of the legal proceedings detailed below may not be applicable or appropriate for your situation. You may wish to consult an attorney regarding your legal rights.

RIGHT TO REQUEST ADMINISTRATIVE HEARING

A person whose substantial interests are or may be affected by the South Florida Water Management District's (District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Florida Statutes. Persons seeking a hearing on a District decision which affects or may affect their substantial interests shall file a petition for hearing in accordance with the filing instructions set forth herein within 21 days of receipt of written notice of the decision unless one of the following shorter time periods apply: (1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Florida Statutes; or (2) within 14 days of service of an Administrative Order pursuant to Section 373.119 (1), Florida Statutes. "Receipt of written notice of agency decision" means receipt of written notice through mail, electronic mail, posting, or publication that the District has taken or intends to take final agency action. Any person who receives written notice of a District decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

If the District takes final agency action that materially differs from the noticed intended agency decision, persons who may be substantially affected shall, unless otherwise provided by law, have an additional point of entry pursuant to Rule 28-106.111, Florida Administrative Code.

Any person to whom an emergency order is directed pursuant to Section 373.119(2), Florida Statutes, shall comply therewith immediately, but on petition to the board shall be afforded a hearing as soon as possible.

A person may file a request for an extension of time for filing a petition. The District may grant the request for good cause. Requests for extension of time must be filed with the District prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and whether the District and any other parties agree to or oppose the extension. A timely request for an extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

FILING INSTRUCTIONS

A petition for administrative hearing must be filed with the Office of the District Clerk. Filings with the Office of the District Clerk may be made by mail, hand-delivery, or e-mail. Filings by facsimile will not be accepted. A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the Office of the District Clerk at the District's headquarters in West Palm Beach, Florida. The District's normal business hours are 8:00 a.m. – 5:00 p.m., excluding weekends and District holidays. Any document received by the Office of the District Clerk after 5:00 p.m. shall be deemed filed as of 8:00 a.m. on the next regular business day.

Additional filing instructions are as follows:

- Filings by mail must be addressed to the Office of the District Clerk, 3301 Gun Club Road, West Palm Beach, Florida 33406.
- Filings by hand-delivery must be delivered to the Office of the District Clerk. Delivery of a petition to the District's security desk does not constitute filing. It will be necessary to request that the District's security officer contact the Office of the District Clerk. An employee of the District's Clerk's office will receive and process the petition.
- Filings by e-mail must be transmitted to the Office of the District Clerk at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the Office of the District Clerk receives the complete document.

INITIATION OF ADMINISTRATIVE HEARING

Pursuant to Sections 120.54(5)(b)4. and 120.569(2)(c), Florida Statutes, and Rules 28-106.201 and 28-106.301, Florida Administrative Code, initiation of an administrative hearing shall be made by written petition to the District in legible form and on 8 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, District file number or any other District identification number, if known.
2. The name, address, any email address, any facsimile number, and telephone number of the petitioner, petitioner's attorney or qualified representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the District's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the District's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the District's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the District to take with respect to the District's proposed action.

MEDIATION

The procedures for pursuing mediation are set forth in Section 120.573, Florida Statutes, and Rules 28-106.111 and 28-106.401–.405, Florida Administrative Code. The District is not proposing mediation for this agency action under Section 120.573, Florida Statutes, at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Section 120.68, Florida Statutes, and in accordance with Florida Rule of Appellate Procedure 9.110, a party who is adversely affected by final District action may seek judicial review of the District's final decision by filing a notice of appeal with the Office of the District Clerk in accordance with the filing instructions set forth herein within 30 days of rendition of the order to be reviewed, and by filing a copy of the notice with the appropriate district court of appeals via the Florida Courts E-Filing Portal.

ADDITIONAL ITEM NO. 2
SUMMARY OF ROADWAY AND
UTILITY TRENCH TESTING REQUIREMENTS

Following is a Summary of Roadway and Utility Trench Test requirements found in the City of Marco Island Construction Standards Handbook for Work Within the Public Right of Way (latest edition) and the City of Marco Island Water & Sewer Department Manual of Standards and Specifications (latest edition).

ITEM	TEST FREQUENCY	TEST REQUIREMENT
A. TRENCH REQUIREMENTS		
1. Utility Trench (Outside Pavement)		
a. FDOT 57 Stone, Bottom to Spring Line	None Required	None Required
b. Select Backfill, Spring Line to 8" Above Pipe	None Required	None Required, (Compact Thoroughly)
c. Trench Backfill, 12" Lifts	One Every 800 LF	98% Modified Proctor
2. Utility Trench (Bike Lane-Longitudinal)		
a. FDOT 57 Stone, Bottom to Spring Line	None Required	None Required
b. Select Backfill, Spring Line to 8" Above Pipe	None Required	None Required (Compact Thoroughly)
c. Trench Backfill, 12" Lifts	One Every 400 LF	98% Modified Proctor
d. Lime Rock Base, 12" Lifts	One Every 400 LF	98% Modified Proctor
3. Utility Trench (Roadway Crossing)		
a. FDOT 57 Stone, Bottom to Spring Line	None Required	None Required
b. Select Backfill, Spring Line to 8" Above Pipe	None Required	None Required (Compact Thoroughly)
c. Trench Backfill, 12" Lifts	One Each Lane Per Lift	98% Modified Proctor
d. Lime Rock Base, 12" Lifts	One Each Lane Per Lift	98% Modified Proctor
B. BIKE LANE CONSTRUCTION		
a. Subgrade	1 Test/1,000 LF	LBR 40
b. Lime Rock Base, 6" Lift	1 Test/500 LF Per Lift	98% Modified Proctor
c. Asphalt Cores	1 Core/500 LF	1 Core (For Thickness)

ADDITIONAL ITEM NO. 3
FLORIDA FISH & WILDLIFE CONSERVATION COMMISSION
MIGRATORY BIRD NEST REMOVAL

Following is a copy of the Florida Fish & Wildlife Conservation Commission Migratory Bird Nest Removal Authorization. The Contractor shall be responsible for becoming familiar with this authorization and its requirements.

Migratory Bird Nest Removal

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
Division of Habitat and Species Conservation, Wildlife Diversity Conservation Section
620 South Meridian Street, MS 2A, Tallahassee, FL 32399-1600, (850) 921-5990

Permit Owner Name:	city of marco island	Permit Number:	LSNR-24-00029
Permit Owner Address:	50 Bald Eagle Dr. MARCO ISLAND, FLORIDA 34145 UNITED STATES	Effective Date: Expiration Date:	February 6, 2024 June 30, 2025

Agent Name:	Nancy Richie
Agent Address:	Island Environmental & Marine Services, LLC 553 Somerset Court MARCO ISLAND, FLORIDA 34145 UNITED STATES

IS AUTHORIZED TO:

1. Incidentally take the Florida burrowing owl (Athene cunicularia floridana), whereas 'take' for the purpose of this permit shall consist of authorization to non-lethally 'harass' owls by flushing (frightening without making physical contact) owls away from the burrow, inserting a burrow-video scope into the burrow, excavating and filling an inactive (i.e., containing no eggs or flightless young) burrow incidental to right-of-way construction pursuant to Rules 68-1, 68A-27 F.A.C., and in accordance with the Florida Burrowing Owl Species Conservation Measures and Permitting Guidelines.

AUTHORIZED LOCATION(S):

The Bike Lane Improvements in City of Marco Island Public Right of Way (Segment 1 Amazon Court to San Marco Road/Segment 2 Winterberry Drive to Collier Court (represented by Michael McNees), located at 50 Bald Eagle Drive, with Parcel Identification Number: 57360360006, at Latitude 25° 54' 48.91" N Longitude 81° 43' 31.41" W, within Marco Island, Collier County, Florida.

Permittee Signature: Michael A. McNees Date: 3-25-24

Not valid unless signed. By signature, confirms that all information provided to issue the permit is accurate and complete, and indicates acceptance and understanding of the provisions and conditions listed below. **Any false statements or misrepresentations when applying for this permit may result in felony charges and will result in revocation of this permit.**

Authorized By: Angela Williams Authorized for: Melissa Tucker, Division Director

Authorizing Signature: Angela L. Williams Date: 02/06/2024

Wildlife Diversity Conservation Section

PERMIT CONDITIONS AND PROVISIONS:

1

1. The Florida burrowing owl was reclassified from status of species of special concern to threatened, effective January 11, 2017. Accordingly, former Migratory Bird Nest Removal permits for burrowing owls are now issued as Listed Species Incidental Take permits in accordance with Rule 68A-27. Permit number LSNR-24-00029 (as indicated above) is interchangeable with Listed Species Incidental Take permit number LSIT-24-00029 in FWC

records.

2. Burrowing owls typically nest between February 15 – July 10. However, the burrowing owl pair may begin nesting before or finish nesting after this timeframe for many reasons. The Agent must carefully monitor and scope the nest to document the actual nesting season for the owl pair to confirm the nest status (e.g. active or inactive) before under taking action under this permit.

3. Four (4) inactive burrowing owl nest burrow(s) comprising three (3) burrow cluster(s) situated on authorized area above may be destroyed in association with commercial construction provided that:

A. The Authorized Agent (or their subpermittee who is also an authorized agent) performs the burrow inspection and destruction during the above effective and expiration dates (see provision below) within 48 hours before initiating activities in the active part of the project site (e.g., the area scheduled for clearing/grading, utility installation, etc.). If the Permittee is unable to begin project activities within 48 hours of the Agent excavating and filling the burrow(s), the Permittee or Agent shall conduct daily monitoring to ensure that burrowing owls do not attempt to return to the site. If project activities are delayed beyond the 48-hour window, the Permittee via the Agent must contact the Permit Office to request an amendment of the permit for additional authorization to take the owls via harassment.

B. Such destruction is done at a time when the burrow does not contain any eggs or owls (e.g. flightless chicks, juveniles, or adults). Any juvenile capable of flying or adult owls physically present at the burrow may be gently flushed away by the Authorized Agent without physical contact using non injurious methods to facilitate burrow inspection prior to excavating and filling the burrow.

C. In the event the Agent cannot determine if the nest burrow is inactive (e.g., the owls retreat into the burrow and will not exit, burrow entrance seems somewhat decorated, etc.) it must be inspected internally via a burrow-video scope.

i. If eggs or flightless chicks are seen in the burrow on the burrow-video scope, the burrow is deemed active and may not be excavated. Adult owls must be allowed to return to the burrow and the burrow must be roped off in accordance with bullets 2 through 4 in Appendix C of the Florida Burrowing Owl Species Conservation Measures and Permitting Guidelines by at least a 10 foot buffer until the nest is inactive (e.g. contains no eggs or flightless young). This office must be contacted immediately at (850) 921-5990 or at WildlifePermits@MyFWC.com Monday-Friday during business hours to report the number of eggs and/or young observed in the burrow and report the behavior of the adults. The information must be reported by email at WildlifePermits@MyFWC.com when conducted during non-business hours.

ii. If the Agent's scoping results are inconclusive (i.e., one cannot determine the contents of the burrow due to obstruction or other causes) and the burrow has one or two adult owls present and/or has a decorated appearance, the burrow shall be classified as active and may not be destroyed. The burrow must be roped off as stated above in provision 3.C.i. until deemed inactive.

D. If the Agent's scoping results reveal that owls are no longer present within the burrow and the burrow is determined to be inactive (i.e., does not contain eggs or flightless young), the Agent may carefully excavate or dig up the burrow(s). To excavate or dig a burrow the Agent should carefully start digging from the entrance of the burrow, working towards the end, one small section at a time, either by hand or with small hand tools taking care to remove the roof of the burrow without contacting any potential burrow contents.

i. The Agent may fill the burrow with substrate upon determining that the end of the burrow has been reached and that there are no eggs or flightless young present. The burrow area shall be rendered inaccessible for further owl nesting activity (e.g., cover the burrow area with a resistant cloth/substrate, fencing etc.).

ii. Should the Agent find eggs or flightless young within the burrow(s), they must stop excavating, and immediately attempt to carefully reconstruct the burrow by placing a piece of 4" diameter corrugated drain-field tubing in the section of the burrow that was excavated and cover with soil. Alternatively, a 6" PVC pipe or corrugated drain-field tubing with a 3" slot cut out of the bottom can be used to allow the owls to walk on soil. Plywood or something similar can be placed over the excavated portion to shelter the eggs or chicks until the tubing or PVC can be obtained and put in place. The reconstructed burrow must be observed to see if the adult birds return to the nest burrow. And the area must be roped off with at least a 10 foot buffer. This office must be contacted immediately at (850) 921-5990 or at WildlifePermits@MyFWC.com Monday-Friday during business hours to provide an overview of the burrow reconstruction effort, report the number of eggs and/or young observed in the burrow and record the behavior of the adult owls. The information must be reported by email

at WildlifePermits@MyFWC.com when conducted during non-business hours.

4. Any injury and/or mortality of burrowing owls or other listed species must be reported to this office at WildlifePermits@MyFWC.com and by upload to the permit account in the Online Permit System. Injured wildlife should be taken to a FWC licensed wildlife rehabilitation facility (https://myfwc.com/media/5423/licensedwildliferehabilitatorsbyregion.pdf). Disposition of carcasses those specimens is subject to individual approval by the Commission.

5. The Permittee via their Agent shall minimize and mitigate impacts to burrowing owls as follows, which are specific conditions of this Permit:

A. Minimization. The Permittee has offered and FWC has accepted minimization measures (typically performed by the Agent) for species impact as described below. Each minimization measure described herein is a specific condition of this Permit:

i. No construction activities will occur within 10 feet of the burrow, when the burrow is active (eggs or flightless young in the burrow). The burrow(s) will be staked and roped off in accordance with bullets 2 through 4 in Appendix C of the Florida Burrowing Owl Species Conservation Measures and Permitting Guidelines with a 10 foot buffer, until the nest burrow becomes inactive (e.g. young are able to fly), per provision 3.D. above.

B. Mitigation. The Permittee and FWC have agreed upon conservation measures for species impacts as described below in accordance with the Florida Burrowing Owl Species Conservation Measures and Permitting Guidelines. Each conservation measure described herein is a specific condition of this permit:

i. The Permittee will make a $5,700.00 ($1,900.00 per cluster) payment to the Imperiled Species Permitting Conservation Fund (Fund) to support activities which provide a conservation benefit for Florida burrowing owls. The financial contribution must be mailed to the Fish and Wildlife Foundation of Florida (Foundation), Attention: Imperiled Species Permitting Conservation Fund, P.O. Box 11010, Tallahassee, Florida 32302 along with the enclosed routing form.

6. The Permittee's Agent may execute this Permit by scoping (and once determined to be inactive), excavating then filling the authorized burrows only after the Permittee signed copy of the permit <and conservation payment receipt from the Foundation is uploaded to the permit account in the Online Permit System . The permit and redacted payment receipt must also be posted on-site per provision 11 below.

7. This permit does not authorize incidental take of wildlife their nests and any parts thereof that are state listed Threatened species [see Titles 68A-27, Florida Administrative Code (F.A.C.) for complete listing of excluded species] or Bald eagles [Haliaeetus leucocephalus] 68A-16.002 F.A.C, other than those indicated in the above provisions. Permits for take of additional species must be secured separately prior to conducting said activity. In such cases, contact the Permit Coordinator at the address given above.

8. The activities authorized under this Permit may be carried out by the Permittee unless otherwise specified above or Authorized Agent where stated and with the assistance of any employee or contractor under their control as Subpermittees/Assistants. The Agent must be always present on-site during scoping, excavating, and filling burrows, with Subpermittee/Assistants who are not in possession of an approved Registered Agent permit. Accordingly, all such activities are the responsibility of the Permittee or Authorized Agent. The Permittee and Authorized Agent shall be as fully responsible for any such activities to the same extent as if they had themselves carried out those activities under this Permit. The Permittee or Authorized Agent must obtain a Registered Agent permit in the Online Permit System. Then use the Manage Assistants tool on the Home Menu to submit the name and contact information of designated Subpermittees/Assistants, prior to that Subpermittee/ Assistant assisting with or performing any activities authorized under this permit. The FWC reserves the right to deny a Permittee's designation of an individual as its Subpermittee/Assistant for just cause. Contact the Protected Species Permit Coordinator at WildlifePermits@MyFWC.com for additional information.

9. Federal authorization or permit(s) must be obtained from the United States Fish and Wildlife Service (USFWS) before embarking upon activities involving or impacting active nests of Migratory Bird Treaty Act (MBTA) species, all nests of Endangered Species Act (ESA) species and other federally protected species.

10. This Permit does not authorize access to any public or private properties. The Permittee, Agent and their subpermittees/assistants must secure permission from the appropriate landowner or land manager prior to conducting any activity authorized under this permit.

11. The original Permittee-signed Permit and the Foundation receipt of payment letter (or complete copy(ies) of each) must be prominently posted on the Project site for inspection by all authorized officials (including but not restricted to FWC, USFWS, local building and zoning, law enforcement) prior to engaging in the scoping, excavation and collapsing of burrowing owl nest burrows and shall always remain posted until construction activities are complete. The Permittee and/or Agent is required to make the permit available upon request by the above entities, after construction activities are complete for the duration of the permit.

12. The Permittee and Agent must ensure that the species conservation benefit (e.g. mitigation) described in provision 5.B. are met over the life of the permit or provide acceptable new benefits via request for a permit amendment in the Online Permit System.

13. The Permittee (e.g. current property owner) and their Agent are required to notify this office in writing, if the property is subject to transfer ownership prior to the Permit expiration date. The Permittee and Agent along with the new property owner must request to have the Permit transferred to the pending new owner (transferee) and their Agent (if applicable) by providing the following:

A. Written notice of change in property ownership (including the name and address of the proposed new owner),

B. Copy of the legally binding instrument effectuating the property transfer (e.g. final sales contract, deed, other conveyance or transfer documentation, etc.),

C. Notarized written agreement by the transferee (new property owner) acceptable to the FWC, binding the transferee to the mitigation requirement of $5,700.00 or maintenance of vegetation and integrity of the starter/artificial burrow mouth and t-perch for on-site mitigation per provision condition 5.B. of this Permit to the same extent as the original Permittee.

D. Summary of any activities performed under the permit (per reporting requirement below) and statement/proof of initiation or completion of the mitigation.

14. FWC will approve the transfer via a permit amendment, unless it determines that the transferee has not provided reasonable assurance that 1) the property is officially transferred and/or 2) they can and will comply with the Permit (e.g. proposed inadequate conservation benefit or coverage less than the life of the original permit, etc.).

15. The Permittee and Agent or transferor transferring this Permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to issuance of a permit amendment or as a result of permit violations on the property after change in ownership but while former owner and agent still holds the permit.

16. The Permittee/Agent by signature above confirms that representatives of the Florida Fish and Wildlife Conservation Commission (Commission) have his/her permission as the landowner(s) to enter on and inspect the property(ies) described in the application (herein incorporated by reference) and any documents associated with this permit for all reasonable purposes pertaining to applicable Commission rules.

17. The Permittee via the Agent shall submit a final report (using report form) within 90 days subsequent to permit expiration to the Protected Species Permit Coordinator, Wildlife Diversity Conservation Planning Section, by uploading it to the permit account (using the Upload File function) in the Online Permit System (System). The report shall include the date of establishment for starter burrow(s) or artificial burrow(s), whether burrowing owls were observed using the burrow(s), the date on which burrowing owls were first observed using the burrow(s), and observations of young burrowing owls, (e.g., number of young, location in proximity to burrow, activity, etc.) and photographs of each starter or artificial burrow with posting, signage or other protective measures, if applicable. Requests for permit renewal should be submitted at least 45 days prior to the time it is needed in the Online Permit System . All permit renewal (or amendment) requests must contain a copy of the above referenced report. Copies of any other reports or publications, which result from the work, must also be provided upon their availability.

18. The Permittee via the Agent must provide notice of completion of construction activity to this office in the Online Permit System (System).

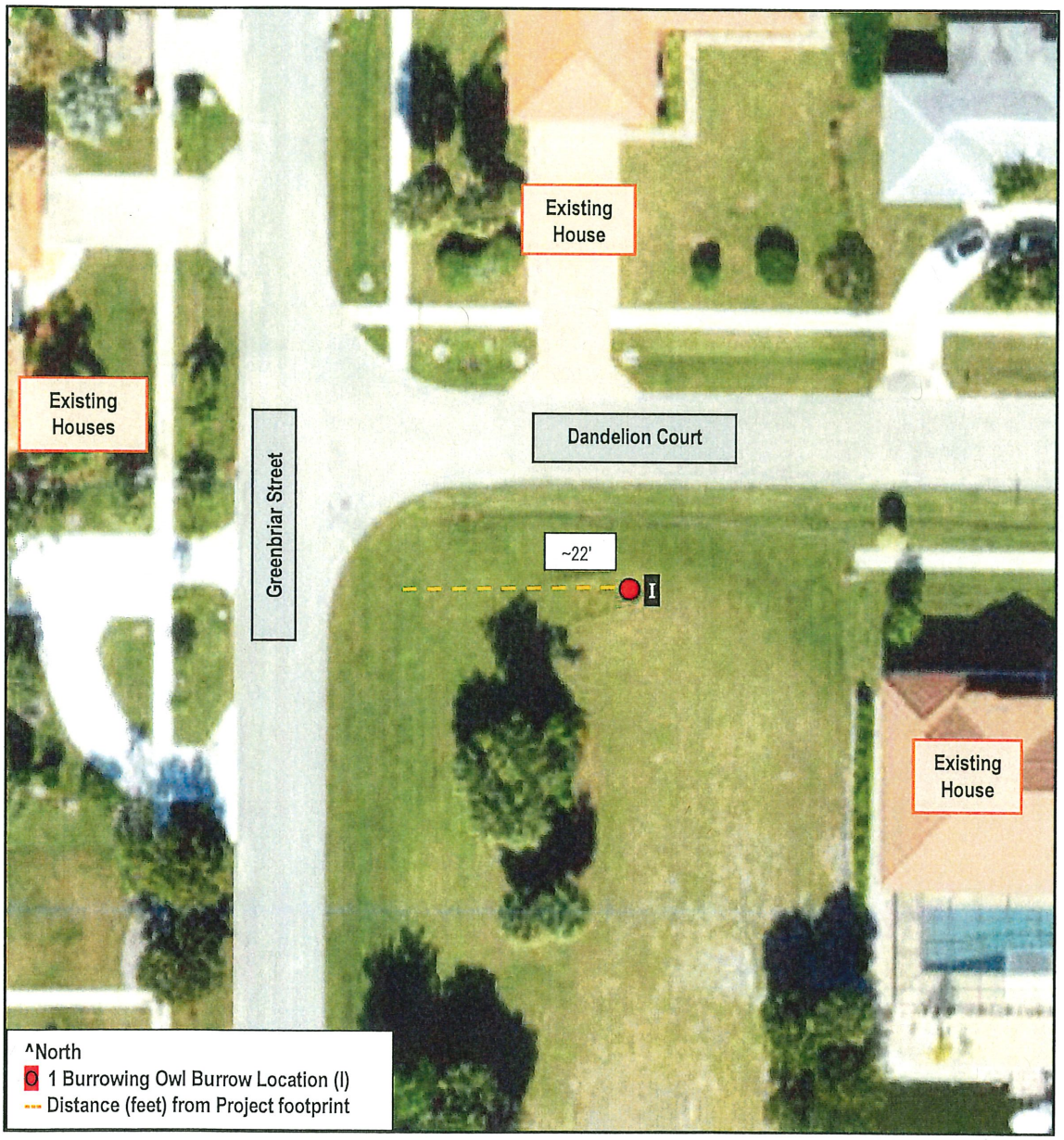
19. This Permit can be suspended, revoked or not renewed for just cause, pursuant to 68-1.010, Florida Administrative Code and Chapter 120, Florida Statutes.

A person whose substantial interests are affected by FWC's action may petition for an administrative proceeding (hearing) under sections 120.569 and 120.57 of the Florida Statutes. A person seeking a hearing on FWC's action shall file a petition for hearing with the agency within 21 days of receipt of written notice of the decision. The petition must contain the information and otherwise comply with section 120.569, Florida Statutes, and the uniform rules of the Florida Division of Administration, chapter 28-106, Florida Administrative Code. If the FWC receives a petition, FWC will notify the Permittee. The attached Explanation of Rights statement provides additional information as to the rights of parties whose substantial interests are or may be affected by this action.

Date: Monday, October 02, 2023
Consultant: Nancy J. Richie, Island Environmental & Marine Services, LLC, FWC Permit RAG# 18-00022
Project: City of Marco Collier Blvd. Bike Lane Improvements
Segment #1: From Amazon Court to San Marco Road
Segment #2: From Winterberry Drive to Collier Court
FDOT Financial Project Number: 448127-1-58-01 / Phase II (Plans)
Listed Species: Burrowing Owl (BUOW) - 7 Potentially Occupied burrows; occupied by 2 adult BUOW; Currently Inactive
1 Abandoned Burrow; posting will be removed

SEGMENT #1: AMAZON CT TO SAN MARCO RD (AMAZON CT-CASTAWAYS ST-SATURN CT-GREENBRIAR ST)

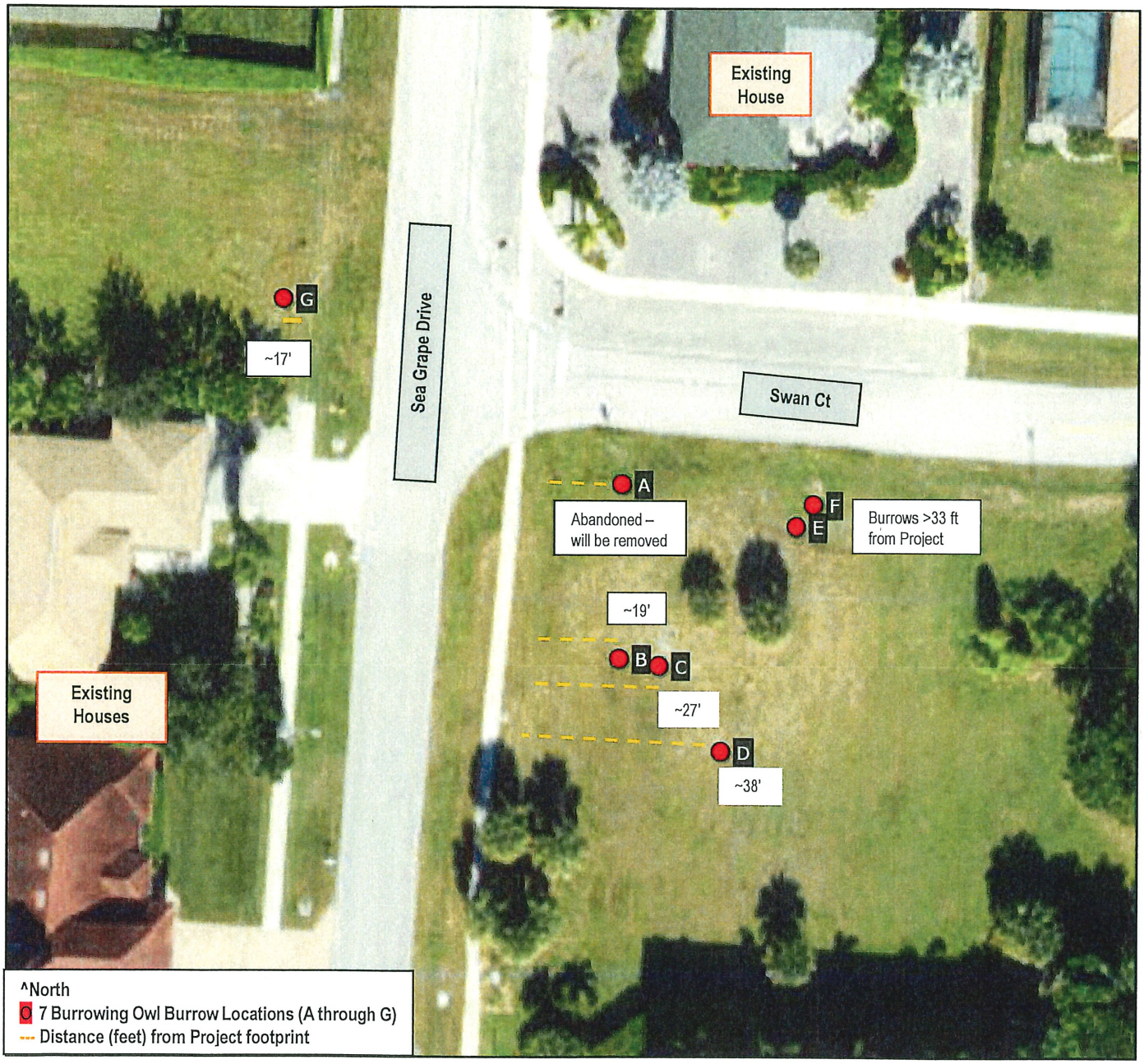
Map#	Latitude	Longitude	Description
I	25.940816	-81.730458	Potentially Occupied Burrow;Inactive;Unoccupied burrow intact with evidence of use;35 ft from edge of Greenbriar St;approx 22 ft from Project footprint



SEGMENT #2: WINTERBERRY DR TO COLLIER CT (PERU ST-SEA GRAPE DR-SWALLOW AVE-COLLIER CT)

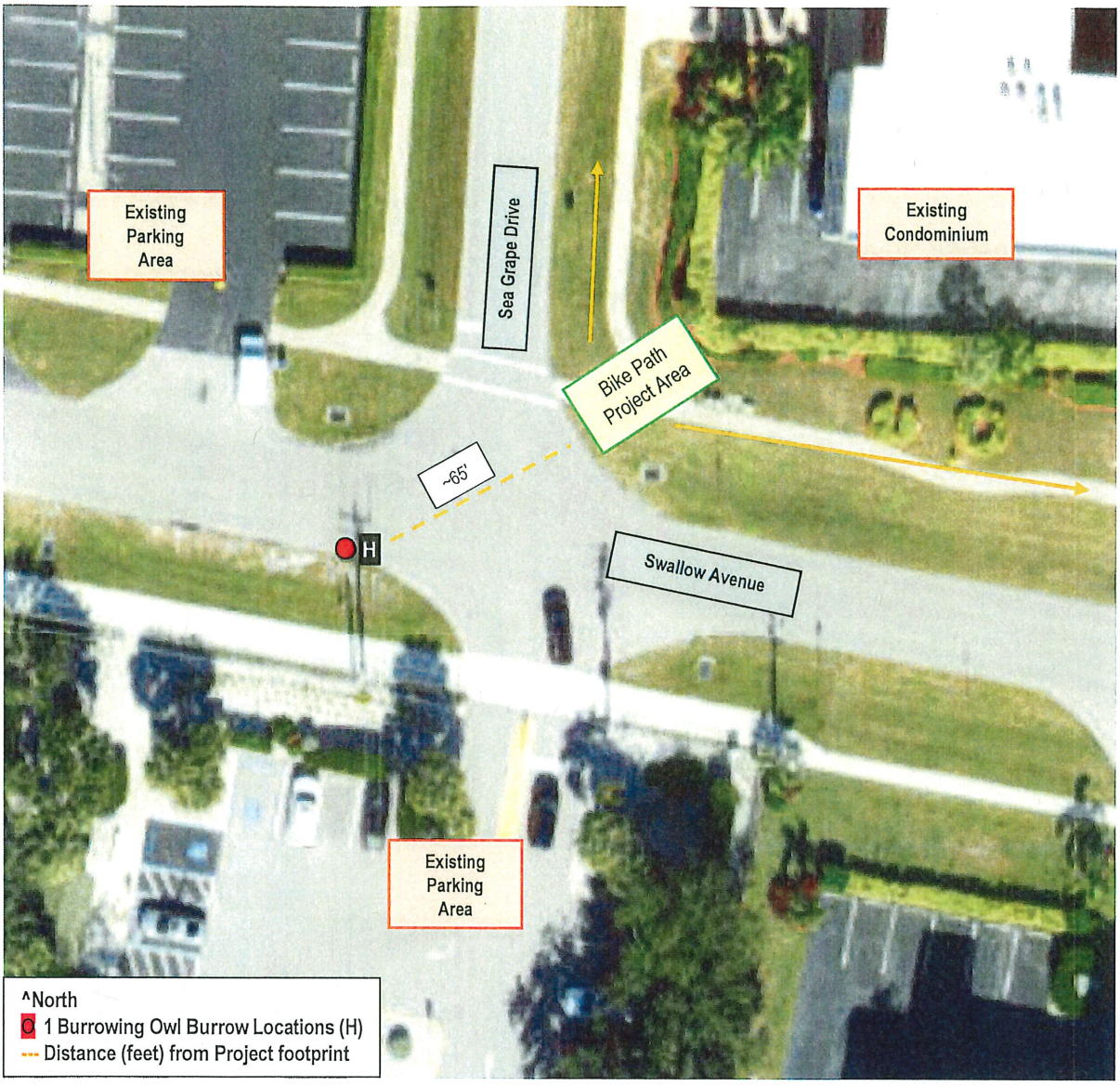
CMI South Bike Path Route - - Burrowing Owl Burrow Locations (Fall 2023)

Map #	Latitude	Longitude	Description
A	25.913711	-81.72539	Abandoned Burrow;naturally collapsed/eroded;Unoccupied;posting needs to be removed
B	25.913591	-81.725392	Potentially Occupied Burrow;Inactive;Unoccupied burrow intact with evidence of use;26 ft from edge of Sea Grape Drive;approx 19 ft from Project footprint
C	25.913586	-81.725361	Potentially Occupied Burrow;Inactive;Occupied burrow by 2 adult Owls;intact with evidence of use;34 ft from edge of Sea Grape Drive;approx 27 ft from Project footprint
D	25.913527	-81.725312	Potentially Occupied Burrow;Inactive;Unoccupied burrow intact with evidence of use;45 ft from edge of Sea Grape Drive;approx. 38 ft from Project footprint
E	25.913682	-81.725253	Potentially Occupied Burrow;Inactive;Unoccupied burrow intact with no evidence of use;46 ft from edge of Sea Grape Drive;approx 39 ft from Project footprint
F	25.913697	-81.72524	Potentially Occupied Burrow;Inactive;Unoccupied burrow intact with no evidence of use;48 ft from edge of Sea Grape Drive;approx 41 ft from Project footprint
G	25.913839	-81.725652	Potentially Occupied Burrow;Inactive;Unoccupied burrow intact with evidence of use;West side of Sea Grape Dr; approx. 20 ft from edge of Sea Grape Dr;13 ft from Project



BURROW LOCATION MAP FOR THE BIKE PATH SOUTH ROUTE: PERU ST-SEA GRAPE DR-SWALLOW AVE

Name	Latitude	Longitude	Description
H	25.912405	-81.725759	Potentially Occupied Burrow;Inactive;Unoccupied burrow intact with evidence of use;3 ft from edge of Swallo Ave under sign; across intersection from Project footprint



Nancy J. Richie

Nancy J. Richie
Island Environmental & Marine Services, LLC
Marine Biologist
FWC Authorized Gopher Tortoise Agent #GTA-15-00037C
FWC Registered Agent #RAG-18-00022
NMFS Protected Species Observer
UF-IFAS Master Naturalist
553 Somerset Court
Marco Island, FL 34145
239-404-5766 **nancyjrichie@gmail.com**

ADDITIONAL ITEM NO. 4
CITY OF MARCO ISLAND ASBESTOS WORK PLAN SPECIFICATION

Following is a copy of the City of Marco Island Asbestos Work Plan Specification. The Contractor shall coordinate all work with asbestos pipe and materials with the City. Neither Bowman or their representatives shall take responsibility for the work associated with the removal or modification of the City's asbestos pipe or materials.

ASBESTOS WORK PLAN

REPAIR, REMOVAL AND MAINTENANCE OF ASBESTOS-CONTAINING CEMENTITIOUS PIPES

(April 20, 2010)

ASBESTOS WORK PLAN

The following work plan is for the repair, removal, and maintenance of asbestos cement pipe (AC). This work plan should be considered as minimal guidelines for the disturbance of the material. The Contractor shall utilize all appropriate controls and work practices necessary to protect workers, people in the vicinity of the work area, and the environment, regardless of the inclusion or exclusion of this work plan. Contractor questions should be resolved prior to the start of the abatement project. The primary concerns and considerations of these work practices is the protection of human health and the environment, as well as to minimize the Owner's and Contractor's liability exposure before, during and after the abatement process.

GENERAL

The City of Marco Island shall employ the Contractor for the purpose of repair, removal, and maintenance of AC pipe.

INDEMINITY The Contractor shall indemnify, defend and save the Owner harmless from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of the Contractor and persons employed or utilized by the Contractor in the performance of the work associated with the project. The Contractor shall defend on behalf of the Owner, severally, or Owner and Contractor jointly, any claim or action for or arising out of the foregoing. The monetary limitation on the extent of indemnification pursuant to this paragraph shall be $1 million per occurrence.

The Contractor shall indemnify, defend, and save the Owner harmless against all damages, losses, and claims resulting from the activities, or lack of activities associated with the project. The Contractor shall defend on behalf of the Owner, severally, or Owner and Contractor jointly, any claim or action for or arising out of the foregoing.

REGLATIONS, CODES AND STANDARDS

The Contractor shall comply with all regulations, codes, and standards. These shall include, but are not limited to:

1 Title 29, Code of Federal Regulations, Section 1910.134 and 1926.1101. Occupational Safety and Health Administration (OSHA), US Department of Labor.

2 Title 40, Code of Federal Regulations, Part 61, Subparts A and M, National Emission Standards for Hazardous Air Pollutants. US Environmental Protection Agency (EPA).

3 State of Florida's Administrative Code 62-204.800. US EPA National Emission Standards for Hazardous Air Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M).

4 State of Florida, Chapter 62-257, Florida Administrative Code.

5 Florida Statutes, Chapter 469, Licensing Requirements (Exemptions 469.002)

6 State of Florida, City of Marco Island codes and ordinances as applicable.

CONTRACTOR STAFFING

1. All work will be supervised by a qualified individual meeting the requirements of a Competent Person* and possessing the following minimum qualifications and training:

a) Satisfactory completion of an Asbestos Abatement Project Supervisor course
    - Medical examination for respirator use
    - Fit test for respirator type
b) Training in the maintenance, repair, and removal of AC pipe

*A Competent Person, is capable of identifying existing asbestos hazards at the workplace, determine if a Negative Exposure Assessment (NEA) exists, is qualified to train other workers, and has the authority to take prompt corrective measures to eliminate a hazardous exposure. In addition, the competent person must be trained in a training course which meets the criteria of EPA's Model Accreditation (40 CFR 763) for supervisor.

2. Any direct contact with AC pipe will be performed by qualified workers possessing the following minimum qualifications and training:
a) Satisfactory completion of an OSHA Class II Worker course**
    - Medical examination for respirator use
    - Fit test for respirator type
b) Training in the maintenance, repair, and removal of AC pipe

**Class II Training Requirements must be met for work involving building materials including roofing, flooring, siding materials, ceiling tiles or transite panels training shall include at a minimum the elements in paragraph 29 CFR 1926.11.1 (k) (9)(iv)(A) and specific work practices and engineering controls set forth in paragraph (g). It shall include hands-on training, and it is to be at least 8 hours in length. Annual refresher course work is required. The length of time for the refresher training is not specified.

3. Personal Protective Equipment (PPE) for each worker will include hard hat, steel toed shoes, disposable protective clothing, respiratory protection, and high visibility reflective vests. Respirators shall be fitted with a P-100 filtering cassette. (The use of disposable protective clothing, and respiratory protection will be determined by the establishment of a Negative Exposure Assessment and continual personnel air monitoring).

1 WORK PROCEDURES
Controlling Government Regulation:
OSHA's Construction Industry Standard for Occupational Exposure to Asbestos Subpart Z, 29 CFR 1926.1101 Asbestos.

Work-Task Assumptions/Requirements of the Employer at Project Worksite:
Prior to commencing the demolition and removal of the AC pipe, the Contractor has:

(1) Determined by thorough inspection the existence and the extent of any ACM.
(2) Given written notice to appropriate governmental agency at the beginning of abatement activity.
(3) Conducted an Initial Exposure Assessment (IEA) test plan or baseline report, which complies with the criteria in Paragraph (f)(2)(iii) of the above referenced controlling government regulations (section), and which demonstrates that the employees' exposure to airborne asbestos fibers during removal of the Asbestos Cement (AC) pipe is expected to be consistently below the Permissible Exposure Levels (PELs) i.e. exposure must be less than 0.1 fiber/cubic centimeter (cc) of air for an eight (8) hour time-weighted average limit (TWA), and less than 1.0 fiber/cc of air as averaged over

a sampling period of thirty (30) minutes, all as determined by the method prescribed in Appendix A to the referenced section, or by an equivalent method, and therefore, the employer intends to do the AC pipe removal through the use of Negative Exposure Assessments (NEAs). Procedures for Removal of Asbestos Cements (AC) Pipe, Also Commonly Referred to as Transite Pipe. This work activity is identified as a Class II asbestos removal activity by OSHA's Subpart Z, 29 CFR 1926.1101, with the AC Pipe removal is being done utilizing a valid Negative Exposure Assessment (NEA).

Preparation

Establish a regulated work area (RWA) using barricade tape.

- Provide a hand/face wash station at the entry point to the RWA.
- Post asbestos warning signs at the RWA entry point.
- Establish a waste load-out area attached to the RWA.
- Once an RWA is established and work begins, no access should be permitted without the required personal protective equipment.
- Prior to commencing work at ten-day NESHAP notification (DEP Form 62-257.900(1) Effective 10-12-08) must be submitted to the Florida Department of Environmental Protection (FDEP) office located at the following address:

FDEP Air Resource Management
2295 Victoria Avenue, Suite 364
PO Box 2549
Fort Myers Florida 33902-2549

The form can be accessed online at:

http://www.dep.state.fl.us/air/rules/forms/asbestos/dep62_257_900(1).pdf Air Monitoring and Sampling of Exposure to Airborne Asbestos Fibers:

- As the work begins the competent person (or third-party consultant) must conduct and record objective data to confirm the Initial Exposure Assessment (IEA), and that the specific job site work activity confirms the finding s of the IEA, and that the PELS are not being exceeded for this work activity.

Excavation

- Machine excavate to expose AC pipe.
- Hand excavate areas under pipe where cuts/breaks are planned.
- Excavation operations should be carefully executed so that pipe damage does not occur prior to removal.

Abandonment of AC Pipes

- AC pipes can be abandoned in place. The procedure for abandonment of pipes in place includes filling the section of pipe with a grout/cement slurry. The location of the pipes should be recorded on the master drawing of the right of way.
- At no time will bursting, crushing, grinding, or pulverizing of the AC pipe be conducted.

AC Pipe Removal

All pipe cutting or breaking operations require adequate wetting with potable water to prevent AC materials from being crumbled by hand pressure and to keep the asbestos fibers from becoming air-borne (friable).

- Plan pipe cuts/breaks as necessary to accommodate the size/weight of pipe being removed.
- Use a hammer or wheel-type pipe cutter (or equivalent tool) to make the initial cut and drain the pipe of residual liquids. If gas powered cutters are to be used, they should be connected to a HEPA filtered vacuum and used in a manner that will not create elevated airborne fibers. In addition, a sufficient supply of water shall be applied to the cut point to further prohibit the release of asbestos fibers. A layer of 6 mil polyethylene should be placed beneath the cut point to contain the debris that will be generated. The debris shall be collected and treated as asbestos containing waste.
- Remove pipe sections at joint collars by breaking them with a sledgehammer or cutting them with a wheel-type pipe cutter (soil pipe cutter).
- Where pipe re-connection is required, trim pipe ends in a manner that will not cause asbestos fibers to become airborne. Any debris that is generated shall be collected and treated as asbestos containing waste.
- When applicable, remove pipe sections from trench in an “intact” condition. Wet and containerize waste materials as you go. Using lifting straps and methods that do not damage the pipe remove the material from the trench.
- Waste Pipes: The pipe should be placed in a leak tight waste container. An alternative option would be to wrap each section of pie with two layers of 6 mil polyethylene. For both options water should be applied to each section of pipe before it is contained.
- Identify AC materials and stockpile the waste in a designated load-out area with the following label warnings: (The label must also identify the generator of the AC pipe waste).

DANGER Contains Asbestos Fibers
Avoid Creating Dust
Cancer and Lung Disease Hazard

Transportation of Asbestos Waste
All asbestos containing waste shall be transported to a Class I landfill in leak tight containers. Each shipment must be properly marked with the following notation:
DANGER Contains Asbestos Fibers Avoid Creating Dust Cancer and Lung Disease Hazard

- All asbestos containing waste shall be disposed of in a timely manner at a Class I landfill. All waste must be disposed of within a 30-day period from the time of removal. A waste shipment record must be provided for each shipment.

References: Underground Contractors Association of Illinois Best Practices for Removing Asbestos Cement Pipe April 14, 2003