INVITATION TO BID

2025 ROADWAY IMPROVEMENT PROJECT

Invitation to Bid: 2025-006

Advertisement Date: Wednesday, August 20, 2025

Project Numbers: 24-232.01 Goat Island Road
24-231.02 Barnwell Street
24-232.03 Boyd Road
24-232.04 Timberline Lane
24-232.05 Reed Road

Bids Due: Thursday, September 25, 2025, 1:00 PM

Length: 2.86 Miles

Type: Cement Modified Subbase, HMA Pavement, Resurfacing, and Miscellaneous Related Items on Five (5) Roads in Clarendon County.

Engineer: Infrastructure Consulting & Engineering (ICE)

Contractor: _____

_____

_____

Table of Contents

Table of Contents Continued

SECTION I: NOTICE TO CONTRACTORS

Project Name: Clarendon CTC 2025 Roadway Improvement Project

Invitation to Bid: 2025-006

Project Location: Barnwell Street, Boyd Road, Goat Island Rd, Reed Rd., & Timberline Lane in Clarendon County

Bid Bond/Security: Required at 5% of the bid amount

Performance Bond: Required at 100% of the bid amount

Payment Bond: Required at 100% of the bid amount

DBE Participation: Encouraged at 5% or greater

Description of Project: Cement Modified Subbase, HMA Pavement, Resurfacing, and Miscellaneous Related Items on Five (5) Roads in Clarendon County.

Agency/Owner: Clarendon County, 411 Sunset Drive, Manning, SC 29102

Engineer: Infrastructure Consulting and Engineering, LLC, (ICE) 110 Midlands Court, West Columbia SC 29169, Brandon Payne, Email brandon.payne@ice-eng.com.

Questions: All questions, requests, and correspondence shall be addressed to Clarendon County Procurement Director, Jeff Hyde, jhyde@clarendoncountygov.org. All questions concerning the Bid Documents shall be in writing and submitted by September 15, 2025 before 3PM. All answers and questions posted on the County Website and BidNet Direct.

Plans on File: Clarendon County Procurement Website, BidNet Direct, and at Engineering Office, ICE.

Plans and Bidding Documents: May be obtained from Clarendon County Procurement Website and BidNet Direct

Plan Deposit: Plan copies may be obtained as an electronic copy for no charge from Clarendon County Procurement Website or $150.00 for hard copy from the EOR.

Pre-Bid Conference: There will be no pre-bid conference.

Bid Closing and Opening: September 25, 2025, 1:00 PM, Procurement Office, Voter Registration & Elections Building.

Bid Submittal: Submit Sealed Bids clearly marked "**ITB: 2025-006**" with the bidder's name, address, and South Carolina contractor license number on the envelope to: Clarendon County Procurement, Attn: Mr. Jeff Hyde, Procurement Director, Voter Registration & Elections Building, 3 South Church Street, Manning, SC 29102

Substantial Completion: Project will be completed prior to June 30, 2026.

IF YOU DOWNLOAD THIS DOCUMENT,

PLEASE EMAIL

Jeff Hyde at
jhyde@clarendoncountygov.org

Art Singley at
art.singley@ice-eng.com

SO YOU CAN RECEIVE ANY

ADDENDA OR OTHER MODIFICATIONS

THAT MAY BE ISSUED AT A LATER DATE

All addenda will be posted on the County Website and BidNet Direct

SECTION II: GENERAL CONDITIONS AND CONTRACT

GENERAL CONDITIONS

1. BID INSTRUCTIONS AND SUBMITTAL:
   a. Bids shall be publicly opened at the time and place as indicated in the *Notice to Contractors*.
   b. Sealed bids shall be enclosed and secured in an envelope bearing the markings as described under Bid Submittals in the *Notice to Contractors*. Bids shall be addressed to the Clarendon County Procurement Office, Attention: Mr. Jeff Hyde, Procurement Director, Voter Registration & Elections Building, 3 South Church Street, Manning, SC 29102
   c. Bids shall be submitted no later than **September 25, 2025, 1:00 PM**, if mailed or hand delivered in the places and manners as described in paragraph b above and on the date indicated by the *Notice to Contractors*. Bids received after these times are considered late bids. Late bids shall not be considered, unless the delay was caused by improper handling by the County's employees.
   d. The County shall not accept responsibility for unidentified bids.
   e. In the event that a bid is unintentionally opened prior to the official time set for the bid opening, the employee opening such bid shall immediately inform the Procurement Director or his/her assistant who shall, in the presence of another of equal rank or above, immediately contact the vendor submitting the bid.
   f. The vendor so contacted will be informed as to the circumstances and shall be invited to come to the office of Procurement to reseal and submit or withdraw the bid, if the vendor elects to reseal and submit the bid, such vendor shall be required to sign, date and indicate the time of resealing on the bid envelope. If the vendor directs the Procurement Office to reseal the bid, both the employee making the contact to the vendor and the owner witness present shall sign, date and indicate the time of sealing on the bid envelope.
   g. In the event that the Procurement Office is directed by the vendor to return the bid, a statement properly witnessed stating the action taken and when shall be duly filed.
   h. All prices and quotations shall be entered in ink or typewritten and shall remain firm for no less than sixty (60) days from the date of the bid. Mistakes may be crossed out and corrections inserted adjacent there to and shall be initialed in ink by the person signing the bid. The bidder shall insert the net price per stated unit and the extension against each item which he/she proposed to deliver. The price shall include in the grand total column all delivery charges, installation and applicable taxes when necessary.
   i. Bids Will Not Be Considered unless the bidder is legally qualified under the provisions of the South Carolina Contractor's Licensing Law (South Carolina Code of Laws as amended).
   j. Bids Will Not Be Considered unless sealed accompanied by a bidder's bond, for 5 percent (5%) of the amount of the bid. Bid bond will be duly executed by the bidder as principal & having as surety thereon a surety company licensed to do business in the State of South Carolina. Successful bidder shall be required to furnish a satisfactory performance & payment bond each in the amount of 100 percent (100%) of the bid.
   k. The County Reserves the Right to accept or reject any & all responses, to waive technicalities & informalities, to negotiate further with the Contractor of its choice, & to request additional information, to interview & to make an award deemed in its own best interest.

   All submittals shall become property of the County & is subject to the Freedom of Information Act (FOIA) regulations.

2. TAXES: When applicable, South Carolina sales tax shall be shown as a separate entry on the bid total summation. In other words, there shall be a bid subtotal with South Carolina tax added in to create a grand total. When required, exemption certificates shall be furnished on forms provided by the vendor.

3. PROPRIETARY INFORMATION: Bidders shall visibly mark as "CONFIDENTIAL" each part of their bid which considers proprietary information. Price may not be considered confidential proprietary information.

4. AMBIGUOUS BIDS: Bids which are uncertain as to terms, delivery, quantity, or compliance with requirements and/or specifications may be rejected or otherwise disregarded.

5. COVENANT AGAINST CONTINGENT FEES: The vendor warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the vendor for the purpose of securing business. For breach or violation of this warranty, Clarendon County shall have the right to annul this contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

6. BIDDER'S QUALIFICATIONS: Bids shall be considered only from bidders who are regularly established in the business called for and who in the judgment of the Owner are financially responsible and able to show evidence of their reliability, ability, experience, equipment supervised by them to render prompt and satisfactory service in the volume called for under this contract. All bidders for road paving and grading must be on the SCDOT list of approved contractors

7. ACKNOWLEDGEMENT OF AMENDMENTS TO REQUEST FOR BIDS:
   a. Bidders shall acknowledge receipt of any amendments to this solicitation either by signing and returning one (1) copy of the amendment or by letter or by telegram or by fax, or e-mail and by acknowledging the amendment on the Bid Form.
   b. Clarendon County must receive the acknowledgment by the time, date, and at the place specified for receipt of bids.

8. AFFIRMATIVE ACTION: The successful bidder will take affirmative action in complying with all Federal and State requirements concerning fair employment, employment of the handicapped, and concerning the treatment of all employees, without regard or discrimination by reason of race, color, religion, sex, national origin and/or physical handicap and to ENSURE EQUAL EMPLOYMENT OPPORTUNITY is provided for as applicable.

9. EXPLANATION TO PROSPECTIVE BIDDERS:
   a. Any prospective bidder desiring an explanation or interpretation of this solicitation shall request it in writing soon enough to allow a reply to reach all prospective bidders before submission of their bids.
   b. Oral explanation and/or instructions given before the award of the contract shall not be binding.
   c. Any information given to a prospective bidder pertaining to this solicitation shall be furnished promptly to other prospective bidders as an amendment, if that information is necessary in submitting bids or if the lack of it would be prejudicial to other prospective bidders.

10. AWARDING POLICY: The County reserves the right to select and award on an individual item basis, lot (group) basis or an "all or none" basis, whichever the County determines to be most advantageous. Therefore, individual prices per item must be indicated on the bid form. Bidders are encouraged to offer discounts for consideration of consolidated award. Furthermore, the County in determining the lowest responsible bidder on each of the items shall consider, in addition to the bid prices, the quality, training, suitability and adaptability of the services required by this solicitation. The County reserves the right to reject or accept any or all bids and to waive any informalities and/or irregularities thereof.

In the event that identical bids are received on like items, the Procurement Director, subject to the approval of the County Administrator, shall award bids by whichever of the following procedures is deemed most appropriate under the circumstances:

a. Award to the firm whose primary business establishment is physically located:
   i. within the boundaries of Clarendon County; and
   ii. within the boundaries of the State of South Carolina.
b. If all of the above are equal, the County shall award by a toss of a coin with all interested parties given an opportunity to witness. The County shall have a minimum of two witnesses for the coin toss.

11. WITHDRAWAL OF BIDS: Any bidder may withdraw his bid prior to the closing time scheduled for the receipt of bids. No bid shall be withdrawn for a period of sixty (60) days after the schedule closing time for the receipt of bids. The County reserves the right to award contracts for a period of sixty (60) days.

12. SUBMISSION OF DATA: Each bidder, upon request, shall submit evidence of Liability Insurance, Workmen's Compensation (if required), and other data regarding experience relating to this bid and proposes to satisfy the requirements of this solicitation and fulfillment of a contract.

13. ACCIDENTS: The vendor shall hold the County harmless from any and all damages and claims that may arise by reason of any negligence on the part of the vendor, his agents or employees in the performance of this contract. In case any action is brought against the County or any of its agents or employees, the vendor shall assume full responsibility for the defense thereof. Upon his failure to do so after proper notice, the County reserves the right to defend such motion and charge all costs thereof to the vendor. The vendor shall take all precautions necessary to protect the public against injury.

14. STATEMENT OF COMPLIANCES AND ASSURANCES: By submitting a bid and signing the bid schedule, vendors are providing written assurance of non-collusion and understanding, and acceptance of all general and special conditions stated in this contract. In addition, this signature certifies that the firm or agency represented in the bid submitted complies with all applicable federal and state laws and regulations.

15. BIDDERS RESPONSIBILITY: Each bidder shall fully acquaint himself/herself with conditions relating to the scope and restrictions attending the execution of the work under the conditions of this bid. It is expected that this will sometimes require on-site observation. The failure or omission of bidder to acquaint himself/herself with existing conditions shall in no way relieve the bidder of any obligations with respect to this bid or contract.

16. EXAMINATION OF RECORDS:
    a. The County Administrator of Clarendon County or his duly authorized representative(s) and/or duly authorized representative(s) from the office of the County Auditor shall, until three (3) years after final payment under this contract, have access to and the right to examine any of the Contractors' directly pertinent books, documents, papers or other records involving transactions related to this contract.
    b. He/She agrees to include in first-tier subcontracts under this contract a clause to the effect that the County Administrator of Clarendon County or his duly authorized representative(s), and/or duly authorized representative(s) from the office of the County Auditor shall, until three (3) years after final payment under the subcontract, have access to and the right to examine any of the subcontractors' directly pertinent books, documents, papers or other records involving transactions related to the subcontract(s).

17. MATERIALS REQUIRED: Materials required must be in conformity with the specifications, shall be subject to inspection and approval after delivery, and shall comply in quality and type of material and method of manufacture with all applicable local or state laws pertaining thereto. The right is reserved to reject and return at the risk and expense of the vendor such portions of any shipment which may be defective or fail to comply with specifications and without validating the remainder of the order.

18. "OR APPROVED EQUAL" CLAUSES: Certain processes, types of equipment or kinds of materials are described in the specifications and on the drawings by means of trade names and catalog numbers. In each instance where this occurs, it is understood and inferred that such description is followed by the words "or approved equal". Such method of description is intended merely as a means of establishing a standard of comparison. However, the County reserves the right to select the items which, in the judgment of the County, are best suited to the needs of the County, based on price, quality, service, availability and other relative factors. Bidders must indicate brand name, model, model number, size, type, weight, color, etc., of the item bid if not exactly the same as the item specified. Vendor's stock number or catalog number is not sufficient to meet this requirement. If any bidder desires to furnish an item different from that specifically mentioned in the specifications, he/she shall submit with his bid the information, data, pictures, cuts, designs, etc., of the material he/she plans to furnish so as to enable the County to compare the material specified; and, such material will be given due consideration. The County reserves the right to insist upon and receive the items as specified, if the submitted items do not meet the County's standards for acceptance.

19. PATENTS: The vendor shall hold the County, its officers, agents, and employees harmless from liability of any nature or kind whatsoever, on account of use by the publisher or author, manufacturer or agent, of any copyrighted or uncopyrighted composition, secret process, article or appliance furnished or used under this bid.

20. INSTALLATION: Where equipment is called for to be installed under this bid, it shall be placed, leveled and accurately fastened into place by the vendor. He/she shall be responsible for obtaining dimensions and other such data which may be required to assure exact fit to work under another contract or as intended by the County. The vendor shall be responsible providing an appropriate amount of lead-in to equipment requiring electrical, water or other basic service. The County will normally be responsible for bringing the appropriate service to the lead-in. The vendor shall completely remove from the premises all packing, crating, and other letter due to his/her work. He/she shall also be responsible for the cost of repair of any damage to existing work which is caused by him/her equipment.

21. GUARANTEE: The vendor shall supply a guarantee for all workmanship for the equipment he/she is furnishing for a period comparable to the standards in the industry. When defects or faulty material is discovered during the guarantee period, the vendor shall, immediately, upon notification by the County, proceed at his/her own expense, to repair or replace the same, together with any damage to all finishes, equipment, and furnishings that may have been damaged as a result of the defective equipment or workmanship.

22. PROPER INVOICE: Contractor will generate all invoices and submit to Engineer for concurrence prior to submittal to county for payment.

23. CONFLICTS IN SPECIFICATIONS: When contract language or specifications are in conflict, the Engineer shall choose the language/specification that is applicable to the project condition covered, and shall generally choose the more stringent, restrictive or costly language/specification.

24. SERVICE FACILITIES: In considering the services bid upon, the County shall take into consideration past performance of existing work and installations, service and facilities provided by the bidder. The bidder shall have available a local organization that is trained in proper construction methods.

25. S.C. LAW CLAUSE: Upon award of a contract under this bid, the person, partnership, association, or corporation to whom the award is made must comply with the laws of South Carolina which require such person or entity to be authorized and/or licensed to do business in this State. Notwithstanding the fact that applicable statutes may exempt or exclude the successful bidder from requirements that it be authorized and/or licensed to do business in this State, by submission of this signed bid, the bidder agrees to subject itself to the jurisdiction and process of the courts of the State of South Carolina as to all matters and disputes arising or to arise under the contract and the performance thereof, including any questions as to the liability for taxes, licenses, or fees levied by the State.

26. COMPETITION: There are no Federal or State laws that prohibit bidders from submitting a bid lower than a price or bid given to the United States Government. Bidders may bid lower than the United States Government Contract price without any liability because the State is exempt from provisions of the Robinson-Patman Act and other related laws.

27. EXCUSABLE DELAY: The Contractor shall not be liable for any excess costs of the failure to perform the contract arising out of causes beyond the control and without the fault or negligence of the Contractor. Such causes may include, but are not restricted to acts of God or of the public enemy, acts of the Government in either its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather; but, in every case the failure to perform must be beyond the control and without the fault or negligence of Contractor. If the failure to perform is caused by the default of a subcontractor, and if such default arises out of causes beyond the control of both the Contractor and subcontractor, and without the fault or negligence of either of them, the Contractor shall not be liable for any excess costs or failure to perform, unless the supplies or services to be furnished by the subcontractor were obtainable from other sources in sufficient time to permit the Contractor to meet the required delivery schedule.

28. ASSIGNMENT: No contract may be assigned, sublet, or transferred without a written consent of the Procurement Director.

29. SPECIFICATIONS: Any deviation from specifications indicated herein must be clearly pointed out; otherwise, it will be considered that items offered are in strict compliance with these specifications, and the successful bidder shall be held responsible thereof.

30. INCORPORATION BY REFERENCE: The contents of this Request for Bids, including all drawings, attachments, specifications, and any addenda, will become part of the contract for this Project.

31. PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT, UTILITIES, AND IMPROVEMENTS:
    a. The Contractor shall preserve and protect all structures, equipment, and vegetation (such as grass, trees, and shrubs) or on or adjacent to the work sites, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by any careless operation of equipment, or by workman, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with tree pruning compound as directed by the Engineer.

b. The Contractor shall protect from damage all existing improvements and utilities at or near the work site and on adjacent property of a third party, the locations of which are known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the County representatives(s) may recommend that the necessary work be performed and charge the cost to the Contractor.

32. BID FORMS: Documentation contained in Section "V" shall be completed and submitted along with the Proposal. A bid bond as required by these General Conditions shall also be included.

33. TERMINATION: Subject to the provisions below, the contract may be terminated by the Procurement Director providing a thirty (30) day advance notice in writing is given to the Contractor.
    a. Termination for Convenience. In the event that this contract is terminated or cancelled upon request and for the convenience of the County without the required thirty (30) day advance notice, then the County shall negotiate reasonable termination costs, if applicable.
    b. Termination for Cause. Termination by the County for cause, default or negligence on the part of the Contractor shall be excluded from the foregoing provisions; termination costs, if any, shall not apply. The thirty (30) day advance notice requirement is waived and the default provision in this bid shall apply.

34. SAFETY AND PROTECTION: Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to all persons on the Site or who may be affected by the Work, all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

35. SECURITY REQUIRED:
    a. Bid Security - Each Bid must be accompanied by a Bid Bond acceptable to the County. Bid Bonds must be issued by a corporate surety registered and authorized to do business in the State of South Carolina. Bid Bonds shall be payable to the County, shall be for at least five (5%) percent of the total amount of the Bid, and shall serve as a guarantee deposit that the bid will be carried out to the complete satisfaction of the County.
    b. Forfeiture of Bid Security - Nonperformance by the successful Bidder, or its failure to execute the Contract and meet performance and payment bond requirements and insurance requirements within five (5) calendar days after issuance of Notice of Award, shall result in its bid security being forfeited as liquidated damages, and the Notice of Award and Contract will be rescinded and awarded to another Bidder. Withdrawal or attempted withdrawal of a Bid after the closing date and time but prior to sixty (60) calendar days after the closing date may also result in forfeiture of bid security.
    c. Return of Bid Security - Bid security will be returned to all bidders after the successful Bidder has executed the Contract and delivered all required bonds and insurance certificates. Unsuccessful Bidders will not be entitled to any interest earnings on returned funds.
    d. Payment and Performance Security

i. The successful Bidder shall provide Performance and Payment Bonds, in a form satisfactory to the County (see Attached "Sample Forms"), in the following amounts no later than at the time of execution of the Contract:
   - Payment Bond: 100% of the total amount of the Contract.
   - Performance Bond: 100% of the total amount of the Contract.

ii. The aforesaid Payment and Performance Bonds must be issued by a corporate surety registered and authorized to do business in South Carolina and must be counter-signed by a licensed, authorized South Carolina agent.

iii. Attorneys-in-fact who sign Bid Bonds or Performance Bonds must file with each Bond a certified and effective, dated copy of their power of attorney.

iv. The time to be covered by the Performance Bond shall commence on the date of execution of any contract resulting from this ITB and terminate upon final payment to Bidder by County. The time to be covered by the Payment Bond shall commence on the date of execution of any contract resulting from this ITB and terminate twelve (12) months after the date of final acceptance of the Work by the County.

v. Contractor shall execute the attached Form of Agreement upon contract award.

36. CHANGE ORDER
    a. A Change Order is a written order to the Contractor, signed by the authorized County representative, directing changes in the work within the provisions of the Contract.
    b. A Change Order is used to change contract quantities for items with unit prices, provide for incentives, penalties, and adjustments for unit price items as provided in the original Contract, delete contract items, and revise contract time.
    c. A Change Order may include written agreement made and entered into by and between the Contractor and the Owner, covering alterations and unforeseen work incidental to the proper completion of the project, when such work is paid for at an agree unit or lump sum price. Such Change Order becomes a, part of the Contract when approved and properly executed.

37. PERMITS/LICENSING: It shall be the responsibility of the contractor to comply with County Ordinances by securing necessary permits and licenses.

38. ENVIRONMENTAL MANAGEMENT: Vendor/Supplier/Contractor will be responsible for complying with all federal, state, and local environmental regulations relating to transportation, handling, storage, spillage and any other aspect of providing the services specified herein, as applicable.

39. SITE INSPECTION:
    a. The bidder is expected to have become familiar with and take into consideration, site conditions which may affect the work and to check all dimensions at the site.
    b. Each bidder shall acquaint themselves thoroughly as to the character and nature of the work to be done. Each bidder furthermore shall make a careful examination of the site of the work and inform themselves fully as to the difficulties to be encountered in performance of the work, the facilities for delivering, storing and placing materials and equipment and other conditions relating to construction and labor.
    c. The bidder shall examine the premises and the site and compare them with any applicable drawings and specifications. He/she shall familiarize themselves with the existing conditions such as obstructive area levels and any problems related to erecting the required systems.

    d. No plea of ignorance of conditions that exist or may hereafter exist on the site of the work, or difficulties that may be encountered in the execution of the work, as a result of failure to make necessary investigations and examinations, will be accepted as an excuse for any failure or omission on the part of the Contractor to fulfill in every detail all the requirements of the

contract documents and to complete the work for the consideration set forth therein, or as a basis for any claim whatsoever.

e. Insofar as possible, the Contractor, in carrying out his/her work, must employ such methods or means as will not cause interruption of or interference with the work of any other Contractor, or County personnel at the site.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]

FORM OF AGREEMENT

BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT

THIS AGREEMENT is by and between **CLARENDON COUNTY** ("Owner") and

_____ ("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows*:* **Cement Modified Subbase, HMA Pavement, Resurfacing, and Miscellaneous Related Items on Five (5) Roads in Clarendon County.**

ARTICLE 2 – THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows: **2025 Roadway Improvement Project**

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by **INFRASTRUCTURE CONSULTING AND ENGINEERING, LLC (ICE)** (Engineer), which is to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 Time of the Essence

a. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 Dates for Substantial Completion and Final Payment

The project will be completed and ready for final inspection prior to June 30, 2026.

4.03 Liquidated Damages

a. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration preceding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner $1000.00 for each day that expires after the time specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner $1000.00 for each day that expires after the time specified in Paragraph 4.02 above for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined in the bid documents:

a. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	EXTENDED PRICE
1	BONDS AND INSURANCE	LS	1		
2	MOBILIZATION	EA	5		
3	TRAFFIC CONTROL	EA	5		
4	MAINTENANCE STONE	TON	100		
5	REMOVAL & DISPOSAL EXISTING TREE	EA	2		
6	CEMENT MODIFIED SUBBASE (8" UNIFORM) METHOD A	SY	29619		
7	ADDITIONAL ROCK FOR FULL DEPTH RECLAMATION (#57 STONE)	TON	3088		
8	PORTLAND CEMENT FOR CEM. MODIFIED SUBBASE (60 LBS / SY)	TON	891		
9	H/M ASPH. SURF. CR. TYPE E (Liquid Included) 100 #/SY	SY	28058		
10	H/M ASPH. SURF. CR. TYPE C (Liquid Included) 150 #/SY	SY	28600		
11	H/M ASPH. SURF. CR. TYPE C (Liquid Included) 220 #/SY	SY	2664		
12	PERMANENT CONST. SIGNS (GROUND MOUNTED) (Scheme E)	LF	240		
13	STATION GRADING	STA	22		
14	15" RCP	LF	200		
15	18" RCP	LF	80		
16	24" SLD. LINE - STOP / DIA. F.D. PNT	LF	56		
17	24" WHITE STOP BARS - THERMO 125 MIL.	LF	56		
18	4" YELLOW SOLID (NO PASSING) THERMO 90 MIL	LF	500		
19	PERM.YEL.PAV.MARK BI-DIR 4"X4"	EA	197		
20	PERMANENT VEGETATION	ACRE	3.81		
21	ORANGE BARRIER FENCE FOR WETLANDS	LF	725		
22	FULL DEPTH PAV'T PATCH - 6" UNIF.	SY	150		
				GRAND TOTAL:	

_____

(Grand Total in Words)

The Bid prices for Unit Price Work set forth as of the Effective Date of the Agreement are based on estimated quantities. As provided in the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer as provided in of the General Conditions.

ARTICLE 6 - PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

Contractor shall submit Applications for Payment in accordance with the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 Progress payments; Retainage

a. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the last day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below. All such payments will be measured by the schedule of values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

b. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with the General Conditions.

c. 95 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and

d. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

e. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 95 percent of the Work completed, less such amounts as Engineer shall

determine in accordance with the General Conditions and less 95 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

6.03 Final Payment

a. Upon final completion and acceptance of the Work in accordance with the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer.

ARTICLE 7 - INTEREST

7.01 All moneys not paid when due as provided in the General Conditions shall bear interest at a rate to be negotiated.

ARTICLE 8 – CONTRACTOR RESPONSIBILITIES

8.01 In order to induce Owner to enter into this Agreement, Contractor makes the following representations:

a. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
b. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
c. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
d. Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
e. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
f. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
g. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

a. The Contract Documents consist of the following:
b. This Agreement
c. Performance bond
d. Payment bond
e. General Conditions
f. Standard Specifications and Drawings as referenced in the bid documents.
g. The contents of the Request for Bids, including all drawings, attachments, specifications, and any addenda
h. 4 Plan sets totaling of 42 pages.
i. Addenda (numbers 0 to 0 inclusive).
j. Exhibits to this Agreement (enumerated as follows):
k. Contractor's Bid
l. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
    1. Notice to Proceed
    2. Work Change Directives.
    3. Change Orders.

4. The documents listed in paragraph 9.01.a are attached to this agreement (except as expressly noted otherwise above)

There are no contract documents other than those listed in this Article 9. The contract documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

a. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 Assignment of Contract

a. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 Successors and Assigns

a. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 Severability

a. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 Contractor's Certifications

a. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
   1. "Corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
   2. "Fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
   3. "Collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
   4. "Coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

REMAINDER OF PAGE INTENTIONALLY LEFT BLANK

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or have been identified by Owner and Contractor or on their behalf.

This Agreement will be effective on _____,2025, (which is the Effective Date of Agreement).

OWNER:

Clarendon County, South Carolina

By: _____

Title: _____

Attest: _____

Title: _____

Address for giving notices:

411 Sunset Drive

Manning, SC 29102

(If Owner is a corporation, attach evidence Of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

CONTRACTOR:

_____

By: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attaches evidence of authority to sign.)

Attest: _____

Title: _____

Address for giving notices:

_____

_____

License No.: _____

(Where applicable)

Agent for service of process:

_____

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that _____ as Principal, hereinafter called Contractor, and _____ as Surety, hereinafter called Surety, are held and firmly bound unto **Clarendon County, 411 Sunset Drive, Manning, SC 29102**, as oblige, hereinafter called Owner, in the amount of _____ Dollars ($_____), for the payment whereof Contractor and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Contractor has entered into a certain contract with the Owner, dated _____ day of _____, 2025, for the construction of: **2025 Roadway Improvement Project** in accordance with the Drawings and Specifications prepared by **INFRASTRUCTURE CONSULTING AND ENGINEERING, LLC (ICE)** which contract is by reference made a part hereof and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the Owner.

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

1) Complete the Contract accordance with its terms and conditions, or

2) Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or, if the Owner elects, upon determination by the Owner and the Surety jointly of the lowest responsible bidder, arrange for a contract between such bidder and Owner, and make available as Work progresses (even though there should be a default or a succession of defaults under the contract or contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the contract price", as used in this paragraph, shall mean the total amount payable by Owner to Contractor under the Contract and any
amendments thereto, less the amount properly paid by Owner to Contractor.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Owner named herein or the heirs, executors, administrators or successors of the Owner.

Signed and sealed this _____ day of _____, 2025.

PRINCIPAL	**SURETY**
_____ (Seal)	_____ (Seal)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By: _____	By: _____
Signature and Title	Signature and Title (Attach Power of Attorney)
Attest: _____	Attest: _____
Signature and Title	Signature and Title

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS that_____ as Principal, hereinafter called Principal, and _____ as Surety, hereinafter called Surety, are held and firmly bound unto **Clarendon County, Administration Building, 411 Sunset Drive, Manning, SC 29102**, as oblige, hereinafter called Owner, in the amount of _____ Dollars ($_____), for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has entered into a certain contract with the Owner, dated _____ day of _____, 2025, for the construction of:

Clarendon CTC 2025 Roadway Improvement Project.

in accordance with the Drawings and Specifications prepared by **INFRASTRUCTURE CONSULTING AND ENGINEERING, LLC (ICE)** which contract is by reference made a part hereof and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and material used or reasonably required for use in the
performance of the Contract, then this obligation shall be void; otherwise, it shall remain in full force and effect, subject, however, to the following conditions:

1. A claimant is defined as one having a direct contract with the Principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.

2. The above named Principal and Surety hereby jointly and severally agree with the Owner that every claimant as herein defined, who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such claimant's work or labor was done or performed, or materials were furnished by such claimant, may sue on this bond for the use of such claimant, prosecute the suit to final judgment for such sum or sums as may be justly due claimant, and have execution thereon. The Owner shall not be liable for the payment of any costs or expenses of any such suit.

3. No suit or action shall be commenced hereunder by any claimant:

   a) Unless claimant, other than one having a direct contract with the Principal, shall have given written notice to any two of the following: the Principal, the Owner, or the Surety above named, within ninety (90) days after such claimant did or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished, or for whom the work or labor was done or performed. Such notice shall be served by mailing the same by registered mail or certified mail,
   Postage prepaid, in an envelope addressed to the Principal, Owner, or Surety, at place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the aforesaid project is located, save that such service need not be made by a public officer.
   b) After the expiration of one (1) year following the date on which Principal Ceased Work on said Contract, it being understood, however, that if any limitation embodied in this bond is prohibited by any law controlling the construction hereof such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

4. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of mechanics' liens which may be filed of record against said improvement, whether claim for the amount of such lien be presented under and against this bond.

Signed and sealed this _____ day of _____, 2025.

PRINCIPAL

_____ (Seal)
Bidder's Name and Corporate Seal

By: _____
Signature and Title

Attest: _____
Signature and Title

SURETY

_____ (Seal)
Surety's Name and Corporate Seal

By: _____
Signature and Title

Attest: _____
Signature and Title

SECTION III: SPECIAL PROVISIONS

SPECIAL PROVISIONS

PROJECT NUMBER	COUNTY
24-232.01 - 05	Clarendon

This project is to be constructed under the South Carolina Department of Transportation's Specifications for Highway Construction Edition of 2025, the South Carolina Department of Transportation's 2004 Construction Manual, and the Supplemental Technical Specifications in effect at the time of the letting, and the following Special Provisions.

DEFINITION AND TERMS:

Delete Paragraph 101.3.27, (the) Engineer, of the 2025 Version of the Standard Specifications for Highway Construction in its entirety and replace with the following:

Clarendon County, acting directly or through his duly authorized representative, such representative acting within the scope of particular assigned duties or authority. On this Project the firm of **INFRASTRUCTURE CONSULTING AND ENGINEERING, LLC (ICE)** *shall function as the Engineer's duly authorized representative with authority as described in Section 105, "CONTROL OF WORK", of the Standard Specifications for Highway Construction, latest Edition.*

The project Owner is CLARENDON COUNTY. In the specifications where the terms "SCDOT" or "Department" or other like terms are used to describe the facility Owner, it shall be interpreted as meaning Clarendon County, as appropriate.

Add "Notice-to-Proceed" to Section 101 as follows:

Notice-to-Proceed. A written notice to the Contractor fixing the date on which the Contract Time will commence to run and on which the Contractor may start to perform obligations under the Contract Documents.

It is the intentions of the owner to have the Contractor begin work on this project as soon as practical. The owner anticipates that an award and contract will be issued within two weeks after bids are received. The owner will require that the completed contract, bonds, insurance and other information required by the contract shall be completed within two weeks after bids are received.

SUBSTANTIAL COMPLETION OF WORK:

Substantial Completion of Work is the point in the project when work has been constructed to the typical section in the Plans over the entire length of the project including tie-ins, all pay items have been installed in reasonable conformance with the plans and specifications over the entire length of the project and all lanes of traffic are open to the public in their final configuration with the final applications of thermoplastic and raised pavement markers with the only remaining work to be performed being punch list items.

Contractor shall have the work substantially complete by **June 30, 2026**.

STANDARD DRAWINGS:

The Bidders are hereby advised that this project shall be constructed using the Current SCDOT Standard Drawings with all updates effective at the time of the letting. The Standard Drawings are available for download at https://www.scdot.org/business/standard-drawings.aspx. All drawings that are updated are labeled with their effective letting date in red.

All references in the plans, standard specifications, supplemental specifications, supplemental technical specifications or special provisions to drawings under the previous numbering system (prior to 2007) are hereby updated to the new drawing numbers. Refer to sheets 000-205-01 through 000-205-07 to find new drawing numbers when looking for references to older drawing numbers. "Old sheet numbers" are also visible on the website when using the full set of drawings "current" search and are sortable by clicking the header "Old Sheet #" on the results page. Be aware that some older drawings now span over multiple pages due to detailing changes.

STANDARD DRAWING ERRATA:

The Bidders are hereby advised that the following note changes apply to the published Standard Drawings:
On sheet **000-205-05**, add the following information under the columns below:

OLD DRAWING NAME	NEW DRAWING NAME
720-905-01 to 720-905-05	720-901-01 to 720-993-32

On sheet **605-005-05 (ver 1-1-2013)**, replace the entire text of General Note #4 with the following text:

4. The square footage of sign panels attached to 2½" x 2½" 12-gauge sign support secured to a 3" x 3" 7-gauge breakaway anchor shall not exceed 20 square feet.

On sheet **610-005-00 (ver 5-1-18)** added the following definition to Note 1 of Flagging Operations section:
SIDE ROAD FLAGGER – This flagger is stationed on an intersecting side road and controls the side road traffic entering the roadway where the work activity area is located.

On sheet **610-005-20 (ver 5-1-18)** added Note 5:
5. When the work proceeds through a "STOP" sign controlled "SIDE ROAD" intersection continue the work operations through the intersection to a specific location point within the "DEPARTURE LANE" no less than 300 FT to 500 FT beyond the limits of the intersection to allow the work train and all portions of the lane closure to clear the intersection.

On sheet **610-005-20 (ver 5-1-18)**
Added dimension "300'-500'" for the work activity area after the intersection.

On sheet **610-005-30 (ver 5-1-18)** added Note 5:
5. When the work proceeds through a "STOP SIGN CONTROLLED" intersection continue the work operations through the intersection to a specific location point within the "DEPARTURE LANE" no less than 300 FT to 500 FT beyond the limits of the intersection to allow the work train and all portions of the lane closure to clear the intersection.

On the sheet **610-005-40 (ver 5-1-18)** added Note 5:
5. When the work proceeds through a "TRAFFIC SIGNAL CONTROLLED" intersection continue the work operations through the intersection to a specific location point within the "DEPARTURE LANE" no less than 300 FT to 500 FT beyond the limits of the intersection to allow the work train and all portions of the lane closure to clear the intersection.

On sheet **610-005-50 (ver 5-1-18)** added Note 5:
5. When the work proceeds through a "TRAFFIC SIGNAL CONTROLLED" intersection continue the work operations through the intersection to a specific location point within the "DEPARTURE LANE" no less than 300 FT to 500 FT beyond the limits of the intersection to allow the work train and all portions of the lane closure to clear the intersection.

On sheet **610-005-60 (ver 5-1-18)** Title block changed:
Title block now reads "Flagging Operations – Work Zones Beginning @ Intersections with Two-Lane Two-Way Roadways – Departure Lane."

On sheet **610-005-70 (ver 5-1-18)** Title block changed
Title block now reads "Flagging Operations – Work Zones Terminating @ Intersections with Two-Lane Two-Way Roadways – Approach Lane."

On sheet **610-005-80 (ver 5-1-18)** Note 6 revised:
6. Dependent upon the location of the work zone in the "Departure Lane" or the "Approach Lane" of the two-lane two-way road, when the work zone progresses to a location that requires conversion from this flagging operation traffic control setup to a standard flagging operation traffic control setup or vice versa, comply with the requirements of Standard Drawing No. 610-005-60 or Standard Drawing No. 610-005-70 as necessary regarding these conversions.

On sheet **610-005-90 (ver 5-1-18)** Note 6 revised:
6. Dependent upon the location of the work zone in the "Departure Lane" or the "Approach Lane" of the two-lane two-way road, when the work zone progresses to a location that requires conversion from this flagging operation traffic control setup to a standard flagging operation traffic control setup or vice versa, comply with the requirements of Standard Drawing No. 610-005-60 or Standard Drawing No. 610-005-70 as necessary regarding these conversions.

In **Section 714-000 – Pipe Culverts (Permanent) (ver January 2011)**
Delete and replace all references to P1 Biaxial Geogrid with B4 Geogrid on all Drawings within this Section of the Standard Drawings.

On sheet **720-305-00 (ver May 2008)**, delete the entire note directly above main detail:

On sheet **720-405-00 (ver May 2009)** Detail 2 replace dimension 2'-6" maximum with:
2'-6" minimum

On sheet **720-901-01 (ver Feb 2015)** replace note 5.04 with:
5.04 When a mid-block crossing is required, consider mid-block staggered crossing (720-955-41) to encourage eye contact between the pedestrian and the oncoming traffic. Always angle the stagger so that the pedestrian travels through the refuge facing the oncoming traffic.

On sheet **722-305-00 (ver May 2010)** Detail 4 replace note "French Drain see note 21" with:
French Drain see note 4.5.

On sheet **722-305-00 (ver May 2010)** table 722-305A, 4th column, change the following:
Delete (SF)
Replace text "up to 36" with "up to 3'X3' "
Replace text "larger than 36" with "larger than 3'X3' "

On sheet **722-305-00 (ver May 2010)** change general note 3.3 2nd sentence & Detail 4:
Place Class 2 Type C Geotextile for Erosion Control under riprap as specified in SCDOT Standard Specification.

On sheet **804-105-00 (ver May 2008)** Title Block replace text "Rirap (Bridge End)" with:
Riprap (Bridge End)

On sheet **804-105-00 (ver May 2008)** Change Note 2: Geotextile Pay Item to:
8048210 Geotextile for Erosion Control under riprap (Class 2) Type C…. SY

On sheet **804-205-00 (ver May 2009)** Change Note 2: Geotextile Pay Item to:
8048210 Geotextile for Erosion Control under riprap (Class 2) Type C…. SY

On sheet **804-305-01 (ver Jul 2017)** Change Note 4: Geotextile Pay Item to:
8048210 Geotextile for Erosion Control under riprap (Class 2) Type C…. SY

On sheet **804-305-02 (ver Jul 2017)** Change Section A: Geotextile Note to:
Geotextile for Erosion Control under riprap (Class 2) Type C

On sheet **804-310-00 (ver Jul 2017)** Change Note 3: Geotextile Pay Item to:
8048210 Geotextile for Erosion Control under riprap (Class 2) Type C…. SY

On sheet **805-001-01** Jan 2019 version, replace note 25.06 with:
25.06 FOR PROJECTS THAT SPECIFY PREMASH DEVICES (W-BEAM, TYPE T, TBBC, TYPE B, ETC.) INSTALL W-BEAM RAIL HEIGHT AT 29" +/- 1" (PREVIOUSLY NOTED AS 27.75" +3"/- 0".)

On sheet **805-220-00** (ver Jul 2018) replace note 5:
FOR SITES WITH BRIDGES, BOLT GUARDRAIL TO BRIDGE PARAPET AS REQUIRED IN STIFFNESS TRANSITION, AND HOLD FACE OF GUARDRAIL POSITION (TYPICALLY 5'-3" FROM FACE OF CURB) THROUGH STIFFNESS TRANSITION. Make any necessary adjustments to face of guardrail within the LONGITUDINAL BARRIER. INSTALL END TREATMENT so that impact head is beyond the back of sidewalk.

On website, drawings between 805-500-00 and 805-779-99 are reserved as PREMASH standards. Do not value engineer or otherwise substitute PREMASH devices in any location where it has been determined that MASH devices fit and are specified. If MASH devices do not fit site condition, install PREMASH only upon approval by the Resident Engineer. Note that during MASH implementation, some PREMASH details may be published with old drawing numbering and a cover sheet that addresses drawing and pay item changes.

On sheets **805-860-xx (05, 10, 15, 20, 24, 30) (ver Jan 2016):**
All references to toe drain details are revised to refer to drawing 805-875-10 (correct all notes pointing to drawings 805-895-00 or other incorrect drawing numbers.)

AWARD OF CONTRACT:

Subsection 103.2 of the Standard Specifications is amended to allow sixty (60) days for the award of a contract after the opening of proposals.

PROPOSAL ITEMS AND QUANTITIES:

A list of bid items and quantities is on **page 93.**

CONSTRUCTION STAKES, LINES AND GRADES:

Stakes, Lines, and Grades shall be provided by the Contractor, as necessary.

QUALIFIED PRODUCT LISTINGS:

All references to "Approval Sheet" or "Approval Policy" are to be replaced with "Qualified Products Listings (QPL)" and "Qualified Products Policies (QPP)" respectively. This change includes all references in the SCDOT Standard Drawings, SCDOT Standard Specifications, SCDOT Supplemental Specifications, SCDOT Special Provisions, SCDOT Supplemental Technical Specifications, SCDOT Internet and Intranet websites, and all other documents produced by SCDOT.

SOUTH CAROLINA MINING ACT:

See Attached Supplemental Specification Dated **March 20, 2003** on **page 36.**

This Supplemental Specification is hereby modified as follows:

Paragraph 9 is hereby deleted and replaced with the following:
The deputy secretary for engineering, or his duly appointed representative, will make a final inspection of the reclaimed area and keep a permanent record of his approval thereof. A map or sketch providing the location and approximate acreage of each pit used on the project will be provided to the resident construction engineer for inclusion in the final plans.

The last paragraph is hereby deleted and replaced with the following:
The contractor shall comply with the provisions of the plan that are applicable to the project as determined by the engineer. Seeding or other work necessary to comply with the plan on pits furnished by the contractor shall be at the expense of the contractor. Seeding shall be in accordance with SC-M-810 (latest version) which can be found at http://scdot.org/doing/sup_tech_specs.shtml.

DBE PARTICIPATION:

The Bidder is encouraged to utilize DBE subcontractors on this project. All DBE participation shall be reported to the Engineer prior to Substantial Completion.

CONSTRUCTION QUALITY CONTROL AND ASSURANCE TESTING:

The contractor shall provide construction quality control and quality assurance testing for this project, except for MANUFACTURERS MATERIALS CERTIFICATIONS AND CERTIFIED TEST REPORTS as required by the provision included below.

INSURANCE REQUIREMENTS:

"Contractor's Liability Insurance" has been significantly revised to reflect current SCDOT requirements, including the following new provisions in the 2025 Standard Specifications Section 103.8:

- Commercial General Liability Insurance.
- Automobile Liability Insurance o Automobile Liability Insurance
- Requirements for claims covered by insurance

In addition, the minimum limits of insurance in the table have been increased, and a new provision on the insurance requirements for subcontractors has been added.

The Contractor shall include the Owner, and INFRASTRUCTURE CONSULTING & ENGINEERING, LLC (ICE): **as Additional Insured's**. The authorized insurance company shall provide a Waiver of Subrogation in all policies maintained by the insured for the performance of the Contract.

WORKER'S COMPENSATION	**MINIMUM LIMITS**
COVERAGE A	Statutory
COVERAGE B - EMPLOYER'S LIABILITY	
Bodily Injury by Accident	$1,000,000.00
Bodily Injury by Disease	$1,000,000.00
Disease, Policy Limit	$1,000,000.00
COMPREHENSIVE GENERAL LIABILITY	**LIMIT**
Each Occurrence	$1,000,000
General Aggregate	$2,000,000
Completed Operations	$2,000,000
Each Occurrence	$500,000
Fire Damage (any one fire)	$25,000
Medical Expense (any one person)	$10,000
BUSINESS AUTOMOBILE LIABILITY	$1,000,000.00
(Coverage includes All Owned, Hired and Non-Owned Autos	
Umbrella/Excess Liability	$10,000,000
Other Insurances	As Specified

The Contractor shall also purchase and maintain in a company or companies acceptable to the Owner, Worker's Compensation and Employer's Liability Insurance with minimum limits as shown below or as required by law, whichever is greater:

Certificates of Insurance acceptable to the Owner shall be filed not less than 10 days after notification of award.

The Certificate of Insurance shall not be changed to the extent that limits are decreased by endorsement, canceled or non-renewed without thirty (30) days prior written notice to the Owner. The Contractor shall provide and maintain the overages as required by

Section 103.08 and these additional requirements. Failure to provide and maintain the required coverage will be grounds to declare the Contractor in default of the Contract.

The criteria which Insurance Company or Companies are deemed satisfactory by the Owner shall include, but not be limited to the following:

a. The above required insurance coverage shall be written by a Company or Companies licensed in the areas of required coverage by the Insurance Commissioner of the South Carolina Department of Insurance, and
b. The Insurance Company or Companies shall be assigned a rating of "A-" or better by A. M. Best
c. Company on its most recent Best's Insurance Report, and
d. The Owner considers the "ACORD Certificate of Insurance" as an acceptable form of certificate.

RETAINAGE:

If the Contractor's progress is judged to be delinquent or portions of the work are defective, the County reserves the right to withhold retainage. The total amount retained will be sufficient to cover anticipated liquidated damages and the cost to correct defective work.

PROMPT PAYMENT CLAUSE:

See attached Supplemental Specification dated **July 1, 2017** on **page 43**.

MANUFACTURERS MATERIALS CERTIFICATIONS AND CERTIFIED TEST REPORTS:

The contractor shall supply the Engineer with all required materials certifications and manufacturers test reports for items to be permanently incorporated into the project, prior to their use. The County must approve these certifications and reports before payment can be made to the contractor for these items.

REQUIRED MEDIA NOTIFICATION FOR CONSTRUCTION PROJECTS:

Contractors are encouraged to co-operate with the news media since all projects are constructed with public funds. Because the scope of this project will cause disruption of normal traffic flow, the Contractor is required to notify the public, in a timely manner, of disruptive activities such as lane closures.

The Contractor is required to utilize area media to accomplish public notification of traffic disruptions.

The Contractor is required to deal directly with the news media and all reasonable efforts should be made to co-operate with the media. However, the safety, security and construction schedule on site should not be disrupted in order to accomplish this. The Contractor may coordinate these activities with and receive guidance from the Engineer.

CONTRACT PROVISION TO REQUIRE CERTIFICATION AND COMPLIANCE CONCERNING ILLEGAL ALIENS:

By submission of this bid, the bidder as the prime contractor does hereby agree:

a. to certify its compliance with the requirements of Chapter 14 of Title 8 of the S.C. Code of Laws regarding Unauthorized Aliens and Public Employment;
b. to provide SCDOT with any documents required to establish such compliance upon request; and
c. to register and participate and require agreement from subcontractors and subcontractors to register and participate in the federal work authorization program to verify the employment authorization of all new employees, or to employ only workers who supply the documents required pursuant to S.C. Code 8-14-20(B)(2).

TEMPORARY SUSPENSION RESURFACING WORK:

In addition to complying with Subsection 108.7 of the 2025 SCDOT Standard Specifications, the Contractor must abide by the following:

Once work on a road commences, the Contractor must not suspend work on the road without written permission from the Engineer. In the event the Contractor suspends work without such approval, additional liquidated damages in the amount of **$1000.00** per calendar day will be assessed for the unauthorized suspended work period.

PROSECUTION OF THE ROAD IMPROVEMENT WORK:

It is the County's intentions that work on this contract be performed in a sequential manner. Once a construction activity (reclamation, treatment, shoulder work) has started on a road, the Contractor will continue this activity until it is complete before moving to another road. In the event the Contractor elects to use multiple crews on this project, work may proceed on more than one area. However, in no case will construction activities be initiated on more area than the number of work crews engaged in the work without the approval of the Resident Construction Engineer.

CONTRACT TIME AND DETERMINATION AND EXTENSION OF CONTRACT TIME:

Any extensions of these completion dates will adhere to Section 108.6 of the Standard Specifications.

FAILURE TO COMPLETE WORK ON TIME:

Delete Section 108.9 in its entirety and substitute the following in its place:

Owner and Contractor recognize that time is of the essence and that the Owner will suffer financial loss if the work is not substantially complete in accordance with the time(s) specified herein. They also recognize the delays, expenses and difficulties involved in proving in a legal or arbitration preceding the actual loss suffered by the Owner if the work is not completed on time.

Accordingly, instead of requiring such proof, the Owner and the Contractor agree that as liquidated damages for delay (but not as a penalty) the Contractor shall pay the Owner **$1,000.00 per day** for each calendar day past the contract specified interim and final completion dates.

COORDINATION OF UTILITY RELOCATION WORK WITH HIGHWAY CONSTRUCTION:

As it is not economically feasible to complete the rearrangement of all utility conflicts in advance of the highway construction, such rearrangements may be underway concurrently with construction.

It shall be the responsibility of the contractor to inspect the site for potential utility conflicts.
It is the responsibility of the Contractor to call Palmetto Utility Protection Service (1-888-721-7877) three (3) days prior to work so that existing utilities can be properly marked.

It shall also be the responsibility of the contractor to contact each respective utility to coordinate relocation efforts that will coincide with the contractor's work schedule and for emergency situations.

CEMENT MODIFIED RECYCLED BASE:

Section 306 of the standard specifications is deleted and replaced with the attached supplemental specification, Cement Modified Recycled Base, SCDOT Designation: SC-M-306-1), as shown on **page 46.**

Driveways and intersections to be cleaned/swept daily to remove excess reclamation.

9-wheel rubber tire roller will be required on this item for the stone seal course.

FUEL ADJUSTMENT INDEXES:

See attached Supplemental Specification dated **January 1, 2025,** on **page 57**.

RATE OF APPLICATION:

Portland cement shall be uniformly applied and mixed over the entire length of each roadway at a rate established per roadway, as determined by the Project Manager or Engineer. The pounds per square yard specified are set up as an average rate of application. The Engineer may direct variations wherever conditions warrant. Sampling, preparing, and testing of Cement Modified Recycled Base Compression Specimens will be done as per SC-T-26. **Curing method is Method A. The rate of application for this project will be determined by the contractor per SC-T-26. For bid purposes only, 60 LBS/SY have been used on 8" thick reclamation.**

CORRECTING LOW SHOULDER CONDITIONS:

See attached Supplemental Specification dated **August 1, 2014**, on **page 54**.

DRESSING OF SHOULDERS:

Prior to beginning work on the Cement Modified Recycled Base the contractor shall be required to remove all vegetation in the existing roadway and to 12 inches outside the edge of the new pavement and any other area which impedes the placement of the base and or asphalt mixture to the specified width.

The contractor shall also remove and dispose of all excess asphalt and debris which is disturbed during minor grading for widening or during removal of debris or grass from existing surface during preparation of surface for new lift. After the surfacing has been placed, the contractor shall blade the disturbed material to the extent that the shoulder is left in a neat and presentable condition. All excess material shall be removed from the project. No direct payment shall be made for this work. All costs are to be included in the price of other items of work.

BORROW EXCAVATION FOR SHOULDERS:

This work shall consist of satisfactory placement of all materials necessary to bring the shoulder grade to flush with the final pavement edge grade. The Contractor shall furnish all earth material necessary to eliminate any edge of final pavement drop off. Selected materials shall be used for this operation. The selected material shall consist of a friable material such as topsoil, etc., containing grass roots and having the properties of being comparatively porous; capable of growing grass and of a stable nature in that when compacted

it will resist erosion and be capable of supporting vehicles when relatively wet. When the area where material is to be placed, is greater than 4 feet in width, it shall be scarified and/or disked to a minimum depth of 3 inches prior to placing any material. Scarifying or disking is not required for areas less than 4 feet in width. Borrow shall be mixed with the existing scarified and/or disked shoulder material in such a manner as to provide a seed bed in accord with Section 810.15 of the Standard Specifications. The Contractor has the option of placing the borrow material (a) Prior to placing final surface course or (b) Following the placing of the finished surface course. Payment for this work shall be included in the payment price for Cement Stabilized Earth Base or Cement Modified Reclaimed Base or HMA Surface Course Type C (liquid included). **Shoulders shall be maintained at 2" drop off or less.**

MAINTENANCE STONE:

Maintenance Stone used on this project shall conform to the gradation requirements of Section 305, or to the gradation specified for Aggregate No. CR-14 in the Standard Specifications. Will be used as necessary at the direction of the engineer.

WORK INCLUDED IN THIS PROJECT:

Clarendon County, due to budget considerations, reserves the right to adjust the amount of work to be performed on this project. Projects (complete roads) may be added or deleted only at the discretion of the County. The Contractor shall, by signing this request for bids, agree to adjust, as indicated by the County, the lengths or quantities of roadways and corresponding pay items to be performed, at the times and locations determined to be beneficial to the County.

ROADWAY TYPICAL SECTION:

Each roadway or section of roadway shall have a corresponding ROADWAY TYPICAL SECTION that the final roadway surface shall be graded and surfaced to meet. The ROADWAY TYPICAL SECTION drawings are included in the accompanying plans and these bid documents starting on **page 117.** The Typical Section contains profile and cross slope criteria that shall be met for the entire length of each roadway or roadway section. Contractor shall grade the existing roadway to generally improve vertical curves and to create uniform roadway profiles and alignments. Roadway profiles shall be graded to maintain drainage and to minimize dips or steepness (minimum of .05% or as directed by Engineer). Slope and profile shall be subject to approval by Engineer prior to cement stabilization. All work associated with achieving the ROADWAY TYPICAL SECTION shall be included in the unit price work for Cement Modified Recycled Base.

BITUMINOUS SURFACING:

Sections 406 – 408 of the Standard Specifications shall be amended and/or include as follows:
Contractor shall allow proper breakdown of liquid emulsion before applying stone to treatment.

The Contractor shall exercise care so as not to spread an excessive amount of aggregate, which may become a hazard.

Bituminous Surfacing Single Treatment shall include CRS-2P emulsion.

After sufficient time has passed to allow stone to adequately set, but no later than 24 hours upon completion of rolling, roads and intersections must be swept to remove all loose stone from the treatment.

Section 406.3.2 Aggregate Spreaders: The first sentence shall be amended to read, Aggregate Spreaders for this project shall be self-propelled.

BITUMINOUS SURFACING OPERATIONS:

The bituminous surfacing overlays shall be applied in two separate and distinct operations as described in sections 406 & 407 of the Standard Specifications, each operation representing about one-half of the roadway width and traffic shall be maintained continuously. Unless otherwise directed by the Engineer, paving operations shall be scheduled such that the length of the longitudinal joint exposed to traffic shall not extend beyond the length of pavement placed in one normal day's operation (or 3 miles, whichever is greater) before dropping back to bring the adjacent lane forward.

In addition to the Contractor maintaining traffic throughout the length of this project as required by the Specifications, it will also be necessary that the Contractor, prior to beginning any work, submit to the Engineer for approval his plan for constructing this project.

MAINTENANCE OF TRAFFIC:

In addition to the Contractor maintaining traffic throughout the length of this project as required by the Specifications, it will also be necessary that the Contractor, prior to beginning any work, submit to the Engineer for approval his plan for constructing this project.

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES:

The Contractor advised that all work involving design or installation of traffic control devices, including but not limited to signs, pavement markings, elements of work zone traffic control, signals, etc., shall follow the FHWA's Manual on Uniform Traffic Control Devices (MUTCD), latest edition. The latest edition is defined as the edition that the Traffic Engineering Division of SCDOT recognizes as having been officially adopted (Engineering Directive, Memorandum 19) at the time the project is let, unless stated otherwise in the Special Provisions.

The engineer will mark the location of any signs to be used on this project.

TRAFFIC CONTROL:
The Contractor shall execute the item of Traffic Control as required by the Standard Specifications, the plans, the Standard Drawings For Road Construction, these special provisions, all supplemental specifications, the MUTCD, and the Engineer. This is an amendment to the Standard Specifications to require the following:

GENERAL REGULATIONS -
These special provisions shall have priority to the plans and comply with the requirements of the MUTCD and the standard specifications. Revisions to the traffic control plan through modifications of the special provisions and the plans shall require approval by the department. **Final approval of any revisions to the traffic control plan shall be pending upon review by the Director of Traffic Engineering.**

Install and utilize changeable message signs in all lane closures installed on high volume high-speed multilane roadways. Use of changeable message signs in lane closures installed on low volume low speed multilane roadways is optional unless otherwise directed by the plans and the Engineer.

Install and use a changeable message sign within a lane closure set-up as directed by the *Standard Drawings For Road Construction*. When a lane closure is not present for any time to exceed 24 hours, remove the changeable message sign from the roadway.

Place the sign in a predetermined area on the project site, as approved by the Engineer, where the sign is not visible to passing motorists. Utilize preprogrammed messages in accordance with the *Standard Drawings For Road Construction* when using the changeable message sign as part of the traffic control set-up for lane closures. Only those messages pertinent to the requirements of the traffic control situation and the traffic conditions are permitted for display on a changeable message sign at all times. At no time will the messages displayed on a changeable message sign duplicate the legends on the permanent construction signs.

During operation of changeable message signs, place the changeable message sign on the shoulder of the roadway no closer than 6 feet between the sign and the near edge of the adjacent travel lane. When the sign location is within 30' of the near edge of a travel lane open to traffic, supplement the sign location with no less than 5 portable plastic drums placed between the sign and the adjacent travel lane for delineation of the sign location. Install and maintain the drums no closer than 3 feet from the near edge of the adjacent travel lane. This requirement for delineation of the sign location shall apply during all times the sign location is within 30' of the near edge of a travel lane open to traffic, including times of operation and non-operation. Oversized cones are prohibited as a substitute for the portable plastic drums during this application.

On multilane primary routes, avoid placement of signs mounted on portable sign supports within paved median areas utilized for two-way left turns unless otherwise directed by the RCE.

When mounting signs on multiple ground mounted sign supports, ensure that each post is of the same type. Combining and installing both ground mounted u-section and square steel tube posts within the same sign assembly is prohibited.

When mounting signs on ground mounted u-section or square steel tube posts, utilize either a sign support / ground support post combination with an approved breakaway assembly or a single direct driven post for each individual sign support of a sign assembly installation. Do not combine a sign support / ground support post combination and a direct driven post on the same sign assembly installation that contains two or more sign supports. Regarding sign support / ground support post combination installations, ensure that post lengths, stub heights and breakaway assemblies comply with the manufacturer's requirements and specifications. Use approved breakaway assemblies found on the *Approved Products List For Traffic Control Devices in Work Zones*.

Temporary "Exit" signs (M1025-00) shall be located within each temporary gore during lane closures on multilane roadways. Mount these signs a minimum of 7' from the pavement surface to the bottom of the sign in accordance with the requirements of the MUTCD.

When covering signs with opaque materials, the Department prohibits attaching a covering material to the face of the sign with tape or a similar product or any method that will leave a residue on the retroreflective sheeting. Residue from tape or similar products, as well as many methods utilized to remove such residue, damages the effective reflectivity of the sign. Therefore, contact of tape or a similar product with the retroreflective sheeting will require replacement of the sign. Cost for replacement of a sign damaged by improper covering methods will be considered incidental to providing and maintaining the sign; no additional payment will be made.

Overlays are prohibited on all rigid construction signs. The legends and borders on all rigid construction signs shall be either reversed screened or direct applied.

Signs not illustrated on the typical traffic control standard drawings designated for permanent construction signs shall be considered temporary and shall be included in the lump sum price bid item for "Traffic Control" unless otherwise specified. **Install "Grooved Pavement" signs (W8-15-48) supplemented with the "Motorcycle" plaque (W8-15P-30) in advance of milled or surface planed pavement surfaces. On primary routes, install these signs no further than 500 feet in advance of the beginning of the pavement condition. On interstate routes, install these signs no less than 500 feet in advance of the beginning of the pavement condition. Install**

two sign assemblies at each sign location, one on each side of the roadway, on multilane roadways when the pavement condition is present. Install these signs immediately upon creation of this pavement condition and maintain these signs until this pavement condition is eliminated.

Install "Steel Plate Ahead" signs (W8-24-48) in advance of an area of roadway where temporary steel plates are present. Install these signs no further than 300 feet in advance of locations where steel plates are present. On multilane roadways, comply with the same guidelines as applied to all other advance warning signs and install two sign assemblies at each sign location, one on each side of the roadway, when roadway conditions warrant. Install these signs immediately upon installation of a temporary steel plate and maintain the signs until the temporary steel plates are removed.

Install and maintain any necessary detour signing as specified by the typical traffic control standard drawings designated for detour signing, Part VI of the MUTCD, these Special Provisions, and the Engineer. The lump sum price bid item for "Traffic Control" includes payment for installation and maintenance of the detour signing.

The Contractor shall maintain the travel patterns as directed by the traffic control plans and shall execute construction schedules expeditiously. The Contractor shall provide the Resident Engineer with no less than a two-week prior notification of changes in traffic patterns.

During nighttime flagging operations, flaggers shall wear a safety vest and safety pants that comply with the requirements of ANSI / ISEA 107 standard performance for Class 3 risk exposure, latest revision, and fluorescent hard hat. The safety vest and the safety pants shall be retroreflectorized and the color of the background material of the safety vest and safety pants shall be fluorescent orange-red or fluorescent yellow-green.

During nighttime flagging operations, the contractor shall illuminate each flagger station with any combination of portable lights, standard electric lights, existing street lights, etc., that will provide a minimum illumination level of 108 Lx or 10 fc.

During nighttime flagging operations, supplement the array of advance warning signs with a changeable message sign for each approach. These changeable message signs are not required during daytime flagging operations. Install the changeable message signs 500' in advance of the advance warning sign arrays. Messages should be "Flagger Ahead" and "Prepare To Stop".

During surface planing and milling operations, grade elevation differences greater than 1 inch in areas with pavements composed of hot mixed asphalt (HMA) base courses, intermediate courses or surface courses and Portland cement concrete are PROHIBITED unless otherwise directed by the Department. However, during surface planing and milling operations for removal of Open-Graded Friction courses ONLY, a grade elevation difference of 1½ inches between adjacent travel lanes opened to traffic may exist unless otherwise directed by the Department.

During surface planing and milling operations, lane closures are required at all times where grade elevation differences and drop-offs greater than the acceptable measurements specified heretofore exist adjacent to or between travel lanes open to traffic unless otherwise specified by the department.

If a grade elevation difference in excess of the specified acceptable ranges exist, either mill the adjacent travel lane or pave the milled travel lane as necessary to eliminate the grade elevation difference prior to opening the travel lane to traffic at these locations. Maintain the lane closure restrictions at all times unless otherwise directed by these special provisions.

During surface planing and milling operations, the length of roadway with an acceptable grade elevation difference less than or equal to 1" shall not exceed 2 miles. During paving operations, the Department requires lane closures at all times where grade elevation differences and drop-offs greater than 2" exist adjacent to or between the travel lanes of a roadway opened to traffic, unless otherwise specified by these special provisions. Maintain lane closure restrictions at all times unless otherwise directed by these special provisions.

During paving operations, the length of roadway with an acceptable grade elevation difference less than or equal to 2" shall not exceed 2 miles.

Upon completion of the final riding surface on each road, the Contractor will be allowed up to 3 working days to begin eliminating shoulder drop-offs greater than 2" and work continuously until these drop-offs are eliminated.

During construction on the ramps, the contractor shall conduct flagging operations. The flagging operations shall either stop traffic or direct the traffic around the work area. Installation and operation of these flagging operations shall be according to these special provisions and the MUTCD. Always maintain lane closure restrictions unless otherwise directed by these special provisions.

Supplement and delineate the shoulder edges of travel lanes through work zones with traffic control devices to provide motorists with a clear and positive travel path. Utilize portable plastic drums unless otherwise directed by the Department.

Vertical panels may be used where specified by the plans and directed by the RCE. The installation of traffic control devices are required in all areas where those areas immediately adjacent to a travel lane open to traffic have been altered in any manner by work activities, including but not limited to activities such as grading, milling, etc. Install the traffic control devices immediately upon initiating any alterations to the areas immediately adjacent to or within 15 feet of the near edge line of the adjacent travel lane. When sufficient space

is available, place the traffic control devices no closer than 3 feet from the near edge of the traffic control device to the near edge line on the adjacent travel lane. When sufficient space is unavailable, place the traffic control device at the maximum distance from the near edge of the adjacent travel lane available.

LANE CLOSURE RESTRICTIONS -

The lane closure restrictions stated below are project specific. For all other restrictions see supplemental specification "Closure Restrictions" dated July 1,2019.

The Contractor shall install all lane closures as directed by the Standard Specifications For Highway Construction (latest edition), the Standard Drawings For Road Construction, these special provisions, the MUTCD, and the Engineer. The Contractor shall close the travel lanes of two-lane two-way roadways by installing flagging operations. The Contractor shall close the travel lanes of multilane primary and secondary routes as directed by the typical traffic control standard drawings designated for lane closures on primary routes. The Contractor shall close the travel lanes of interstate routes as directed by the typical traffic control standard drawings designated for lane closures on interstate routes.

The Department prohibits lane closures on primary and secondary routes during any time of the day that traffic volumes in the travel lanes remaining open to traffic exceed 800 vehicles per hour per lane per direction and during the hours defined in the document "Hourly Restrictions for Lane Closures on Multilane Primary and Secondary Routes."

The Department reserves the right to suspend a lane closure if any resulting traffic backups are deemed excessive by the Engineer.

Maintain all lane closure restrictions as directed by the plans, these special provisions, and the Engineer.

Flagging operations are considered to be lane closures for two-lane two-way operations and shall be subject to all restrictions for lane closures as specified by this contract.

Lane closures, including flagging operations, are restricted to maximum distances of 2 miles. Install all lane closures according to the typical traffic control standard drawings. On occasions when daytime lane closures must be extended into the nighttime hours, substitute the nighttime lane closure standards for the daytime lane closure standards.

Installation and maintenance of a lane closure is PROHIBITED when the Contractor is not actively engaged in work activities specific to the location of the lane closure unless otherwise specified and approved by the Engineer. The length of the lane closure shall not exceed the length of roadway anticipated to be subjected to the proposed work activities within the work shift time frame or the maximum lane closure length specified unless otherwise approved by the Engineer. Also, the maximum lane closure length specified does not warrant installation of the specified lane closure length when the length of the lane closure necessary for conducting the work activity is less. The length and duration of each lane closure, within the specified parameters, shall require approval by the Engineer prior to installation. The length and duration of each lane closure may be reduced by the Engineer if the work zone impacts generated by a lane closure are deemed excessive or unnecessary.

The presence of temporary signs, portable sign supports, traffic control devices, trailer mounted equipment, truck mounted equipment, vehicles and vehicles with trailers relative to the installation or removal of a closure and personnel are prohibited within the 15-to-30-foot clear zone based upon the roadway speed limit during the prohibitive hours for lane closures specified by these special provisions.

SHOULDER CLOSURE RESTRICTIONS -

The Department prohibits the Contractor from conducting work within 15' of the near edge of the adjacent travel lane on the outside shoulders or the median areas of interstate and primary routes during the hours when lane closures are prohibited. The hourly restrictions for lane closures shall also apply to work activities conducted under a shoulder closure within 15' of the near edge of an adjacent travel lane or a median area. The Department reserves the right to suspend work conducted under a shoulder closure if any traffic backups develop and are deemed excessive by the Engineer. Maintain all shoulder closure restrictions as directed by the plans, these special provisions, and the Engineer.

On primary and secondary roadways, the Department prohibits the Contractor from conducting work within 1' or less of the near edge of an adjacent travel lane under a shoulder closure. All work that may require the presence of personnel, tools, equipment, materials, vehicles, etc., within 1' of the near edge of an adjacent travel lane shall be conducted under a lane closure.

The Contractor shall install all shoulder closures as directed by the typical traffic control standard drawings designated for shoulder closures, and the Engineer. Substitution of the portable plastic drums with oversized cones during nighttime shoulder closures is PROHIBITED.

MOBILE OPERATIONS –

A mobile operation moves continuously at all times at speeds 3 mph or greater without any stops. The minimal traffic flow impacts generated by these operations involve brief traffic flow speed reductions and travel path diversions.

Conduct work operations that cannot be performed at speeds of 3 mph or greater under standard stationary lane closures.

The Department prohibits the Contractor from conducting mobile operations during the hours when lane closures are prohibited. The hourly restrictions for lane closures shall also apply to work activities conducted under mobile operations. The Department reserves the right to suspend work conducted under mobile operations if any traffic backups develop and are deemed excessive by the Engineer. Maintain all mobile operation restrictions as directed by the plans, these special provisions, and the Engineer.

The distance intervals between the vehicles, as indicated in the *Standard Drawings For Road Construction*, may require adjustments to compensate for sight distance obstructions created by hills and curves and any other conditions that may obstruct the sight distance between the vehicles. However, adjustments to the distance intervals between the
vehicles should be maintained within the range of variable distance intervals indicated in the standard drawings unless otherwise directed by the Engineer.

Maintain two-way radio communication between all vehicles in the vehicle train operating in a mobile operation.

Supplement the work vehicles and the shadow vehicles with amber colored flashing dome lights. The vehicles may also be supplemented with advance warning arrow panels and truck mounted attenuators as directed in the *Standard Drawings For Road Construction* and the Standard Specifications.

The Contractor shall install, operate and maintain all advance warning arrow panels, truck mounted attenuators and truck mounted changeable message signs as required by these special provisions, the manufacturer's specifications, the *Standard Drawings For Road Construction*, the Standard Specifications, the plans and the Engineer.

TYPICAL TRAFFIC CONTROL STANDARD DRAWINGS -

Install the permanent construction signs as shown on the typical traffic control standard drawings designated for permanent construction signing.

Typical traffic control standard drawings of the "Standard Drawings for Road Construction" for this project shall be as shown below or as required: Install the permanent construction signs as shown on the typical traffic control standard drawing, "Construction Signing Permanent Primary Routes 605-010-02", or as directed by Engineer. A list of roadways for the placement of the signs can be obtained from the Engineer.

CONSTRUCTION SCHEDULE:

The successful Bidder shall, prior to commencement of work, submit to the County a schedule showing the order in which he proposes to carry on the Work indicating the periods during which he will perform work on each roadway. The County of Clarendon reserves the right to determine priority of schedule items, but unless modified by the parties, in writing, the successful Bidder shall have sole Responsibility for following and coordinating its schedule.

SURPLUS MATERIAL:

The contract bid price for other items of work shall be full payment for excavating, hauling, disposing of, and seeding any surplus material. All milled material shall be disposed of at an approved site.

SEEDING:

Section 810.2.3.3 is hereby amended by adding the following note to the table:

The use of Annual Sudan Grass for temporary vegetation shall be prohibited statewide.
All seeding will be mulched using Method C: Hydro seeding.

LUMP SUM BID ITEMS:

It is predetermined that all lump sum bid items shall be applied equally among all roads, unless otherwise stated. This will apply to pay estimates as well as deletion or addition of a road should this occur. Lump sum items are for each road but must be the same.

PERMANENT PIPE CULVERTS:

Section 714 of the Standard Specifications, Permanent Pipe Culverts:

Ensure that all types and sizes of permanent and temporary pipe culverts conform to the requirements of the special provisions and the latest edition of applicable SCDOT supplemental, OMR Standard Method of tests. **Supplemental Technical Specification SC-M-714 included in Supplemental Specifications, page 58.**

PIPE DISPOSAL:

Any pipe that must be removed shall be removed by the contractor to an approved site. The cost of pipe disposal is to be included in the cost of the new pipe.

HMA FULL DEPTH PATCHING:

This item will consist of 6" deep HMA patching per SCDOT specs.

HOT MIX ASPHALT (LIQUID INCLUDED):

The costs of shaping and compacting the existing or added crushed stone base in driveways or elsewhere shall be included in the costs of the HMA which will cover the base. All driveways and intersections will be paved. The contractor shall furnish to the Engineer a plant mix lab report for each mix used daily.

Driveways shall be paved prior to mainline paving operations.

Shoulders must be clipped to achieve width described in the roadway description. Remove all excess material.

ASPHALT BINDER ADJUSTMENT INDEX:

The Asphalt Binder Adjustment Index on this project is the SCDOT index for **August 1, 2025, $578.56, and** will be used on all HMA Surface Course (Liquid Included) and be determined in the following manner. Each SY of HMA Surface Course Type C (Liquid Included) 175# / SY shall be assumed to weigh 175 pounds or 0.0875 tons. HMA Surface Course E (Liquid Included) 100# / SY shall be assumed to weigh 100 pounds or 0.050 tons. Using the daily plant mix lab report, the amount of binder will be determined and indexed up or down accordingly. Adjustments will be made using the SCDOT Monthly Index formula.

TESTING:

The contractor will be responsible for all quality control and testing. One-point proctors will be accepted if necessary. A minimum of one compaction test will be run every 2500 feet of cement modified base or at least one per lane per road. Roller patterns, daily plant test reports, and other tests required by SCDOT will also be required on HMA.

WORK SCHEDULE:

There will be no mixing or other digging type operations after 4 PM on Fridays until 9 AM on Monday and no work of any kind on Holidays, Saturdays, and Sundays.

WARRANTY:

The Contractor agrees to a one-year warranty against defects, failures etc. caused by materials and workmanship, beginning on the date of final acceptance of punch list.

MIXING OF CEMENT ENHANCED BASES:

The mixing process for Cement Modified Recycled Base will be accomplished using standard specification **301.4.5.1 METHOD A (MULTIPLE-PASS TRAVELING MIXING PLANT).**

STOP BARS:

Shall be placed per **Standard Drawing 625-305-00**.

PAVEMENT MARKING:

All center and edge lines or stop bars will be replaced at the end of each day's production with temporary markings.

BUTT-JOINTS

All butt-joints will be milled as necessary to ensure a smooth tie in. The price for this item will be included in the cost of the HMA.

ENCROACHMENT PERMITS:

Copies of the Encroachment Permits for each road will be in a separate file.

{REMAINDER OF PAGE INTENTIONALLY LEFT BLANK}

SECTION IV: SUPPLEMENTAL SPECIFICATIONS

March 20, 2003

THE SOUTH CAROLINA MINING ACT

The South Carolina Mining Act enacted by the General Assembly in 1973 requires that the Department adopt reclamation standards to govern activities of the Department and any person acting under contract with the Department, on highway rights-of-way or material pits maintained solely in connection with the construction, repair and maintenance of the public road systems in South Carolina.
STANDARD PLAN FOR THE RECLAMATION OF EXCAVATED AREAS ADOPTED BY THE South Carolina DEPARTMENT OF TRANSPORTATION

Reclamation plans as stated herein shall include all areas disturbed in excavations of borrow and material pits, except planned inundated areas.

The final side slopes of areas excavated for borrow and material pits shall be left at such an angle so as to minimize erosion and the possibility of slides. The minimum slope in every case shall be not less than 3:1.

Small pools of water should not be allowed that are, or are likely to become noxious, odious, or foul to collect or remain on the borrow pit. Suitable drainage ditches, conduits, or surface gradient shall be constructed to avoid collection of noxious, odious, or foul pools of water unless the borrow pit is to be reclaimed into a lake or pond.

Borrow pits reclaimed to a lake or pond must have an adequate supply of water to maintain a water sufficient level to maintain a minimum water depth of four (4) feet on at least fifty (50) percent of the surface area of the lake or pond.

Excavated areas will be drained where feasible unless otherwise requested by the property owner where, in such instances, the property owner may wish to develop the excavated area for recreational purposes or for the raising of fish, or for other uses, in compliance with the South Carolina Mining Act.

Where material is stripped from the ground surface in relatively thin layers, the area, after excavation has been completed, will be thoroughly scarified and terraced and planted to establish satisfactory vegetation necessary to control erosion. Vegetative cover should be established on a continuing basis to ensure soil stability appropriate to the area. Conservation practices essential for controlling both on-site and off-site erosion and siltation must be established. A minimum of seventy-five (75) percent vegetative ground cover, with no substantial bare spots, must be established and maintained into the second growing season.

Excavated areas that are drained will be seeded to obtain a satisfactory vegetative cover. The side slopes of excavated area will be planted to vegetation.

The State Highway Engineer, or his duly appointed representative, will make a final inspection of the reclaimed area and keep a permanent record of his approval thereof. A map or sketch providing the location and approximate acreage of each pit used on the project will be made available to the Final Plans Engineer.

All applicable regulations of agencies and statutes relating to the prevention and abatement of pollution shall be complied with by the contractor in the performance of the contract.

The Contractor shall comply with the provisions of the Plan which are applicable to the project as determined by the Engineer. Seeding or other work necessary to comply with the plan on pits furnished by the contractor shall be at the expense of the contractor. Bermuda shall not be planted on ground surface pit areas. The quantity of fescue seed specified in Subsection 810.04 of the Standard Specifications shall be increased to fifteen (15) pounds in lieu of the deleted Bermuda seed.

SCDOT 2025 Standard Specification

104.7 – Maintenance and Maintenance of Traffic

1. Unless otherwise provided, keep existing facilities that are undergoing improvements open to all traffic. Keep the portion of the project being used by public, pedestrian, and vehicular traffic in such condition that all traffic will be safely and adequately accommodated and is free from irregularities and obstructions that could present a hazard or annoyance to traffic.

2. Maintain the work, project site, construction area, and roadway from the time permanent construction signs are installed and uncovered until final acceptance with all exceptions cleared. Perform maintenance with adequate equipment and forces to keep the roadway and structures in a safe and satisfactory condition at all times and to ensure the continuous and effective day by day prosecution of the work. As determined by the RCE, SCDOT will be responsible for any maintenance of items outside the scope of the Contract. Where maintenance is necessary within the project limits but outside the scope of the Contract, the RCE may authorize the Contractor to perform the maintenance work according to Subsection 104.5.

3. When requested by the Contractor, the Department may assist in removing ice and snow from portions of the project that are open to traffic. Do not construe that such work by Department forces is a waiver of the Contractor's responsibility as set forth herein or elsewhere in the Contract.

4. Where determined necessary by the RCE, provide and maintain temporary approaches, crossings, and intersections with trails, roads, streets, businesses, parking lots, residences, garages, and farms.

5. Coordinate and perform the various phases or stages of the construction, paying attention to weather conditions, seasons of the year, etc., to afford the least inconvenience to the adjacent landowners and the traveling public.

6. The Contractor is responsible for the cost of repairs for issues that arise and that are within the scope of the Contract.

7. If permanent construction signs are not required on a particular road, then the start of the Contractor's obligations begins when the Contractor installs temporary signs and ends when the particular road is accepted.

SCDOT 2025 Standard Specification

105.18 – Force Majeure Event

1 A Force Majeure Event is a delay or failure of performance that materially and adversely affects the performance of the Contractor that does not constitute a breach of the Agreement if and to the extent such delays or failures of performance result in a delay to the Contract completion date. Each of the foregoing are not included in the definition of a "Force Majeure Event":

A. Any breach of Contract by the Contractor or any person or entity for whom the Contractor is legally responsible including by nor limited to subcontractors and material suppliers; or
B. Any act or omission by the Contractor or any person or entity; or
C. Any negligence, recklessness, willful misconduct, fraud, or violation of laws by the Contractor or any such person or entity; or
D. Any event that could reasonably have been avoided by the Contractor or any such person or entity by the exercise of caution, due diligence, or reasonable efforts.

2 A Force Majeure Event is defined as or are caused by:

a. Acts of God or public enemy;
b. A change in law or regulation after the effective date directly and substantially affecting project performance;
c. Acts of war (including civil and revolutionary); invasion, armed conflict, violent acts of a foreign enemy, military or armed blockade; military or armed takeover of the project or the site;
d. Declaration or order from either the President of the United States and/or the Governor of the State of South Carolina that mandates or requires the evacuation of the project area;
e. Acts of rebellion, terrorism, riot, insurrection, civil commotion or sabotage that causes direct physical damage to, or otherwise directly causes, interruption to construction or direct losses during maintenance of the project;
f. Earthquakes, including all foreshocks and aftershocks, where such earthquakes include ground shaking, liquefaction, settlement, or ground movements that directly impact and cause damage to temporary or permanent works of the project;
g. Hurricanes and tornados that cause direct physical damage to or otherwise directly causes interruption to construction or direct losses during project maintenance;
h. Extreme weather events, ice storms, snow, fires (except intentionally set fires), floods, landsides, or sinkholes caused by natural events that directly impact physical improvements of the project or the Contractor's performance of the work, if the damage caused by the event was not reasonably foreseeable and preventable by the Contractor's exercise of ordinary care, exercise of caution, or due diligence or to reasonable efforts to abate, prevent, or otherwise mitigate the risk of the event;
i. Explosions, nuclear explosions, including radioactive contamination that triggers the Contractor's obligations pertaining to hazardous materials hereunder and in each case directly impacting the physical improvements of the project or performance of the Contractor's scope of work;
j. Unavailability or shortage of materials caused directly or indirectly by any other Force Majeure Event, whether it occurs within South Carolina or whether it occurs in the area where the materials are produced, manufactured, and/or mined;
k. Embargos directly affecting materials required to perform the Contractor's work as reflected in the then-current project schedule;
l. Quarantine or suspension by the President of the United States, the Governor of South Carolina, or other authority acting on behalf of or with the authority of the same, or declared epidemic or pandemic, in each case, directly affecting the Contractor's performance of the scope of the work;
m. Declared state of emergency by the President of the United States the Governor of the State of South Carolina, or regional authority having jurisdiction over the project or the Contractor's performance of the scope of the work; or
n. Strikes (both national or regional strikes) or other concerted acts of workmen not arising out of or related to the Contractor or any person or entity for which the Contractor is responsible.

3 A Contractor shall bear the burden of proving that a Force Majeure Event exists, that it impacts the critical path of the project, and that the Contractor could not have reasonably worked around the condition, including by resequencing, relocating, or redeploying its forces to other portions of the project or other activities unrelated to its work so as to avoid additional delay or cost. A Force Majeure Event is an excusable delay event and not a compensable event.

4 Any expense attributable to such occurrence of a Force Majeure Event shall not entitle the Contractor to additional compensation; these events shall be covered under the Contractor's appropriate insurance policy. The duration of delay to the critical path identified in the current project schedule directly caused by a Force Majeure Event shall be added to the Contract time.

January 1, 2018

REMOVAL OF EXISTING ASPHALT PAVEMENT BEFORE PATCHING

Delete Subsection 401.4.14 Removal of Existing Asphalt Pavement before Patching, of the Standard Specifications in its entirety and replace with the following:

The **RCE** will determine the limits of distressed pavement and will mark width and length of patches. **RCE** / **RME** will inspect the road and ensures that drainage is adequate, and no additional work needs to be done to the ditches and shoulders to promote proper drainage. The **RCE** may elect to obtain random cores if needed to determine proper depth of distressed area to be patched. Construct patches with a minimum size of 6.5 feet x 6.5 feet with at least 25 feet between patches. Care should be taken to ensure that longitudinal joints do not end up in the wheel paths. In the event that considerable quantities of full depth patching (FDP) are encountered, the RCE will consult with the State Pavement Design Engineer to consider other rehabilitation methods.

Remove the pavement to the depth indicated in the Plans, ensuring that the face of the cut is straight and vertical, with the exception of tapers needed to get equipment in and out of the patched area. If unstable material is encountered, remove additional material as directed by the **RCE**. Backfill the volume of the material removed below the patch with material meeting the requirements of **Section 305**, Graded Aggregate Base, and thoroughly compact in layers not exceeding 4 inches with a vibratory compactor. Thoroughly tack the sides of the existing pavement before placing the asphalt patch material in the hole.

Place the patch material in relatively uniform layers not to exceed the number of lifts in the table below. Ensure that the patch material is selected from the table below. Compact each layer with a vibratory compactor and a pneumatic roller. Whenever practical, allow lifts to cool down prior to placing the next lift, especially when doing multiple patches in the same area. The 175° F requirement between lifts does not apply to FDP. Conduct the work so that patches are opened and filled each day, with the roadway being opened to traffic by the end of each day's operation. Ensure that the finished patch is smooth riding by using a straight edge. Temperature and calendar restrictions found in **Section 401.4.4** do not apply, however no FDP will be permitted if the area is wet or frozen prior to removing the old pavement.

Full Depth Patching Materials		
	Select mixture type below based on Depth of FDP	
Depth of FDP	**Alternate Mixture Options**	**Typical Mixture**
4" or Less	Surface Type B / C 2 Lifts	Intermediate C 2 Lifts
6"	Surface Type B / C 2 Lifts	Intermediate C 2 Lifts
8"	Intermediate B Special 2 lifts	Intermediate C 3 lifts
10"	Intermediate B Special 2 lifts	Intermediate C 3 lifts
12" or More	Consult with the State Pavement Design Engineer	

January 1, 2018

SECTION 810: EROSION CONTROL MEASURES

Delete Subsection 810.4.2 of the Standard Specifications in its entirety and replace with the following:

In addition to the erosion control measures specified in the Plans, Standard Specifications, Supplemental Technical Specifications and the Special Provisions, the Contractor is advised that all land disturbing activities (clearing and grubbing, excavation, borrow and fill) are subject to the requirements set forth in the following permits and regulations:

- South Carolina Code of Regulations 63-380, Standard Plan for Erosion, Sediment, and Stormwater Runoff Control. The regulation can be found at the South Carolina Legislature website.
- Erosion and Sediment Reduction Act of 1983 (Title 48, Chapter 18 of the South Carolina Code of Laws of 1983, as amended). Section 70 of this code authorized the South Carolina Department of Health and Environmental Control (SCDHEC) to administer this regulation with respect to lands under the jurisdiction of the South Carolina Department of Transportation. The code can be found at the South Carolina Legislature website.
- National Pollutant Discharge Elimination System (NPDES) General Permit Number SCR160000, effective January 1, 2013 (or latest version): The Environmental Protection Agency, in accordance with the Federal Clean Water Act, has granted to the South Carolina Department of Health and Environmental Control (SCDHEC) the authority to administer the Federal NPDES permit program in the State of South Carolina. The permit may be viewed at the SCDOT website.

In accordance with the NPDES General Permit SCR160000 section 2.1.E: "The Prime Contractor hired by SCDOT for a project will become a Secondary Operator with SCDOT upon signing the awarded contract. The Secondary Operator must complete the agreement found in Appendix B of the SCDOT Contract, (Contractor Certification Form). The agreement is to be signed in accordance with the signatory requirements of §122.22 of the South Carolina Regulation 61-9. The agreement is to be maintained with the SWPPP.

By signing the Contract, the contractor accepts/understands the terms and conditions of the *Storm Water Pollution Prevention Plan (SWPPP)* as required by the NPDES General Permit SCR160000 and may be legally accountable to SCDHEC for compliance with the terms and conditions of the SWPPP. In addition, the contractor is responsible for ensuring all subcontractors comply with the SWPPP and the permit requirements.

The SCDOT will complete and forward a *Notice of Intent* (*NOI*) to SCDHEC. If SCDHEC does not send a letter within 10 business days of receipt of the *NOI,* authorizing coverage, denying coverage, or advising that a review of the *SWPPP* will take place, coverage will be automatically granted.

At the pre-construction conference, with the contractor, the SWPPP will be explained and discussed so that the contractor is made aware of their responsibilities in the *SWPPP*.

Upon authorization of coverage, the SWPPP is to be fully implemented. The prompt installation of erosion coordinated with construction activities to maintain compliance with the above regulations and NPDES General Permit.

Erosion and Sediment Control Inspections are to be conducted by a qualified individual (Certified Erosion Prevention and Sediment Control Inspectors (CEPSCI), P.E., or those as stated in the permit) by the Department at least every 7-calendar days. A representative of the Contractor is also encouraged to accompany the inspection. Correct deficiencies noted during these inspections within the assigned priority period. If deficiencies are not corrected within this timeframe, the RCE can stop all work (except erosion and sediment control measures) until the deficiencies are corrected.

Give special attention to critical areas within the project limits (i.e., running streams, water bodies, wetlands, etc.). In these areas, the RCE may direct the Contractor to undertake immediate corrective action, but in no case, allow these deficiencies to remain unresolved more than 48 hours for a priority 1 deficiency or 7 days for a priority 2 deficiency. This is in accordance with their assigned priority as identified during the Erosion and Sediment Control Inspection.

Failure to adequately comply with the provisions as detailed above or any other required erosion control measures can result in stoppage of all contract operations (except erosion and sediment control measures) until corrective action has been taken. Additional sanctions may be invoked by the SCDHEC in accordance with their authority.

Fines assessed on the Department by SCDHEC as the result of the Contractor's non-compliance or violation of said permit provisions will be paid by the Department and will subsequently be deducted from any monies due to the Contractor. In case no monies are due or available, the fines incurred will be charged against the Contractor's Surety.

July 2017

PROMPT PAYMENT CLAUSE

(1) Subject to the provisions on retainage provided in Paragraph (2) below, when a subcontractor has satisfactorily performed a work item of the subcontract, the Contractor must pay the subcontractor for the work item within seven (7) calendar days of the Contractor's receipt of payment from SCDOT. A subcontractor shall be considered to have "satisfactorily performed a work item of the subcontract" when the SCDOT pays the Contractor for that work item. In the case of a second or third tier subcontractor, the 7-day time period begins to run when the 1st tier subcontractor receives payment from the Contractor or when the 2nd tier subcontractor receives payment from the 1st tier subcontractor.

(2) The Contractor may withhold as retainage up to five (5%) percent of a subcontractor's payment until satisfactory completion of all work items of the subcontract. "Satisfactory completion of all work items of the subcontract" shall mean when the SCDOT accepts the last work item of the subcontract. The Contractor must release to the subcontractor any retainage withheld within seven (7) calendar days from the date the Contractor receives payment from SCDOT for the last work item of the subcontract or within seven (7) days from SCDOT's acceptance of the last work item of the subcontract, whichever is the latest to occur. However, upon documentation of good cause provided by the contractor and written concurrence by the Director of Construction, the Contractor may continue to withhold the 5% retainage.

(3) Prior to receiving payment of each monthly estimate, the Contractor shall (a) certify to SCDOT that the construction estimate is complete and that its subcontractors have been paid for work covered by previous estimates, for which they are entitled to be paid, in accordance with paragraphs (1) and (2) above, and (b) submit verification that Contractor has received similar certifications or evidence from its subcontractors that lower tier subcontractors have been paid in accordance with paragraph (1). No payment will be made to Contractor unless such documentation/certification is received or SCDOT has issued written approval for delayed payment and required status reports as follows:

(i) The obligation to promptly pay subcontractors (all tiers) or to release retainage does not arise if there is a legitimate subcontract dispute with first tier and/or lower tier subcontractors. If there is a subcontract dispute, the Contractor may submit a written request to SCDOT to approve a delay in payment to the subcontractor which shall explain the nature of the dispute and identify relevant subcontract provisions as support. The explanation may include those reasons set forth in the SC Prompt Pay Act (S.C. Code Section 29-6-40). Payment to the subcontractor shall not be withheld without prior SCDOT written approval.

(ii) Contractor shall submit a status report of the dispute in each monthly progress payment. The status report shall contain:

- justification for the continuation of nonpayment in the form of pending judicial proceedings, alternate dispute resolution (ADR) process or administrative proceedings, as evidence of why the delay shall continue; or
- a certification that the matter is resolved, and payment has been issued to the subcontractor (first tier and/or lower tier subcontractors).

(4) Failure to comply with any of the above provisions shall constitute a material breach of the contract and shall result in one or more of the following sanctions: (1) no further payments to the Contractor unless and until compliance is achieved; (2) monetary sanctions; and/or (3) the Contractor being declared in default and being subject to termination pursuant to Section 108.10 of the Standard Specifications.

(5) Any subcontractor who believes it is due payment in accordance with the Prompt Payment Clause may request information from the servicing Resident Construction Engineer (RCE) as to whether and when payment for the subcontractor's work has been made to the Contractor. If payment has been made to the Contractor, and a subcontractor certifies to the RCE that the subcontractor has not been paid within seven (7) calendar days of SCDOT's payment to the Contractor or paid as provided in paragraph (1) for sub-tiers, the RCE will notify the Director of Construction. If SCDOT has not approved the delay in payment pursuant to paragraph 3 above, appropriate remedies set forth in paragraph (4) will be applied. On federally funded projects, the subcontractor may contact the Federal Highway Administration should SCDOT fail to address the non-payment issue.

(6) The Contractor agrees by submitting this bid or proposal that it will include this clause titled "PROMPT PAYMENT CLAUSE," provided by the SCDOT, without modification, in all subcontracts with its subcontractors. Contractor is responsible for requiring all of its subcontractors to include this PROMPT PAYMENT CLAUSE in all lower tier subcontracts. If Contractor knowingly enters or knowingly allows a subcontractor or lower tier subcontractor to enter into a subcontract without the PROMPT PAYMENT CLAUSE, SCDOT may apply the appropriate remedies set forth in paragraph (4) or pursue other available remedies, including breach of contract.

January 27, 2014

South Carolina Department of TransportationTraffic Engineering Guidelines

NUMBER: TG-31

SUBJECT: Placement of Stop Lines and Stop Signs at Unsignalized Intersections

BACKGROUND: Stop lines should be used to indicate stop location at unsignalized intersections. Section 3B.16 of the 2009 MUTCD states that, in the absence of a marked crosswalk, the stop line should be placed at the desired stopping point but should not be placed more than 30 feet or less than 4 feet from the nearest edge of the intersecting traveled way. State law requires that a vehicle approaching a stop sign shall stop at a clearly marked stop line, but if none is present, then at the point nearest the intersecting roadway before entering it. Stop line distance, stop sign distance, and sight distance as defined in Figure TG-31-1 are the three criteria used for determining the preferred stop line and stop sign placement. This Traffic Guideline was developed to clarify use and placement of stop lines along with stop signs.

GUIDELINES: Engineering judgment should be used when considering placement of stop lines, verifying that the 4' to 30' placement allows for a clear sight triangle for viewing in both directions. In general, stop lines should be placed at a distance of 4 to 10 feet in advance of the mainline to maximize sight distance to crossing traffic. Stop bar placement greater than 10 feet would be acceptable at skewed intersections in order to facilitate left turning movements from the major street or where significant truck volumes are present.

Per Section 2B.10 of the 2009 MUTCD, STOP (R1-1) signs should be placed no farther than 50 feet from the edge of pavement of the intersecting roadway. In general, stop signs should be placed near the edge of the travel way (typically between 6'-12') for the minor road approach to maximize the sign visibility to approaching traffic. This placement may be near the radius return or farther back from the intersection to maximize sign visibility. The stop line and the stop sign do not have to be placed at the same location on the minor street approach.

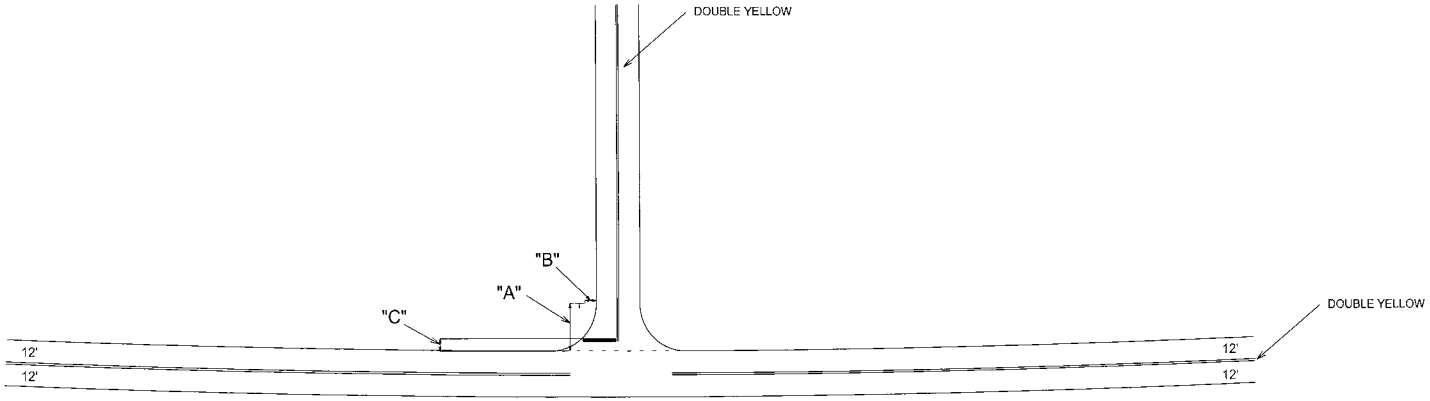
If a situation arises where an intersection does not meet the required sight distance, the intersection should undergo further evaluation to determine if intersection warning signs are warranted. Engineering judgment should be used when determining if intersection warning signs are warranted and the location in which they will be placed.

Dashed edge lines should also be placed at the intersecting roadway to enforce the stop condition, define the extended edge line or point of conflict with the intersecting roadway, and provide additional channelization for mainline traffic at wide or skewed intersections. Refer to Figure TG-31-1.

Approved: _____
Director of Traffic Engineering

SCDOT

TYPICAL PLACEMENT FOR STOP SIGNS AND STOP BARS AT UNSIGNALIZED INTERSECTIONS



Drawing not to scale

"A" = 6'-50' FROM EDGE OF TRAVEL WAY TO STOP SIGN
"B" = 6'-12' FROM EDGE OF TRAVEL WAY TO STOP SIGN

NOTE: Typically placed at the beginning of the radius.

"C" = 4'-30' FROM EDGE OF TRAVEL WAY TO STOP LINE - LIMITS

NOTE: Typically placed between 4'-10' from the edge of travelway. - DESIRED
If > 10', verify that proper sight distance exists.

NOTE: Typically the stop sign preceeds the stop bar.

FIGURE TG-31-1

FIGURE TG-31-1

DIRECTOR OF TRAFFIC ENGINEERING *DATE*

APPROVED:
Division Administrator

THADDEUS W KITOWICZ Digitally signed by THADDEUS W KITOWICZ Date: 2024.11.29 10:28:30 -05'00'

By: _____

FEDERAL HIGHWAY ADMINISTRATION

Supplemental Technical Specification for

Cement Modified Recycled Base

SCDOT Designation: SC-M-306 (01/25)

1.0 DESCRIPTION

1.1 This section contains specifications for the materials, equipment, construction, measurement, and payment for the modification of an existing paved roadway or shoulder by scarifying the existing pavement structure, mixing it with Portland cement, and constructing the base course in conformance with the lines, grades, dimensions, and cross-sections shown on the Plans or as directed by the RCE.

2.0 MATERIALS

2.1 Portland Cement - Use Portland cement that conforms to the requirements of **Subsection 301.2.1**.
2.2 Water - Use water conforming to the requirements of **Subsection 701.2.11.**
2.3 Asphalt Material – Use asphalt material conforming to the requirements of **Subsection 301.2.4**.

3.0 EQUIPMENT

3.1 Ensure that the equipment necessary for the proper construction of the work is on site and in acceptable working condition. Provide sufficient equipment to enable prosecution of the work in accordance with the project schedule and completion of the work in the specified time.
3.2 Construct the base with self-propelled rotary mixer(s)/reclaimer(s) capable of mixing in place to the required depth. The mixer(s)/reclaimer(s) shall have a mechanism for controlling the reclaimed material gradation via breaker bar and/or a door opening on the mixer(s)/reclaimer(s). Mixer(s)/reclaimer(s) shall be fitted with an integrated liquid injection system capable of introducing liquid into the cutting drum during the mixing process.
3.3 Provide a sufficient number of water trucks on the jobsite at all times of operation to maintain the moisture requirements listed in **Subsection 9**. Ensure that the water truck used in conjunction with the reclaimer uses a direct injection system, and additional trucks maintain surface moisture during grading and compaction work and until the curing treatment is applied in accordance with **Subsection 13.** Accomplish this using a controlled and uniform application of water without eroding or otherwise damaging the CMRB surface.
3.4 Provide a spreader/distributor capable of achieving consistent, accurate and uniform distribution across the entire length and width of the roadway while minimizing dust. Ensure that the spreader has adjustable openings or gate headers and is not solely dependent on vehicle speed to obtain the required spread rate.
3.5 Provide a combination of sheepsfoot rollers, smooth wheel tandem rollers, and/or pneumatic-tired rollers that have the ability to adequately compact reclaimed material throughout the entire specified CMRB thickness. Ensure the necessary weight, size and number of rollers to achieve the requirements of **Subsection 10.**

4.0 CONSTRUCTION

4.1 Regulate the sequence of work to process the necessary quantity of material to provide the full depth of modification as shown on the Plans:

4.1.1 Ensure structural integrity of reclaimed material is consistent throughout the depth of the modification.

4.1.2 Ensure surface quality is sufficient to provide durable temporary pavement structure surface and supports permanent pavement structure performance.

4.1.3 Incorporate appropriate material as specified in the plans for drainage correction, cross slope correction or roadway strengthening.

5.0 QUALITY CONTROL PLAN, TEST STRIP & CORRECTIVE ACTION REQUIREMENTS

5.1 Prepare an annual Quality Control Plan that ensures that operational techniques and activities provide integral and finished material of acceptable quality for each Cement Modified Recycled Base project. Submit a Quality Control Plan detailing the type and frequency of inspection, sampling and testing deemed necessary to measure and control the various properties of materials and construction governed by the specifications. As a minimum, detail sampling location and techniques, and test frequency to be utilized in the sampling and testing plan. Submit a Quality Control Plan for acceptance to the Reclamation Engineer in writing a minimum of two weeks before work begins for the year.

5.2 The Quality Control Plan should include, but not be limited to addressing the following items;

5.2.1 Contingency plans for pulverization, mixing and compaction when specifications criteria are not met. Consider the specific roadway conditions of various project sites.

5.2.2 Plan for identifying in-situ moisture conditions, adjusting the moisture content to meet specifications, and maintaining moisture content through the time of curing. Include a description of the methods and minimum contractor testing for moisture. Consider specific environmental conditions of various project sites and schedules.

5.3 Test Strips

5.3.1 The first load of cement on the roadway will be used as a test strip to determine if the contractor is capable of producing a mixture according to specifications. Particular attention will be paid to the moisture and compaction requirements set in **Subsection 10**, mixing and processing requirements set in **Subsection 9**, pulverization requirements set in **Subsection 7**, depth requirements in **Subsection 17**, and cement tolerances in **Subsection 8**. Cease production after the first load if any of the requirements of the specification are outside of the tolerances and change procedures to contingency plans approved in the QC Plan to continue work. Continue production as normal on the same day when the test strip meets the specification requirements.

5.3.2 The first load applied with the contingency plans will be used as a test strip to evaluate the corrective action plan. Cease production after this initial load of cement if the requirements of this specification are still not being met and submit a revised corrective action plan to the RCE for acceptance prior to continuing work.

5.3.3 If the requirements of this specification are not being met in a section not defined as a test strip (a section is defined as one load of cement) then one additional load of cement will be allowed. Cease production after this additional load of cement if the requirements are still not being met and submit a corrective action plan to the RCE for acceptance prior to continuing work.

6.0 SHOULDERS & ROADWAY PREPARATION

6.1 Remove all excess vegetation generated from the clipping and cleaning of shoulders from the roadway and any other debris, including Reflective Pavement Markers, prior to performing the mixing operations. Remove material from the shoulders as necessary to ensure proper drainage at all times.

7.0 PULVERIZATION

7.1 Provide means, methods, and equipment necessary to obtain satisfactory pulverization of the pavement so that at the completion of pulverization and mixing (prior to compactive efforts), a uniform mixture is created in which 100% of the reclaimed material mixture (by weight) passes a 3 inch sieve and 95% of the reclaimed material mixture (by weight) passes a 2 inch sieve. When necessary, SC-T-1 Section 6.6 will be used for sampling to run gradation tests. Rework areas not meeting this gradation control measure as necessary, adhering to the time limitations in **Subsection 11**. The pulverization pass is defined as at least one pass of the mixer prior to the application of cement. Additional passes are allowed. Lightly compact following each pass of the mixer to produce a uniform layer. Carefully control the depth of pulverization and conduct operations in a manner to ensure that the surface of the roadbed below the pulverized material remains undisturbed and conforms to the required cross-section. Means, methods and equipment including but not limited to additional passes of the reclaimer, milling in place or the use of supplementary equipment to achieve pulverization is the responsibility of the contractor and incidental to the process.

7.2 If the requirements of pulverization are not being met in a section not defined as a test strip (a section is defined as one load of cement) then one additional load of cement will be allowed. Cease production after this additional load of cement if the requirements are still not being met and submit a corrective action plan to the RCE for acceptance prior to continuing work.

8.0 APPLICATION OF CEMENT

8.1 The Reclamation Engineer will determine the rate of cement based on test results supplied in writing by the Contractor. Do not commence construction until an approved rate has been determined by the Reclamation Engineer. Allow two weeks from the date of submittal for the results and selection of appropriate cement rate. The test results will be conducted according to SC-T-26 by an AASHTO accredited laboratory with material obtained from the roadway in which construction is to occur. Contact and notify the RCE within 48-72 hours of sampling for all roadways prior to any work being conducted. Ensure that the roadway sampling and mix design testing is representative of the entire area and depth to be treated, several samples and/or designs may be necessary. A minimum of 4 samples must be taken if the length of the roadway is equal to or less than 1 mile. If the length of the roadway is greater than 1 mile, a minimum of 1 sample per half of mile of roadway is required. The test results should include the soil classification of the sample(s) as well as the in-situ moisture content. Enough material should be collected so that additional tests can be ran in the event that the Reclamation Engineer has a question regarding the existing material.

8.2 Spread Portland Cement uniformly on the pulverized material at the rate established by the Reclamation Engineer, taking care to minimize fugitive dust and minimize overlapping of the passes (maximum 6 inches). Apply cement only when the temperature is 40°F in the shade and rising, and no freezing temperatures are predicted for at least 48 hours. Do not perform work on frozen or excessively wet subgrade. A tolerance of 5% (of the rate) is allowed in the spread rate for individual sections (load of cement) of roadway; however, adjustments should be made in order to keep the actual spread rate as close to that established by the Reclamation Engineer. Only apply cement to such an area that all the operations (including final compaction) can be continuous and completed in daylight, unless adequate artificial light is provided. Ensure that all operations (including final compaction) can completed within 3 hours of application of cement.

8.3 Do not allow the percentage of moisture in the reclaimed material mixture at the time of cement application to exceed the quantity that permits uniform and thorough mixture of reclaimed material or that creates instability of the roadway. Do not allow equipment, except that used in spreading and mixing, to pass over the freshly spread cement until it is mixed with the reclaimed material mixture.

8.4 If the requirements of cement application are not being met in a section not defined as a test strip (a section is defined as one load of cement) then one additional load of cement will be allowed. Cease production after this additional load of cement if the requirements are still not being met and submit a corrective action plan to the RCE for acceptance prior to continuing work.

9.0 MIXING & PROCESSING

9.1 Pulverize material as necessary to meet the requirements given in **Subsection 7**. The pulverization pass is defined as at least one pass of the mixer prior to the application of cement. Lightly compact following each pass of the mixer to produce a uniform layer.

9.2 After the cement has been applied per **Subsection 8**, mix and uniformly add necessary moisture to the reclaimed material to ensure that the moisture content is above the optimum value as set in the approved mix design and within +/- 2% of the optimum moisture content when tested within 30 minutes of final compaction. Mix with at least one pass of the reclaimer after cement application at minimum. Additional passes are allowed, adhering to time limitations set forth within this specification. Ensure full width pulverizing and mixing by overlapping a minimum of 6 inches with each longitudinal pass, including at the longitudinal joint of each lane, and a minimum of 2 feet with each transverse joint. Additional mixing passes may be required in the contract documents. Lightly compact following each pass of the mixer to produce a uniform layer.

9.3 Immediately begin final compaction after the mixing process has been completed so that the requirements of **Subsection 10** are met.

9.4 Remove excess material generated from the mixing process after final grading operations have been completed.

9.5 If the requirements of mixing and processing are not being met in a section not defined as a test strip (a section is defined as one load of cement) then one additional load of cement will be allowed. Cease production after this additional load of cement if the requirements are still not being met and submit a corrective action plan to the RCE for acceptance prior to continuing work.

10.0 COMPACTION

10.1 Before beginning compaction, ensure that the mixture is free from excessive fluff and overly compacted areas to allow for uniform compaction of the layer. Continue compaction until the entire depth of the base course mixture is uniformly compacted to not less than 95% of the maximum density. SC-T-23, SC-T-26, SC-T-27, or SC-T-29 will be used at the discretion of the Reclamation Engineer to determine the maximum density of the composite mix. If tests show that 95.0% requirement is not being met, adjust construction operations to obtain the required density. Complete the compaction work within 1 hour of the final mixing pass.

10.2 After the mixture is compacted, reshape the surface of the base course as necessary to conform to the required lines, grades, and cross-section. Perform light scarifying to a depth that removes the sheepsfoot imprints at minimum. Continue as required to obtain a uniform surface and to prevent scaling and delamination.

10.3 Perform compacting and finishing in a manner that produces a smooth, closely knit surface, free from equipment imprints, cracks, ridges, or loose material. Maintain the moisture content of the mixture within +/- 2% of the optimum moisture determined by the pre-approved mix design and keep the surface continuously moist to the time of final curing coat being applied. The moisture content and density requirements for compaction will be tested for acceptance within 30 minutes of final compaction. Additional moisture contents tests will be randomly performed for acceptance through the curing application to ensure that the surface moisture is maintained above optimum moisture.

10.4 If the requirements of compaction are not being met in a section not defined as a test strip (a section is defined as one load of cement) then one additional load of cement will be allowed. Cease production after this additional load of cement if the requirements are still not being met and submit a corrective action plan to the RCE for acceptance prior to continuing work.

11.0 CONSTRUCTION LIMITATIONS

11.1 Perform work in daylight hours unless adequate artificial light is provided. Limit the area over which the cement-pavement mixture is spread so that all operations specified in **Subsections 7, 8, 9, 10 and 13** are performed continuously until completion of a section (load of cement). Complete all grading and compaction work on a section (load of cement) within 2 hours after the initial mixing pass of the reclaimer unless the RCE approves a longer period.

11.2 If operations are interrupted for a continuous period of greater than 1 hour after the cement has been mixed with the reclaimed material, reconstruct the entire affected section (area of interruption) in accordance with these specifications. When the un-compacted reclaimed material mixture and cement is wetted so that the moisture content exceeds that specified, manipulate and aerate the mixture to reduce the moisture to the specified content provided the base course is completed within the time limits of these specifications.

11.3 Begin subsequent lifts of asphalt or chip seals which cover the Cement Modified Recycled Base curing methods and act as a final riding surface within 7 calendar days of completion of the CMRB section unless the RCE approves a longer period. Begin these subsequent lifts so that no more than 4 miles have temporary surface treatment on them at any time. A section is defined as the contract section of roadway receiving CMRB treatment. When using Curing Methods B or C, ensure that a milled surface is not left open to the public for more than 72 hours.

12.0 WEATHER LIMITATIONS

12.1 Apply cement only when the temperature is 40ºF in the shade and rising, and no freezing temperatures are predicted for at least 48 hours. Do not perform work on frozen or excessively wet subgrade. The temperature restrictions for single treatment, when used as a curing option, shall meet the requirements of this reclamation specification. If the successive course is a final riding course, the seasonal restrictions of December, January and February apply unless otherwise approved by the DOC.

13.0 CURING

13.1 After the Cement Modified Recycled Base has been finished as specified, cure the surface using the specified method in the plans or contract. Dampen and sweep the CMRB immediately prior to the application of the surface treatment.

Curing Method A: Surface (Single) Treatment
Curing Method B: Surface (Single) Treatment with Milling
Curing Method C: Surface (Double) Treatment with Milling

13.2 After the Cement Modified Recycled Base has been finished as specified, protect the base from rapid drying and traffic by placing Asphalt Surface Treatment as specified in **Section 406 or 407**, with the exception that lightweight aggregate is not required and CRS-2 may be used in place of CRS-2P. Perform this operation daily to protect the newly constructed Cement Modified Recycled Base, unless otherwise directed by the RCE.

13.3 Prior to placement of the HMA course in Methods B & C, mill the Cement Modified Recycled Base course surface to obtain a true and level finish for the asphalt placement. Ensure that a diamond milling pattern with a double or triple strike is clearly visible in the finished surface. Consider the final thickness during construction, leaving the specified depth of treatment after the milling has occurred. Ensure that the surface is left in a condition ready for paving, free from scabbing, scaling and other defects. Ensure that any structure lost to additional, deeper milling to remove these defects is replaced with asphalt. Include this cost in the Cement Modified Recycled Base price.

14.0 CONSTRUCTION JOINTS

14.1 At the end of each day's construction, form a straight construction joint as specified in **Subsection 301.4.9**.

15.0 SURFACE SMOOTHNESS

15.1 Ensure that the finished surface of the recycled base meets the requirements of **Subsection 301.4.10**. The grade of the road will be based on existing conditions of the roadway. Grade the cross slope to obtain positive drainage as well as smooth transitions from crown to superelevated sections of the roadway, re-grade roads with a pre-existing cross slope of 2% or greater to the same cross slope. On roads with a pre-existing cross slope of less than 2%, the Contractor and RCE will determine the measures required to obtain positive drainage and the final cross slope.

16.0 RIDEABILITY

16.1 Ensure that the final asphalt surface placed on Cement Modified Recycled Base course meets the Rideability requirements of SC-M-403 for either New Construction or Resurfacing, whichever is applicable based on the specified pavement structure.

17.0 THICKNESS TOLERANCE

17.1 The thickness of the completed Cement Modified Recycled Base will be measured at random intervals not to exceed 1,000 feet in length. The average job thickness will be measured daily using the average value of all measurements taken by the inspector each day. Where the measured thickness is more than 1 inch greater than the specified thickness, the thickness of that location will be considered the specified thickness plus 1 inch. If the average job thickness is deficient from the specified job thickness by more than ½ inch, an adjusted unit price is used for calculating payment. The pay factor will be calculated as below and applied;

$$Pay\ Factor = 1 - \frac{|Average\ Job\ Thickness - Specified\ Job\ Thickness|}{Specified\ Job\ Thickness}$$

$$Adjusted\ Contract\ Unit\ Price = Pay\ Factor * Contract\ Unit\ Price$$

17.2 If the requirements of thickness (any single test value greater than 1 inch different from the specified depth) are not being met in a section not defined as a test strip (a section is defined as one load of cement) then one additional load of cement will be allowed. Cease production after this additional load of cement if the requirements are still not being met and submit a corrective action plan to the RCE for acceptance prior to continuing work.

18.0 OPENING TO TRAFFIC

18.1 Local traffic may use completed portions of the Cement Modified Recycled Base provided the base has hardened sufficiently to prevent marring, damaging or visible rutting of the surface by such usage. Ensure that no damage occurs to the curing coat. With approval of the District Office, temporary detours may be utilized during the reclamation process to reduce the traffic on the reclaimed roadway. Use the subgrade shoulders or completed pavement, when available, for transporting materials, workers, and equipment throughout the project. Do not place construction equipment on the base without the approval of the RCE unless it is being used in the subsequent construction operation.

19.0 MAINTENANCE

19.1 Maintain the Cement Modified Recycled Base in accordance with **Subsection 301.4.13**.

20.0 MEASUREMENT

20.1 The quantity for the pay item Cement Modified Recycled Base (of the uniform thickness required) is the surface area of a uniform base constructed by applying and mixing cement with the subgrade as specified and is measured by the square yard (SY) of the modified base in-place, complete and accepted. Cement Modified Recycled Base constructed outside the designated area is not measured for payment.

20.2 The quantity for the pay item Portland Cement for Cement Modified Recycled Base is the weight of cement incorporated into the base at the rate established by the Reclamation Engineer and is measured by the ton (TON), complete and accepted. Portland cement incorporated in excess of 5% of the amount established by the Reclamation Engineer is not included in the measurement. Furnish the RCE with invoices of all cement received to verify weight.

21.0 PAYMENT

21.1 Payment for the accepted quantity of Cement Modified Recycled Base (of the uniform required thickness) or Portland Cement for Cement Modified Recycled Base, measured in accordance with Subsection 20 is determined using the contract unit bid price for the applicable item.

21.2 Payment for Cement Modified Recycled Base (of the uniform required thickness) is full compensation for constructing the Cement Modified Recycled Base course as specified or directed and includes pulverizing and scarifying the existing pavement, applying and spreading cement, processing and mixing base course material, watering and maintaining proper moisture content, compacting, finishing, curing, hauling and disposing of excess shoulder material and curing base course, forming construction joints, and all other materials, labor, equipment, tools, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

21.3 Base course that is deficient in thickness is paid for at the adjusted unit price specified in **Subsection 20**.

21.4 Payment for Portland Cement for Cement Modified Recycled Base is full compensation for furnishing and weighing the cement as specified or directed and includes all other materials, labor, equipment, tools, supplies, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the Contract.

21.5 Payment for excess reclaimed material generated from the roadway (excluding shoulder material) is paid for as unclassified excavation.

21.6 Payment for each item includes all direct and indirect costs or expenses required to complete the work.

21.7 Pay items under this section include the following:

Item No.	Pay Item	Unit
3063211	Cement Modified Recycled Base (6" Uniform) – Method A	SY
3063212	Cement Modified Recycled Base (6" Uniform) – Method B	SY
3063221	Cement Modified Recycled Base (8" Uniform) – Method A	SY
3063222	Cement Modified Recycled Base (8" Uniform) – Method B	SY
3063232	Cement Modified Recycled Base (10" Uniform) – Method B	SY
3063242	Cement Modified Recycled Base (12" Uniform) – Method B	SY
3063243	Cement Modified Recycled Base (12" Uniform) – Method C	SY
3064000	Portland Cement for Cement Modified Recycled Base	TON

August 1, 2014

107.13 Correcting Low Shoulder Conditions

107.13.1 Amending Shoulder Conditions Resultant of Roadway Resurfacing Work and Similar Types of Roadway Surface Work on Primary and Secondary Roadways

1 These specifications address the maintenance requirements for earth shoulders adjacent to the edge of pavement on Primary and Secondary roadways relative to typical roadway resurfacing work, various roadway work operations that result in a new roadway surface, work that may alter the grade elevation of the edge of pavement or any similar type work that may disturb the earth shoulder immediately adjacent to the edge of pavement. The earth shoulder immediately adjacent to the edge of pavement is the location where the edge of pavement and the earth shoulder come into contact. The edge of pavement may occur at the edge of a travel lane or a paved shoulder area.

2 Inspect and evaluate the conditions of the earth shoulders prior to, during and upon completion of all types of roadway surface work previously specified. Utilize these evaluations to determine the necessity and type of corrective actions that may be required and implemented.

3 Ensure the presence of acceptable conditions between the surface of the edge of pavement and the surface of the earth shoulder immediately adjacent to the edge of pavement immediately prior to beginning and upon completion of the roadway surface work on each road. Also, during the daily execution of the roadway surface work, ensure the presence of acceptable temporary conditions between the surface of the edge of pavement and the surface of the earth shoulder immediately adjacent to the edge of pavement prior to the end of each workday or work shift. Maintain an acceptable temporary condition, as defined in **Section 107.13.5,** during performance of the roadway surface work. Provide an acceptable final cross-section profile of the earth shoulder, as defined in **Section 107.13.6**, upon completion of the roadway surface work on each road.

107.13.2 Identifying Pre-Existing Low Shoulders Before the Commencement of the Roadway Surface Work

1 An acceptable grade elevation of the earth shoulder immediately adjacent to the edge of pavement prior to beginning the roadway surface work will not generate a grade elevation difference greater than an acceptable temporary condition of 3 inches as defined in **Section 107.13.5** during performance of the roadway surface work. An earth shoulder / edge of pavement profile that will generate a temporary grade elevation difference greater than 3 inches between the surface of the edge of pavement and the surface of the earth shoulder immediately adjacent to the edge of pavement during performance of the roadway surface work is considered low and in need of corrective action. When this condition exists prior to beginning the roadway surface work, these areas will be referred to as pre-existing low shoulders.

2 Before beginning the roadway surface work, together with the RCE, inspect the roads within the project to identify pre-existing low shoulders. On each roadway, complete the corrective shoulder work to eliminate the pre-existing low shoulder prior to beginning the roadway surface work that will alter the grade elevation of the edge of pavement of the road.

107.13.3 Correction of Pre-Existing Low Shoulders Before the Commencement of the Roadway Surface Work

1 Correct pre-existing low shoulders by bringing in and spreading borrow material where placement of borrow material is considered an acceptable corrective action unless an alternative corrective action is deemed necessary and agreed upon by the Contractor and the RCE. For each roadway, complete all work to correct pre-existing low shoulders prior to starting the roadway surface work on that roadway. Payment for the corrective actions implemented by utilization of borrow material will be at the contract unit bid price for Borrow Excavation in accordance with the requirements of **Section 203**. Alternative corrective actions and/or any corrective actions without a unit bid price item included in the contract should be implemented and payment made for through issuance of a Change Order in accordance with **Section 101.3.10**.

2 The RCE will inspect the correction of pre-existing low shoulders. If additional corrective action is determined necessary, the RCE will direct and notify, in writing, the need for additional corrective actions. The Contractor shall complete these additional corrective actions within 72 hours of receipt of this written notification from the RCE.

107.13.4 Installation and Maintenance of "Low Shoulder" Signs

1 Prior to beginning any roadway surface work that will alter the grade elevation of the edge of pavement of the road, install "Low Shoulder" signs (W8-9) on roadways where the temporary grade elevation difference between the surface of the edge of pavement and the surface of the earth shoulder immediately adjacent to the edge of pavement is anticipated to exceed 2 inches but remain less than or equal to 3 inches. These signs may be mounted on ground mounted or portable sign supports. When installing "Low Shoulder" signs, install the "Low Shoulder" signs in each direction, throughout the length of the road intended for the roadway surface work at intervals not to exceed 1 mile with the initial sign encountered by motorists installed at a location no further than 150 feet beyond the beginning of the project limits of the road subject to the roadway surface work.. Install "Low Shoulder" signs, in each direction, no further than 150 feet beyond intersections with side roads.

2 Maintain all "Low Shoulder" signs within the termini of the project until the shoulder conditions have been dressed and contoured to an acceptable final cross-slope profile as defined in **Section 107.13.6** and to the satisfaction of the RCE upon completion of all work on each road.

3 Payment for the "Low Shoulder" signs will be at the contract unit bid price for Permanent Construction Signs in accordance with the requirements of **Section 605.5**. Measure the quantity of "Low Shoulder" signs installed and mounted on ground mounted or portable sign supports by the square foot (SF) using the outside dimensions of the sign, complete and accepted. No deduction is made for the corner radii of the sign.

4 When installing these signs prior to beginning the roadway surface work, cover the signs with opaque materials and maintain the sign coverings until immediately prior to the Contractor's mobilization onto the road to begin the roadway surface work activities. Maintain the sign coverings, including repair and/or replacement of the sign coverings, as directed by the RCE, until beginning mobilization of personnel and equipment onto the road to commence the roadway surface work activities.

107.13.5 Maintenance of Temporary Shoulder Conditions During the Implementation of the Roadway Surface Work

1 During implementation of the roadway surface work, a grade elevation difference of 3 inches or less between the surface of the edge of pavement and the surface of the earth shoulder immediately adjacent to the edge of pavement is considered an acceptable temporary condition. The temporary grade elevation difference of 3 inches between the surface of the edge of pavement and the surface of the earth shoulder immediately adjacent to the edge of pavement may not exceed 3 inches. The acceptable temporary grade elevation difference of 3 inches or less may remain in place until the final corrective shoulder work is implemented as defined in **Section 107.13.6.** The presence of a grade elevation difference greater than 3 inches shall require corrective action by the Contractor. Upon discovery of a grade elevation difference greater than 3 inches, the RCE shall provide notification to the Contractor within 24 hours of the discovery. The notification shall include identification of the location(s) in need of corrective actions. The Contractor should install "Shoulder Drop Off" signs (W8-17-48) in advance of these locations and maintain these temporary sign installations in place until the condition is corrected. These signs may be mounted ground mounted or portable sign supports. The Contractor shall complete the corrective action of the identified location(s) within 72 hours of receipt of notification of discovery of the condition from the RCE.

2 Payment for the "Shoulder Drop Off" signs will be at the contract unit bid price for Permanent Construction Signs in accordance with the requirements of **Section 605.5**. Measure the quantity of "Shoulder Drop Off" signs installed and mounted on ground mounted or portable sign supports by the square foot (SF) using the outside dimensions of the sign, complete and accepted. No deduction is made for the corner radii of the sign.

107.13.6 Installation of the Final Shoulder Profile Upon Completion of the Roadway Surface Work on Each Road

1 Within 3 days of completion of the application of the final riding surface to a road during typical roadway resurfacing work, various roadway work operations that result in a new roadway surface, work that may alter the grade elevation of the edge of pavement or any similar type work that may disturb the earth shoulder, begin the corrective action to eliminate the temporary shoulder conditions created by the performance of the roadway surface work to that road. Make reasonable efforts, weather permitting, to continue the corrective shoulder work until the temporary shoulder conditions are eliminated to the satisfaction of the RCE. The corrective action for elimination of the temporary shoulder conditions shall include, but not be limited to, placing borrow material against the edge of pavement as directed by the RCE to achieve a "flush" or "near flush" condition. The final grade elevation of the earth shoulder immediately adjacent to the edge of pavement shall be "flush" or "near flush" with any grade elevation difference no greater than 1 inch between the surface of the edge of pavement and the surface of the earth shoulder immediately adjacent to the edge of pavement. The surface of the earth shoulder immediately adjacent to the edge of pavement shall not exceed the grade elevation of the surface of the edge of pavement.

2 Where the earth shoulders are 6 feet wide or wider, as measured from the edge of pavement to the beginning of the front slope of an adjacent ditch or fill slope, ensure the final cross-section profile of the earth shoulder adjacent to the edge of pavement exhibits a slope no steeper than 12 : 1 in accordance with the *SCDOT Highway Design Manual,* latest edition. In those areas where the earth shoulders are less than 6 feet wide, as measured from the edge of pavement to the beginning of the front slope of an adjacent ditch or fill slope, dress the final cross-section profile of the earth shoulder from the edge of pavement to the beginning of the front slope of the adjacent ditch or fill slope.

3 Situations may arise that require cutting of the shoulder to attain an acceptable final cross-section profile of the earth shoulder adjacent to the edge of pavement as required by these specifications. When the required cutting of the shoulder is sufficient to also require hauling of the cut material from the site, pay for this work in accordance with those requirements specified in **Subsection 203.2.1.2 Unclassified Excavation**.

4 Notify the RCE within 3 days of completing the corrective action for elimination of the temporary shoulder conditions for each road. The RCE will inspect the prescribed shoulder work within 3 working days of receipt of such notification. If additional corrective action is determined necessary, the RCE will direct, in writing, additional corrective actions.

5 Remove "Shoulder Drop Off" and "Low Shoulder" signs within 7 days of completion of

SCDOT 2025 Standard Specification

108.9 – Failure to Complete Work on Time

If the Contractor fails to substantially complete the work by the contract completion date, the Contractor is liable for liquidated damages. Liquidated damages shall be assessed for each day beyond the contract completion date that the project is not substantially complete. The date of substantial completion is determined by the RCE. Days to be charged for liquidated damages will not stop due to seasonal restrictions. The daily liquidated damages rate is determined from the following schedule. This table does not apply if a different amount for liquidated damages is specified in the Contract Special Provisions.

Schedule of Liquidated Damages for Each Day Overrun in Contract Time		
Original Contract Amount		Daily Charge per Calendar Day at Fixed Rate
From More Than	To and Including	
$0.00	$500,000.00	$600.00
$500,000.00	$1,000,000.00	$800.00
$1,000,000.00	$2,000,000.00	$1,000.00
$2,000,000.00	$5,000,000.00	$1,200.00
$5,000,000.00	$10,000,000.00	$1,700.00
$10,000,000.00	and above	$2,200.00

The punch list must be completed within 30 days of the final inspection unless another time frame is agreed upon by the RCE and Contractor at the final inspection. Seasonal restrictions and temperatures may be considered for individual items. Failure to complete the punch list may result in the RCE charging liquidated damages at the specified rate for any punch list item remaining incomplete beyond 30 days. Liquidated damages will be charged daily until all punch list items are complete. If a final inspection is held prior to the contract completion date, liquidated damages shall not be charged prior to the contract completion date for incomplete punch list items.

APPROVED:
Division Administrator
THADDEUS W KITOWICZ Digitally signed by THADDEUS W KITOWICZ Date: 2024.11.29 10:17:15 -05'00'
By: _____
FEDERAL HIGHWAY ADMINISTRATION

January 1, 2025

FUEL ADJUSTMENT INDEXES

General: The Bidder is advised that the Department will apply Fuel Adjustments *for specified items of work* when the Indexes for Diesel and Unleaded fuels vary more than 10% from Base Indexes established for the contract.

Indexes: The Department maintains Indexes for Diesel and Unleaded fuel based on fuel prices from the South Carolina Budget and Control Board – Materials Management Office, which negotiates fuel contracts for the state. The Department averages Zone 1 (upper state) and Zone 2 (lower state) prices for Diesel and Unleaded fuel to calculate the Indexes for the 1st and 17th of each month. The resulting indexes are posted in spreadsheet form on the Department's Internet site at https://www.scdot.org/business/constructionletting-monthlyindex.aspx.

Base Index: The Department sets a Base Index date for each contract subject to fuel adjustments with the date set prior to the highway letting. The Indexes for Diesel and Unleaded fuel on that Base Index date sets the framework of the 10% adjustment increments to be used for the contract. Tables showing the adjustment increments are displayed in the above noted spreadsheet (Fuel Charts tab).

Fuel Usage Factors: The following table shows the Fuel Usage factor (gallons of fuel per unit of work) for SCDOT work items that are subject to this specification. In order for contract work items to be eligible for index adjustments, the work item(s) must be specifically indicated in the Special Provisions of the Contract.

Items of Work Eligible for Fuel Adjustments	Units of Measure	Diesel Fuel	Unleaded Fuel
Excavation (Unclassified, Borrow, etc.)	Gallons/CY	0.29	0.15
Embankment in Place	Gallons/CY	0.29	0.15
Sand Clay Base Course 6" Uniform	Gallons/SY	0.05	0.02
Sand Clay Base Course 8" Uniform	Gallons/SY	0.06	0.03
Graded Aggregate Base Course 6" Uniform	Gallons/SY	0.10	0.06
Graded Aggregate Base Course 8" Uniform	Gallons/SY	0.13	0.06
Hot Mix Asphalt (Base, Binder, Surface Courses)	Gallons/Ton	2.90	0.71
Portland Cement Concrete Pavements	Gallons/SY	0.25	0.20
Structural Concrete	Gallons/CY	1.00	0.20
Reinforced Concrete Pipe (24" or less)	Gallons/LF	0.50	0.15
Reinforced Concrete Pipe (greater than 24")	Gallons/LF	0.75	0.15
Full Depth Patching - 4" (Fuel)	Gallons/SY	0.64	0.16
Full Depth Patching - 6" (Fuel)	Gallons/SY	0.96	0.23
Full Depth Patching - 8" (Fuel)	Gallons/SY	1.28	0.31
Full Depth Patching - 10" (Fuel)	Gallons/SY	1.60	0.39
Full Depth Patching - 12" (Fuel)	Gallons/SY	1.91	0.47
Smooth Wall Pipe (24" or less)	Gallons/LF	0.50	0.15
Smooth Wall Pipe (Greater than 24")	Gallons/LF	0.75	0.15
Corrugated Wall Pipe (24" or less)	Gallons/LF	0.50	0.15
Corrugated Wall Pipe (Greater than 24")	Gallons/LF	0.75	0.15

Per unit index adjustments are determined by multiplying the Fuel Usage factor by the Fuel Index Change (minimum of incremented range) for each type of fuel. The total of these two results is then applied to the construction estimate as a line item adjustment. If only one type of fuel changes in excess of 10%, then the adjustment will be based on that figure alone.

Additional Provisions:

A. The Department will calculate and apply fuel adjustments to estimates based on index values set at the beginning of the estimate period.
   - Estimate period begins on the 1st of the month and ends on the last day of the month. The 1st of the month Index will be compared to the contract Base Index to determine index adjustments for the estimate period.

B. In the event the work (on a contract item subject to fuel adjustments) continues after expiration of the contract completion date, the fuel indexes in effect on the contract completion date will become the ceiling (or maximum) of indexes to be applied for the work. Lower indexes will be applied, while higher indexes will be limited to the ceiling noted.

C. This provision shall apply to supplemental agreements, overruns and extensions to this project for the specified item(s) to be adjusted.

D. The Base Index, Current Index and Adjustments may be referenced directly on the Department's Index spreadsheet at https://www.scdot.org/business/constructionlettingmonthlyindex.aspx.

APPROVED:
Division Administrator
THADDEUS W KITOWICZ Digitally signed by THADDEUS W KITOWICZ Date: 2024.11.29 10:00:07 -05'00'
By: _____
FEDERAL HIGHWAY ADMINISTRATION

Supplemental Technical Specification for

PERMANENT PIPE CULVERTS

SCDOT Designation SC-M-714 (01/25)

Reinforced Concrete (RCP), Corrugated Aluminum Alloy (CAAP), Spiral Ribbed Aluminum (SRAP) & High Density Polyethylene Pipe (HDPE) Pipe Culverts

714.1 Description

This specification establishes requirements for the materials, construction, measurement, and payment for furnishing reinforced concrete pipe culverts (RCP) corrugated aluminum alloy pipes and pipe arches (CAAP), spiral ribbed aluminum pipe (SRAP), and high density polyethylene pipe culvert (HDPE) of the size, shape, type, and dimensions indicated on the plans and installing them to provide drainage structures at places designated on the plans or by the RCE in accordance with these specifications and true to the lines and grades shown on the plans or otherwise given by the RCE. This work includes the furnishing and installing of necessary tee, wye, elbow, and bend joints, and making connections to existing and/or new structures, including drilling and chipping as is necessary to complete the work.

714.1.1 Pipe Culvert Type Selection

Flexible pipe culverts are prohibited from use on all Interstate and SCDOT Evacuation Routes. Use only rigid pipe culverts for all Interstate and SCDOT Evacuation Routes statewide. SCDOT Evacuation Routes are available on the Department's website at www.scdot.org. See table below:

Permanent Pipe Culvert Material Selection Criteria For Drainage Pipe				
Pipe Material Type	**Pipe Type**	**Non-Interstate Routes**	**Interstate Routes**	**SCDOT Evacuation Routes**
Reinforced Concrete (RCP)	Rigid	Yes	Yes	Yes
Spiral Ribbed Aluminum (SRAP)	Flexible	Yes	No	No
Corrugated Aluminum Alloy (CAAP)	Flexible	Yes	No	No
High Density Polyethylene (HDPE)	Flexible	Yes	No	No

714.2 Materials

Use only materials specified herein for the several items that constitute the finished pipe culverts.

714.2.1 RCP Materials

Use only RCP from a qualified manufacturer as indicated on SCDOT Qualified Product List 69. Use only joint sealant specified on SCDOT Qualified Product List 69 with the pipe supplied.

On occasion, the OMR may accept RCP that is not stamped, provided certified tests results are submitted for review for each class and size of RCP to include but is not limited to the results from the three edge bearing test for hairline crack (0.01 inch) and the ultimate strength of RCP. All testing will be in accordance to the latest applicable SCDOT and AASHTO specifications.

Use circular RCP conforming to the applicable requirements of AASHTO M 170 for the specified diameters, shapes, types, and strength classes except for the modifications stated herein and on SCDOT Standard Drawings. Provide the RCE with certification that pipe meets the requirements of AASHTO M 170. When a strength class is not specified in the plans, refer to standard drawing 714-205-01 for allowable fill heights, or provide structural calculations signed by a Professional Engineer that is licensed in South Carolina following the appropriate criteria outlined in SCDOT Preconstruction Design Memorandum-05. Furnish pipe in manufactured lengths from 4 to 12 feet.

Ensure circular pipe meet or exceed the reinforcement requirements of AASHTO M 170. Install standard AASHTO M 170 reinforced pipe within minimum and maximum fill heights shown on SCDOT Standard Drawings.

Ensure that Portland cement conforms to the requirements of SCDOT Standard Specifications Section 701.

The manufacturer may use fly ash and water-granulated blast-furnace slag in accordance with the following requirements:

1. Fly ash meets AASHTO M 295 for Type F or C with a maximum Na_2O of 1.5%. Water-granulated blast-furnace slag meets the requirements of AASHTO M 302, Grade 100 or better.

2. Cement may be replaced by fly ash or water-granulated blast-furnace slag in accordance with AASHTO M 170.

3. Fly ash is allowed only from sources listed on the latest edition of SCDOT Qualified Product List 3. Slag is allowed only from sources listed on the latest edition of SCDOT Qualified Product List 6. Certified mill test reports are furnished with each shipment to verify compliance requirements.

4. The manufacturer provides a qualified OMR mix design in advance of batching. The submittal indicates the amount of cement removed and the material replacing it.

5. Storage bins, conveying devices and weighing equipment and procedures to ensure accurate batching provided for each material (fly ash or slag) used.

Use only circular reinforcement as listed in AASHTO M 170 for standard pipe. Make certain that steel reinforcement conforms to the requirements of AASHTO M 336 for wire reinforcement as applicable. Use only steel that conforms to the parameters used in the pipe structural calculations supplied for SCDOT Standard Drawings. For custom pipe requiring deformed billet steel, use circular reinforcement that conforms to AASHTO M 31, Type W (ASTM A 706 Grade 60). Ensure that steel conforming to AASHTO M 31, Type W comes from a source listed on SCDOT Qualified Product List 60.

Ensure that Rubber Gasket Joint Material meets the requirements of ASTM C 443. Ensure that Preformed Flexible Joint Sealant meets the requirements of ASTM C 990. Use only gasket sources that appear on SCDOT Qualified Product List 69 with the supplied pipe. Obtain qualification by furnishing the OMR a certified affidavit with test results made in a recognized laboratory confirming that the material meets ASTM C 990 for preformed flexible joint sealant and ASTM C 443 for rubber gaskets, along with complete instructions for installation of the material.

Make certain water meets the requirements of SCDOT Standard Specifications Section 701.

When lift holes or lugs are required in pipe, follow OSHA guidelines for handling pipe, and manufacturer guidelines for plugging lift holes after installation.

For custom pipe, when noncircular (elliptical, shear stirrups, etc.) reinforcement is used,

1. Stabilize reinforcement by satisfactory means to ensure that it does not shift or rotate during the manufacturing process

2. Provide a stencil on the inside and outside shell indicating "CUSTOM PIPE NON CIRCULAR REINFORCEMENT TOP OF PIPE" and a mark "X" indicating exact top of pipe.

3. Provide structural calculations signed by a Professional Engineer that is licensed in South Carolina following the appropriate criteria outlined in SCDOT Preconstruction Design Memorandum-05 for custom pipe with non-circular reinforcement.

4. Provide to RCE and follow manufacturer guidelines for proper handling and installation instructions. Use installation procedure and materials that meet or exceed the limitations of this specification.

714.2.2 CAAP and SRAP Materials

Use only materials specified herein for the several items that constitute the finished pipe culvert. Use pipe supplied with joint sealant material and manufactured at a facility listed on Qualified Product List 68.

Provide corrugated aluminum alloy pipe, pipe-arch, and spiral ribbed aluminum pipe conforming to AASHTO M 196. Provide the RCE certification that the pipe meets the requirements of AASHTO M 196. Ensure that the thickness of the pipe is in accordance with the plans.

Use aluminum alloy sheets or coils that have been marked and conform to AASHTO M 197. Use permanent sheet markings which identify the name or trademark of sheet manufacturer; alloy and temper; specified thickness or gage; date of manufacture by a six-digit number indicating in order the year, month, and day of the month; and designation number AASHTO M 197.

Use a permanent sheet marking method to mark pipe with pipe fabrication information. Mark fabricated pipe with name or trademark of pipe fabricator, date of fabrication of pipe by a six-digit number indicating in order the year, month, and day of the month, designation number AASHTO M 196. Align identifying markings with the direction of corrugation and spaced in accordance with ASTM B 666.

Mark fittings with the manufacturer's identification symbol and specification designation AASHTO M 196.

714.2.3 HDPE Materials

Provide corrugated high density polyethylene pipe culvert conforming to the requirements of AASHTO M 294, Type S, as required. Use pipe supplied with joint sealant material and manufactured at a facility listed on Qualified Product List 30.

For AASHTO M 294, Type S pipe, provide pipe with an outer corrugated high density pipe wall and a smooth inner liner. Use only AASHTO M 294, Type S pipe in permanent applications.

Use only materials from sources complying with the SCDOT Qualified Product Policy 30 and appearing on the SCDOT Qualified Product List 30. Pipe facilities listed on Qualified Product List 30 are considered to be in compliance with M 294 and will be listed as Compliant-V for facilities qualified to supply pipe produced with only virgin materials or Compliant-VR for facilities qualified to supply pipe containing recycled materials as well as pipe containing only virgin materials.

Ensure that the shipped pipe is plainly marked with the manufacturer's name, trademark, nominal size, specification designation AASHTO M 294V or M 294R, plant designation

code, and the date of manufacture or an appropriate code. Ensure that the shipped fittings are plainly marked with the manufacturer's identification symbol and specification designation AASHTO M 294.

714.2.4 Special Materials and Connections

If special designed pipe is required (beyond the fill height limits of the SCDOT Standard Drawings), have the manufacturer submit a design to the OMR that meets or exceeds the loading criteria specified on SCDOT Preconstruction Design Memorandum-05 for the design cover height for the project and the pipe material chosen.

Use tees, wyes, elbows, bends, reducers, and increasers with strength matching or exceeding the strength of the strongest pipe being connected and with the same joint profile of the connecting pipe. Use tees, wyes, elbows, bends, reducers, and increasers with joint profiles that match connected pipe.
When geotextile for drainage filtration is required, follow SCDOT Standard Specifications Section 804 and SCDOT Standard Drawings.

714.2.5 Referenced Documents

SCDOT Standard Specifications for Highway Construction

SCDOT Supplemental Specification for Dissimilar Pipe Couplers

SCDOT Test Procedure:
- SC-T-29

SCDOT Qualified Product Lists:
- Qualified Product List 1
- Qualified Product List 2
- Qualified Product List 3
- Qualified Product List 30
- Qualified Product List 60
- Qualified Product List 68
- Qualified Product List 69

SCDOT Memorandums:
- SCDOT Instructional Bulletin 2009-4
- SCDOT Preconstruction Design Memorandum-05

AASHTO Standard Specifications for Transportation Materials & Methods of Sampling and Testing:
- AASHTO M 31
- AASHTO T 96
- AASHTO T 99
- AASHTO T 104

- AASHTO M 145
- AASHTO M 170
- AASHTO M 196
- AASHTO M 197
- AASHTO M 198
- AASHTO M 207
- AASHTO M 294
- AASHTO M 295
- AASHTO M 302
- AASHTO M 315
- AASHTO M 336

ASTM Standard Specifications:

- ASTM A 307
- ASTM A 706
- ASTM B 666
- ASTM C 443
- ASTM C 990
- ASTM C 1479
- ASTM D 1149
- ASTM D 2321
- ASTM D 1056
- ASTM D 3212
- ASTM F 477

Websites:
www.scdot.org
www.osha.gov
www.scosha.llronline.com
www.concretepipe.org
www.precast.org
www.plasticpipe.org
www.ntpep.org

714.3 Construction Requirements

714.3.1 Handling and Storage

Inspect pipe before it is installed. Check pipe for proper markings and for signs of damage due to fabrication or shipment. Pipe may be rejected due to improper marking, incorrect pipe class, gage, corrugation type, size, or strength. Pipe may also be rejected due to damage which may include, but is not limited to fractures or cracks passing through the wall or extending the entire length of the pipe, spalling, chips, breaks, honey-combing, cuts, gouges, de-laminations, bulges, flat areas, bubbles, dents, tears, breaks, gaps, missing or malformed corrugations, or deformations that would adversely affect the

strength or function of the pipe. Damage to the end of the pipe including open seams (particularly at rerolled ends) or end damage to bell or spigot, or ends that are not normal to the walls or centerline of the pipe that prevent satisfactory joint installation may also be cause for rejection. Defective or damaged joint sealant or gaskets may require replacement, but are not cause for rejection of pipe that meets the above requirements.

Handle and store pipe such that no damage occurs to the pipe. Unload the pipe at a site that is relatively flat and level, free of debris, and away from construction traffic. Stack belled RCP pipes using blocking to avoid excess loading on the bells.

For RCP pipe marked "NON CIRCULAR REINFORCEMENT TOP OF PIPE" follow manufacturer requirements for proper handling of pipe.

714.3.2 Trench for Pipe

Excavate trenches to the required grade and to a width sufficient to allow for proper jointing of the pipe and for thorough compaction of the structural backfill material under and around the pipe. Excavate the trench to a minimum width for the selected pipe type or specific site conditions as required below:

1. CAAP, SRAP, HDPE Trench Widths = 1.5 x Pipe OD + 12" or the width required to safely fit compaction equipment and personnel between the pipe and the trench walls, whichever is greater.

2. RCP Trench Width = Pipe OD + 24" or 1.33 x OD or the width required to safely fit compaction equipment and personnel between the pipe and the trench walls, whichever is greater.

3. 3 x Pipe OD (only in sections where the foundation, lower side, or trench wall improvements are required in the plans or by the RCE).

Where pipe culverts will be placed in new embankments, first construct the embankments to a height of approximately 1/2 the diameter of the pipe above the top of the designated pipe or to such height as directed by the RCE. Construct the embankment for a distance of not less than 5 times the diameter of the pipe on each side of the pipe location, after which excavate the trench in the embankment as described in this section above.

When excavating for pipe culverts, if rock, hard pan, or other unyielding foundation material is encountered, excavate the hard unyielding material below the elevation of the bottom of the pipe to accommodate the required bedding thickness.

Follow OSHA's excavation regulations found in Subpart P of 29 CFR 1926 for safety requirements of trench excavations and protection systems. The Contractor shall employ an onsite Competent Person (as defined by SC OSHA as follows: one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization

to take prompt corrective measures to eliminate them. In order to be a competent person for the purpose of this standard one must have had specific training in, and be knowledgeable about, soils analysis, the use of protective systems, and the requirements of this standard) during all trenching operations. Provide the RCE with the name and contact information of the responsible Competent Person for each installation. If trench widths or wall slopes are changed due to safety requirements, backfill the trench with structural or embankment backfill equal to the level described in the Standard Drawings for Pipe Culverts.

If trench boxes (shields, etc.) are required, follow 29 CFR 1926.652, trench box manufacturer, and industry standards for trench installations not exceeding 20 feet deep. When trench boxes are required for trenches exceeding 20 feet deep, the Contractor shall submit to the RCE designs, plans and supporting calculations for protective systems and shoring equipment sealed by a Professional Engineer that is licensed in South Carolina unless provided in the plans. When trench boxes are moved, the previously placed pipe and structural backfill shall not be disturbed. Move trench box in increments during the installation process to permit placement and compaction of structural backfill material for the full width of the trench while continuing to follow Subpart P of 29 CFR 1926 OSHA Standards. Voids that are created by movement of the trench box shall be filled and compacted with structural backfill incrementally with the movement of the trench box, as described in Subsection 714.3.7. If necessary to prevent movement, restrain the pipe using methods that do not damage the pipe.

If temporary shoring (sheet pile, timber shoring, mechanically stabilized earth, etc.) is required, the Contractor shall submit to the RCE designs, plans and supporting calculations for protective systems and shoring equipment sealed by a Professional Engineer that is licensed in South Carolina unless provided in the plans. If temporary shoring is to be removed, if structural design allows, it shall be pulled out in vertical increments during the installation process to permit placement and compaction of fill material for the full width of the trench while continuing to follow Subpart P of 29 CFR 1926 OSHA Standards. If temporary shoring is to be left in place, provide the RCE with location and description of all buried systems for inclusion in as-built plans.

Provide for temporary diversion of water or pumping as may be necessary in order to permit dry installation of the culvert. Keep trenches free from water until pipes are joined and properly backfilled.

714.3.3 Improved Foundation for Pipe

Unless noted otherwise in the plans or by the RCE, support pipe using foundation material that meets the minimum requirements of the roadway embankment.

Use the soil boring Standard Penetration Test SPT "N" values and recommendations of SCDOT Standard Drawings to determine if additional work is required to prepare an improved foundation. Reference SCDOT standard drawings for improved foundation requirements. Excavate deep enough to install nonwoven geotextile for drainage

filtration and pipe foundation material as indicated on SCDOT Standard Drawings. If Type B4 biaxial geogrid is used with the foundation material and geotextile for drainage filtration, the additional foundation undercut may be reduced as indicated on SCDOT Standard Drawings. When pipe foundation material is indicated, use the same material that is used for the bedding and pipe structural backfill. Compact the pipe foundation material in accordance with methods used for pipe structural backfill. Provide trench suitable to accommodate site conditions and obstructions.

If site conditions are encountered that were not indicated in the plans, contact the design engineer of record for instructions on foundation preparation.

714.3.4 Bed for Pipe

For bedding material, use either:

1. Well graded A-1 (AASHTO M 145) soils
2. Screenings meeting A-1 (AASHTO M 145)
3. Macadam or Marine Limestone Graded aggregate base from Qualified Product List 2
4. Materials meeting AASHTO soil classifications A-2-4
5. Uniformly graded, coarse grained A-3 (AASHTO M 145) soils
6. Uniformly graded angular stone as large as #5 stone (Class 2 wrapped, vibrated)

The same material must be used for bedding and structural backfill unless CLSM is used for structural backfill.

The materials marked as (wrapped) require geotextile wrap to control migration of fines into open voids. Other materials should be wrapped if there is a significant grain or particle size difference between the in-situ or embankment material and the bedding and structural backfill material as determined by the RCE. When wrapping is used, provide a geotextile that prevents the transmission of the smallest soil particles present in both the in-situ soil and the soil used for bedding and structural backfill. Wrap the entire bedding and backfill envelope and provide a minimum overlap of 2 feet at all geotextile splices. For shallow installations, provide a cover of 6 inches of soil between geotextile and hot mix asphalt.

A sample of the pipe bedding material will be taken at the beginning of pipe laying operations to verify the classification of materials used for bedding and pipe structural backfill. After the initial sample is taken, the sampling frequency will be for each 1,000 foot production lot or until the source or classification of the bedding/backfill material changes. These are minimum requirements that may be increased at the RCE's discretion.

Ensure that trenches are free of water when placing bedding.

Support the pipe by placing uncompacted bedding material above the stable foundation material. Use the larger of 6 inches or 10.0% of the nominal pipe outside diameter for the bedding thickness. Prepare bedding material at pipe bells and projected hubs (if present) to prevent excess loading and to provide uniform support in these areas.

Compact bedding material that is outside of the middle third pipe diameter in order to ensure proper support of the pipe. Ensure that bedding material outside the middle third of pipe is compacted to a minimum of 95.0% of the maximum dry density when measured in accordance to SC-T-29 (use AASHTO T-99 for determination of maximum dry density for A-1 Screenings or Aggregate Base Course materials). Ensure that compaction of bedding material does not cause the pipe to move.

Vibrate angular stone in place using a minimum of 2 passes with a vibratory plate tamp in lifts not to exceed 12 inches, unless additional passes are required to consolidate the stone as directed by the RCE.

Do not use controlled low strength material (CLSM), flowable fills or concrete for pipe bedding.

714.3.5 Laying Pipe

Begin pipe laying at the downstream end of the culvert with the bell or groove ends and outside laps upstream.

Make certain each section of pipe has a full firm bearing throughout its length, true to line and grade given. Make certain that all supports are uniform (without point loading from irregular backfill) and joints and bells have been properly accommodated. Remove pipe that settles before final acceptance or which is not in alignment and re-lay without extra compensation.

When custom RCP pipe with noncircular reinforcement is used, install the pipe in such a position that the manufacturer's marks designating the top of the pipe is not more than 5 degrees from the vertical plane through the longitudinal axis of the pipe or manufacturers guidelines, whichever is most vertical.

Prior to being lowered into the trench, closely examine corrugated metal pipe sections and fit so that they will form a true line of pipe when in place. Do not use sections that do not fit together properly.

Place distorted circular metal pipes with the major axis vertical. If rods, struts, or other means are used to maintain pipe distortion, do not remove them before the completion of the embankment unless otherwise permitted by the RCE.

Before laying the pipe or during the pipe laying operations, construct adequate outfall ditches and inlets free of obstructions in order that proper drainage is provided.

When pipes are connected to drainage structures, install or cut pipe flush with inside face of drainage structure. When pipes are connected to end treatments such as slabs or headwalls, install or cut pipe flush with exposed face of end treatment. When pipe culverts are installed connecting to pipe of different material or of connection details, use a standard drainage structure or designed interface as directed by the RCE. Where pipe culverts are constructed in conjunction with existing structures, make connections to the satisfaction of the RCE.

714.3.6 Joints

Use a combination of pipe and joint material that meets performance requirements of the laboratory 10 psi pressure test. Provide a combination of pipe and joint material meeting a 13 psi pressure test when specified in the plans or when working in the following coastal counties: Berkeley, Beaufort, Charleston, Colleton, Dorchester, Georgetown, Horry, and Jasper.

714.3.6.1 Reinforced Concrete Pipe (RCP) Joints

For RCP, use a joint material supplied with the pipe and made by a manufacturer listed on SCDOT Qualified Product List 69 that corresponds with the type of joint specified in the plans or provided by the pipe manufacturer. Order pipe and appropriate joint material from pipe manufacturer. Install pipe using joints specified in the plans, contract documents, or pay items.

1. AASHTO M 198 Preformed Flexible Joint Sealant

Use a combination of pipe and joint material that meets performance requirements of AASHTO M 198 (ASTM C 990), including the laboratory 10 psi pressure test. Carefully clean all dirt and foreign substances from the jointing surface of the groove end already laid and tongue end of the pipe being added. Allow jointing surfaces to dry completely before application of the joint material. If required by site conditions or manufacturer recommendations, apply an adhesive primer specified by the flexible sealant manufacturer. During cold weather, warm flexible sealant as directed by the manufacturer before application. Apply material in a single strip as specified by pipe manufacturer (typically from within 1 inch of the tongue end to approximately the middle of the tongue on pipe) for up to 48 inch diameter pipe. For pipe larger than 48 inch diameter, place half of the sealant on the top side of the tongue end and the other half on the bottom side of the groove end of the two pipes being homed. Provide between 1" and 3" overlap of the installed joint sealant by laying the edges of the sealant side by side. Do not twist ends of sealant around each other or stack one end on top of the other. Leave protective paper on outside of flexible sealant to protect during pipe alignment. Apply enough flexible sealant to fill the annular joint space. Align the tongue and groove or bell and spigot ends of the pipes before homing

(closing) the joint. Remove any remaining protective paper from outside surface of flexible sealant. Make sure that the flexible sealant is in contact with the entry taper around the entire circumference of the pipe. Confirm that the pipe is aligned properly. Seat the pipe completely before installing next pipe section.

2. AASHTO M 315 Rubber Gasket Joint Material

When specified in the plans, contract documents, pay items or coastal counties, use a combination of pipe and joint material that meets performance requirements of AASHTO M 315 (ASTM C 443), including the laboratory 13 psi pressure test. Carefully clean all dirt and foreign substances from the jointing surface of the groove end already laid and tongue end of the pipe being added. Follow pipe manufacturer's recommendations for lubrication of joint and/or gasket. Fit the gasket on the tongue recess. Equalize the rubber gasket, when required by manufacturer, by running a smooth round object (such as a screwdriver shaft) between the gasket and the pipe. Complete this equalization procedure at least 3 times around the entire length of each gasket (see detail on standard drawing for reinforced concrete pipe). Ensure proper seating of the gasket before proceeding with installation. Align the tongue and groove ends of the pipes before homing (closing) the joint. Make sure that the gasket is in contact with the entry taper around the entire circumference and that the pipe is aligned properly. Seat pipe completely before installing next pipe section.

714.3.6.2 Corrugated Aluminum and Spiral Ribbed Aluminum Pipe (CAAP&SRAP) Joints

For CAAP & SRAP, order pipe and appropriate joint material from pipe manufacturer.

For CAAP and SRAP, rerolled pipe ends with annular corrugations are allowed. Use fully corrugated aluminum coupling bands with either welded angle brackets or bar bolt and strap connections that conform to the requirements of AASHTO M 196 article 9 unless specified otherwise in the plans. Provide coupling bands and connections that match the configuration used during the joint testing and indicated on Qualified Product List 68. Use minimum 1/2 inch diameter galvanized ASTM A 307 bolts and nuts to connect all size coupling bands and follow minimum quantity requirements shown on SCDOT Standard Drawings. Use closed cell expanded rubber strip or sleeve gaskets conforming to ASTM D 1056.

Manufacturer must certify that the pipe, coupling band, and gasket combination meets the laboratory 10 psi pressure test. Each manufacturer may also elect to test their pipe joints to 13 psi for use in locations where 13 psi joints are specified or required, such as coastal counties. Both 10 psi and 13 psi tests are to be conducted in straight alignment with the pipe deflected 5%. Make certain that the strip or sleeve gaskets are at least as wide as the coupling band (12 inches minimum) and approximately 3/8 inch thick minimum. Rubber O-ring gaskets are not allowed since they are not visible from the inside of the pipe after installation.

Carefully clean pipe ends to remove all debris that could hinder proper sealing of the pipes and gasket. Liberally lubricate the gasket and outside pipe surfaces in contact with the gasket using a lubricant specified by the gasket manufacturer. Lubricate the inside surfaces of the coupling band, check for proper position, and adjust if required to match corrugations. If necessary, fold gasket over itself to allow placement of joining pipe, then unfold over newly placed pipe. Snap the gasket several times to allow for final seating. Confirm that the separation between pipe ends is less than one corrugation of the coupling band and that no foreign matter is present between the gasket and the pipe/coupling band surfaces. Pull coupling band ends together using a long bolt if needed to start the band lap. Make sure that coupling band corrugations align with the pipe's corrugations. When helical corrugations are used, if necessary, rotate coupling band to align with previously installed pipe or rotate newly installed pipe to align with coupling band. Insert final bolts and tighten to snug tight conditions (approximately 25-30 ft-lb of torque) or manufacturer recommendations. Tap the band with a rubber mallet during tightening to ensure uniform seating of the gasket. Ensure that band corrugations are fully seated into corrugations of both pipes before proceeding to next pipe connection.

714.3.6.3 High Density Polyethylene Pipe (HDPE) Joints

For HDPE, order pipe and appropriate joint material from pipe manufacturer.

1. Standard Joint

Use a bell and spigot type connection with an elastomeric rubber seal meeting ASTM F477 and meeting the requirements specified in the plan and by the pipe manufacturer. Pipes may be shipped with gaskets installed on pipe. Certify that the pipe and gasket system meet or exceed the laboratory 10 psi internal pressure test of ASTM D 3212. Each manufacturer may also elect to test their pipe joints to 13 psi for use in locations where 13 psi joints are specified or required like coastal counties. Both 10 psi and 13 psi tests are to be conducted in straight alignment with the pipe deflected 5%. Provide, to the RCE, manufacturer's certification that gaskets are manufactured in accordance with the requirements of ASTM F 477 and do not have any visible cracking when tested according to ASTM D 1149. Store bell and spigot type pipe in alternating rows to prevent bell flattening. Cover gaskets with a protective wrap during storage to prevent damage to the gasket. Inspect pipe to ensure that pipe joint components are clean and free from damage or defect before installation. Mark or verify that the pipe ends are marked to indicate the insertion stop position. If pipe bell is manufactured separately from pipe, ensure it is securely installed before proceeding with installation. Lubricate inside and leading edge of bell with a lubricant, specified by the pipe manufacturer, which does not cause damage or deterioration to the gasket material. Push the pipe spigot into the bell until the end of the bell meets the homing mark while the pipe maintains line and grade. Follow manufacturer recommendations on construction devices to use to prevent damage to the pipe. Do not use excessive force that may result in over-assembled joints or dislodged gaskets. If pipe is not fully installed to the marked insertion point, disassemble joints, clean and reinstall joint as

described above. Ensure that pipe installed has proper line and grade before installing next pipe section.

2. Field Fabricated Joint

Use field fabricated joints only outside of roadbed and driveways. Splice two field cut pieces of HDPE pipe, using a split coupler band with an elastomeric rubber seal meeting ASTM F 477.

Wrap entire joint with a geotextile for drainage filtration to prevent the migration of soils into the pipe or to meet a silt tight designation per AASHTO M 294. Geotextile fabric shall extend 12 inches either side of the joint and overlap at least 18 inches.

No additional payment will be made for the use and installation of split coupler bands.

714.3.6.4 Dissimilar Pipe Joint/Coupler

Follow the guidelines in the SCDOT Supplemental Specification for Dissimilar Pipe Couplers when joining two different types of pipe.

714.3.7 Pipe Structural Backfill

Advise the RCE of the time Pipe Structural Backfill operations are expected to begin. If not properly advised, the RCE may require the excavation and reinstallation of the structural backfill material.

For structural backfill, use the same material as the pipe bedding (Subsection 714.3.4) unless controlled low strength material is used as described below. When a geotextile wrap is required, cover the entire bedding and structural backfill envelope as described in subsection 714.3.3.

Controlled low strength material (CLSM) and controlled density fill are flowable fills that may be used for structural backfill in the haunch area and above. Select a flowable fill mix design that can be excavated. Do not use CLSM when placing perforated pipe. When using CLSM ensure that the pipe is not displaced and does not float while using methods that do not damage the pipe.

Ensure that trenches are free of water when placing and compacting structural backfill.

Thoroughly compact the structural backfill material in layers not exceeding 6 inches of compacted material. The first lift must be sufficiently below the spring line such that the material can be worked into the haunch zone of the pipe. Perform compaction by the use of mechanical tampers with the assistance of hand tamps when necessary. Thoroughly compact the structural backfill under the haunches of the pipe and ensure that the backfill soil is in continuous uniform contact with the side and joints of the pipe. Exercise

sufficient care to prevent damaging or misaligning the pipe with the compaction equipment.

Install and compact structural backfill on both sides of pipe before adding the next lift of backfill material. Evenly distribute structural backfill on both sides of the pipe for its full length. Ensure that Pipe Structural Backfill process does not cause joint separation or displacement of the installed pipe.

Ensure that the compaction of structural backfill is a minimum of 95.0% of the maximum dry density when measured in accordance with SC-T-29 (use AASHTO T-99 for determination of maximum dry density for A-1 Screenings or Aggregate Base Course materials).

The RCE will establish a compaction pattern for the contractor to follow during pipe backfill operations. The pattern will be in effect for production lots of 500 feet of pipe, until the source or classification of backfill material changes, site weather conditions change such as rain, or the compactive efforts being applied change. The compaction pattern will be established by allowing the contractor to apply a 6 inch lift in a 50 foot section until the material has been compacted to 95.0% of the maximum dry density for the structural backfill when measured in accordance with SC-T-29 (use AASHTO T-99 for determination of maximum dry density for A-1 Screenings or Aggregate Base Course materials). The number of passes and the watering efforts applied to the material will be recorded and this pattern will be considered the compaction pattern.

For pipe smaller than 36 inches in diameter, the RCE will run a minimum of one verification compaction test at the springline of the pipe for each run of pipe between drainage structures or pipe ends. For pipe 36 inches in diameter and larger, a minimum of one test for each 18 inches of the pipe embedment zone height (including one at the pipe springline) for each run of pipe between drainage structures or pipe ends will be performed. This is a minimum frequency and should be increased at the RCE's discretion.

For all tests, insert the nuclear gauge probe to its full depth or within 2 to 3 inches of the bottom of the layer being tested, whichever is less. In the event of a non-conforming compaction measurement, the RCE will check the compaction of the previous lift by removing enough material to perform the verification test. If the second test passes, the contractor will continue the compaction efforts of the current layer until the verification test passes. In the event of 2 failing compaction tests within a single run of pipe (between drainage structures or pipe ends), remove the pipe structural backfill, clean trench and set a new compaction pattern at the RCE's discretion.

For driveway pipes and runs of pipe up to 16 feet in length, the frequency of compaction testing will be at the discretion of the RCE.

Vibrate angular stone backfills in place using methods that properly lock the angular stone in place around the pipe and do not damage the pipe. Typically 2 passes with a vibratory

sufficient care to prevent damaging or misaligning the pipe with the compaction equipment.

Install and compact structural backfill on both sides of pipe before adding the next lift of backfill material. Evenly distribute structural backfill on both sides of the pipe for its full length. Ensure that Pipe Structural Backfill process does not cause joint separation or displacement of the installed pipe.

Ensure that the compaction of structural backfill is a minimum of 95.0% of the maximum dry density when measured in accordance with SC-T-29 (use AASHTO T-99 for determination of maximum dry density for A-1 Screenings or Aggregate Base Course materials).

The RCE will establish a compaction pattern for the contractor to follow during pipe backfill operations. The pattern will be in effect for production lots of 500 feet of pipe, until the source or classification of backfill material changes, site weather conditions change such as rain, or the compactive efforts being applied change. The compaction pattern will be established by allowing the contractor to apply a 6 inch lift in a 50 foot section until the material has been compacted to 95.0% of the maximum dry density for the structural backfill when measured in accordance with SC-T-29 (use AASHTO T-99 for determination of maximum dry density for A-1 Screenings or Aggregate Base Course materials). The number of passes and the watering efforts applied to the material will be recorded and this pattern will be considered the compaction pattern.

For pipe smaller than 36 inches in diameter, the RCE will run a minimum of one verification compaction test at the springline of the pipe for each run of pipe between drainage structures or pipe ends. For pipe 36 inches in diameter and larger, a minimum of one test for each 18 inches of the pipe embedment zone height (including one at the pipe springline) for each run of pipe between drainage structures or pipe ends will be performed. This is a minimum frequency and should be increased at the RCE's discretion.

For all tests, insert the nuclear gauge probe to its full depth or within 2 to 3 inches of the bottom of the layer being tested, whichever is less. In the event of a non-conforming compaction measurement, the RCE will check the compaction of the previous lift by removing enough material to perform the verification test. If the second test passes, the contractor will continue the compaction efforts of the current layer until the verification test passes. In the event of 2 failing compaction tests within a single run of pipe (between drainage structures or pipe ends), remove the pipe structural backfill, clean trench and set a new compaction pattern at the RCE's discretion.

For driveway pipes and runs of pipe up to 16 feet in length, the frequency of compaction testing will be at the discretion of the RCE.

Vibrate angular stone backfills in place using methods that properly lock the angular stone in place around the pipe and do not damage the pipe. Typically 2 passes with a vibratory

plate tamp for each 12 inch lift will provide adequate compaction unless additional passes are required to consolidate the stone as directed by the RCE.

Complete structural backfill installation up to the elevation shown on the corresponding SCDOT Standard Drawings.

714.3.8 Cover Height

Ensure that the minimum and maximum cover is in accordance with the height of cover tables in the SCDOT Standard Drawings.

714.3.9 Construction Loads

Fill height requirements may dictate that more fill is required during construction than for final design. In all cases, install backfill to the minimum construction fill height specified in the SCDOT Standard Drawings before driving heavy equipment over pipe. Maintain this minimum cover until heavy equipment usage is discontinued so that damage does not occur to the pipe. Install and remove backfill required due to the construction loading on the pipe at no expense to SCDOT. Repair all damage or displacement at no expense to SCDOT.

714.3.10 Structures and End Treatments

Unless shown otherwise in the plans, use a minimum end treatment of a straight pipe end with Class B or C riprap and geotextile for erosion control.

When specified in the plans, use end treatments such as pipe beveled end, concrete slab, straight headwall for pipe, pipe end structure, or pipe wingwall and apron system in accordance with SCDOT Standard Drawings or plan structure details.

714.3.11 Installation Inspection

1. Construction Inspection:

Visually inspect 100% of pipe for fractures, cracks, spalling, chips, and breaks during all phases of the installation process. Inspect joints, including tongues and grooves. Chipped pipe ends that prevent the full bond between joint sealant/gasket and both pipes may only be installed in drainage structures at the ends of pipe runs where they will be grouted over. Inspect installed joints for missing, damaged, or improperly installed joint sealant or gasket. Verify line and grade in accordance with the frequencies detailed in the Construction Manual. All inspections must be performed by a SCDOT certified Earthwork, Drainage and Base Technician.

When improper installation or damage is noted during the construction installation inspection of the pipe, repairs must be made to the satisfaction of the RCE. Additional

inspections may be performed until confidence is restored that the installation has been performed in accordance with these specifications.

2. Post Construction Inspection:

The RCE will collect survey data for 100% of installed pipe. Survey data will be collected electronically to establish a pipe inventory. Survey data will include county, route information, mile point, latitude and longitude for inlet end of pipe. Survey data collected will also include at a minimum pipe diameter, pipe material, fill height, and shape and description of drainage structures and end treatments. This inventory data will be submitted to the Director of Maintenance office upon acceptance of the project.

Post Installation Inspection for acceptance purposes shall be performed by the Department or its Consultant at the discretion of the RCE. The timing, frequency, location, and the method of post construction inspection will be determined by the RCE. 100% of pipe installed on the project may be inspected. The Department or its Consultant will provide any necessary Traffic Control to support the inspection operation. The Contractor shall cooperate fully with the post installation inspection and in no way interfere with the post installation inspection.

Inspections of completed pipe installations will be performed after the embankment is in place and all non-asphalt bases and/or subgrades have been completed for at least 30 days. In cases where the Contractor's accepted schedule indicates that paving operations will be conducted in less than 30 days, an early inspection may be performed for acceptance. The Contractor will be provided with a copy of the post installation inspection report if deficiencies are discovered.

When improper installation or damage is noted in any prior inspection (visual, compaction, installation, etc.) of the pipe, repair the pipe installation to the satisfaction of the RCE. The RCE may perform additional inspections until confidence is restored that the remaining pipe has been installed in accordance with these specifications and is performing satisfactorily.

A. For concrete pipe, when signs of distress, such as differential movement, efflorescence, spalling, rust stains or cracks wider than 0.01 inch are present in the pipe, the Contractor shall prepare a remedial action plan for submittal to the RCE. This remedial action plan must address: structural integrity, environmental conditions, design service life of the pipe, and recommended remediation. The RCE must approve both the remediation report and proposed repair procedure. At a minimum, seal cracks having widths equal to or greater than 0.01 inch in accordance with manufacturer's instructions. Replace pipes having cracks greater than 0.1 inch that are determined by the RCE to be beyond satisfactory structural repair. Repair or replace pipes having displacement across the crack. Repair or replace pipes exhibiting spalls or delamination. The RCE may perform additional inspections until confidence is restored that the remaining pipe has been installed in accordance with these specifications and is performing satisfactorily.

B. For aluminum pipe, when pipe distress such as cracking, wall damage (dents, bulges, creases, cracks and tears) and deflection or poorly shaped cross-section are present in the pipe, or when installed pipe deflections exceed 5.0% of the inside diameter, the Contractor shall prepare a remedial action plan for submittal to the RCE. This remedial action plan must address: structural integrity, environmental conditions, design service life of the pipe, and recommended remediation. The RCE must approve both the remediation report and proposed repair procedure. Replace the pipe at locations where the measured deflection exceeds 7.5% of the nominal inside diameter of the pipe. Replace, repair or remediate locations as recommended in the inspection report or by the RCE. The RCE may perform additional inspections until confidence is restored that the remaining pipe has been installed in accordance with these specifications and is performing satisfactorily.

C. For HDPE pipe, when installed pipe deflections exceed 5.0% of the inside diameter, the Contractor shall prepare a remedial action plan for submittal to the RCE. This remedial action plan must address: structural integrity, environmental conditions, design service life of the pipe, and recommended remediation. The RCE must approve both the remediation report and proposed repair procedure. Replace the pipe at locations where the measured deflection exceeds 7.5% of the nominal inside diameter of the pipe. Repair or remediate locations as recommended in the inspection report or by the RCE. Replace locations where directed by the RCE. The RCE may perform additional inspections until confidence is restored that the remaining pipe has been installed in accordance with these specifications and is performing satisfactorily.

714.3.12 Installing Pipe Culvert under Existing Pavement

On projects where the original approach pavement structure is being retained, lay the pipe culvert as herein specified. Repair the portion of the pavement structure removed due to the excavation of the trench using the same type of materials used in the original construction. The RCE may accept the use of other materials as deemed appropriate. Perform the work to the satisfaction of the RCE. Include the cost of the materials and the labor involved in the unit bid price for the pipe culvert.

714.3.13 Placing Pipe under Railroads and Other Transportation Facilities

When the plans include the installation of pipe under railroads or other transportation facilities not under the jurisdiction of the Department, unless otherwise provided, install the pipe using such methods, materials, and procedures required by the owner. There is no extra compensation for this change in methods, materials, and procedures.

714.3.14 Cleaning Out Pipe

Thoroughly clean out the entire length of newly installed pipe culverts. No additional payment will be made for the cleaning out of newly installed pipe culverts. Pipes must be clean and accessible for inspection and acceptance.

714.3.15 Trench Backfill for Expedited Construction

At the RCE's discretion or where otherwise noted, controlled low strength material (CLSM) may be used as structural backfill and to complete trench backfill for pipe installations in order to expedite the re-opening of the roadway to traffic. The decision should be based on traffic volume, safety, and public inconvenience.

CLSM, also known as flowable fill, can be placed to a height not to exceed the subgrade elevation. The remaining pavement structure must be installed according to the pavement design. CLSM shall be installed in accordance with manufacturer's recommendations to prevent pipe displacement and uplift during CLSM placement.

When CLSM is specified in the plans or special provisions for completion of the trench backfill, CLSM in the pipe embedment zone will be included in the cost of the pipe, and CLSM above the pipe embedment zone will be paid for at the contract unit price for Controlled Low Strength Material.

When CLSM is not specified in the plans or special provisions, but is specified by the RCE during construction, all CLSM used in the trench will be paid for at the contract unit price for Controlled Low Strength Material.

714.3.16 Cleaning Out of Existing Pipe (All Existing Pipe)

Maintain retained pipe culverts that are clean in the same condition as they existed before beginning work. When specified in the plans, thoroughly clean out the entire length of existing pipe culverts. Remove all debris and sediment that affects the hydraulic performance of the entire pipe, including all debris within two pipe diameters of each end of the pipe.

714.3.17 Removing of Existing Pipe (All Existing Pipe)

Remove existing pipe in accordance with the provisions of SCDOT Standard Specifications Section 202. Backfill and compact fill material to the same grade and slope of the area before the pipe was removed.

714.3.18 Abandoning Pipe (All Existing Pipe)

At locations on the plans where existing pipe culvert is to be abandoned, plug the existing pipe using brick and mortar or use the Taylor Made Plastics, Inc. "Pipe Plug" or equal. Fill the entire abandoned pipe with CLSM that meets the strength requirements of the embankment and can be excavated. Place CLSM using a method that produces the smallest air pockets or voids within the abandoned pipe, such as pumping from a single location until the both ends of the pipe are full.

714.4 Measurement

The quantity for the items pipe culvert, of the size, kind, class, thickness or type specified, or Smooth or Corrugated Wall Pipe Culvert of the size specified is measured in linear feet of the net length of pipe culvert complete in place and accepted.

Pipe quantities will be the linear measurement from end to end of the pipe through tees, wyes, elbows, bends, reducers, increasers, elbows, and beveled ends, excluding all drainage structures. The length is obtained by adding the centerline length of each run of pipe between Drainage Structures and to the completed end of pipe at End Treatments. Do not include the length of end treatment beyond the pipe in the measurement of the pipe.

If the plans require bevels at the pipe ends, include the length of the beveled end section in the measured length of pipe.

The quantity for the items beveling of smooth wall pipe culvert, beveling of corrugated wall pipe culvert, pipe culvert tees, wyes, elbows, bends, reducers, and increasers of the size and kind specified is measured by each item.

Measure the quantity for riprap placed around pipe end or end treatment in tons based on the quantity required to complete installation in accordance with the SCDOT Standard Drawing for the pipe end treatment used.

Measure the quantity for geotextile for erosion control under riprap and geotextile for separation in square yards based on the quantity required to complete installation in accordance with the SCDOT Standard Drawing for the pipe end treatment used.

The quantity for the items pipe culvert flared end section, straight headwalls, concrete slabs, pipe end structures, wingwall and apron system, and drainage structures is measured by each unit, complete in place and accepted.

The quantity of pipe additional foundation work is measured in linear feet along the centerline of the pipe as shown in the SCDOT Standard Drawings. Dispose of any unstable material in the manner outlined in SCDOT Standard Specifications Section 203.

For installations in cut sections, embankment material overfill above the pipe embedment zone will be measured as the volume between the standard trench walls from the top of the pipe embedment zone to the top of the subgrade as shown on the SCDOT Standard Drawings.

No measurement will be made for the removal of existing pipe culverts that will be replaced by new culverts. No measurement will be made for pipe inspection.

The quantity for the cleaning of existing pipe culverts is measured in linear feet for the entire length of the pipe to be cleaned.

The quantity for the excavation necessary for the removal of existing pipe culverts that are not to be replaced by new culverts is measured in cubic yards as set forth in SCDOT Standard Specifications Section 202.

Measurement for pipe abandoning will be paid for as CLSM in accordance with SCDOT Standard Specifications Section 210.

714.5 Payment

Pipe culvert and end treatments, measured as provided in Subsection 714.4, are paid for at the contract unit price for the respective items, which price and payment is compensation for furnishing all material, labor, equipment, tools including hauling and placing all pipe sections and materials, excavation of the entire standard trench, bedding, and pipe structural backfill as described in the measurement section (both structural and embankment backfill in this region), removal of existing pipe to be replaced, constructing pipe joints, removal of old end treatments, cleaning out pipe, disposal of surplus materials, all visual inspection, and all incidentals necessary to complete the work.

The Contractor may choose to dispose of the material excavated from the pipe trench on the project site if the RCE determines that the material is suitable, or the Contractor may dispose of the material off the site of the project in accordance with the disposal requirements for surplus material as set forth in SCDOT Standard Specifications Section 203. The Contractor is not entitled to any additional payment for the disposal of the material excavated from the pipe trench regardless of which method of disposal is utilized.

When the in-situ soil material is used as structural backfill, no additional payment will be made for the structural backfill (shown on SCDOT Standard Drawings within the pipe embedment zone) and payment for this material is included in the Unclassified Excavation pay item. The in-situ soil material must meet the requirements of this specification before it can be used as structural backfill.

When select structural backfill is required, no additional measurement will be made for the structural backfill material (shown on SCDOT Standard Drawings within the pipe embedment zone) and payment for this material will be include in the cost of the pipe.

Beveling of the pipe ends will be included in the unit cost of beveling of pipe culvert as specified in the plans.

Payment for riprap geotextile for erosion control under riprap, and geotextile for separation as measured in Subsection 714.4 includes all direct and indirect costs and expenses necessary to complete the work.

The quantities for the items pipe culvert tees, wyes, elbows, bends, reducers, and increasers measured as provided in Subsection 714.4, are paid for as each.

The quantity of pipe additional foundation work, measured as provided for in Subsection 714.4, is paid for at the contract unit price, which price and payment is compensation for furnishing all material (foundation, extra bedding, extra structural backfill, extra geotextile, etc.), labor (additional trench excavation, compaction, etc.), equipment, tools, hauling, and disposal (of poor material) to complete construction of the pipe foundation, and wider trench as specified in the SCDOT Standard Drawings, the plans, or by the RCE.

Embankment material overfill in cut sections as described in the measurement section will be paid for as borrow.

All work associated with the excavation, removal and disposal of existing pipe culverts that will be replaced by a new structure will be paid for in the pay item of the new structure.

The excavation for the removal of existing pipe is paid for at the contract unit price for Unclassified Excavation as specified in SCDOT Standard Specifications Section 202, which price and payment is full compensation for all work and costs of removal, transporting, and storing or disposing of existing pipe that is not to be replaced by a new structure and re-installation and compaction of fill material to restore embankment to original grade.

Cleaning of existing pipe is paid for at the contract unit price for Cleaning Existing Pipe, which price and payment is full compensation for all work and costs of cleaning, debris removal, transporting, disposing of all obstructions within the pipe that is to be cleaned.

Payment for pipe abandoning will be in accordance with SCDOT Standard Specifications Section 210, which price and payment is full compensation for all work and costs of materials, labor, and construction costs to abandon the pipe. No additional pay items will be made for this work regardless of the method chosen.

Payment for each item includes all direct and indirect costs and expenses necessary to complete the work.

Pay items under this Supplemental Technical Specification include the following:

Item No.	Pay Item	Unit
714XXXX	*(size) Smooth Wall Pipe Culvert*	LF
714XXXX	*(size) Corrugated Wall Pipe Culvert*	LF
714XXXX	*(size)* RC Pipe Culvert (RCP) - *(class)*	LF
714XXXX	*(size)* RC Pipe Culvert (RCP) - *(class)* AASHTO M315	LF
714XXXX	*(size)* Corr. Alum. Alloy Pipe Culvert (CAAP) - *(gage)*	LF
714XXXX	*(size)* Spiral Rib. Alum. Pipe Culvert (SRAP) - *(gage)*	LF

714XXXX	*(size)* Corr. Polyethylene Pipe Culvert (HDPE) – Type S	LF
714XXXX	*(size) (kind)* Pipe Culvert Flared End Section *(class or thickness)*	EA
714XXXX	*(size) (kind)* Pipe Culvert Tee	EA
714XXXX	*(size) (kind)* Pipe Culvert Wye	EA
714XXXX	*(size) (kind)* Pipe Culvert *(degree)* Bend	EA
714XXXX	*(size) (kind)* Increaser *(size)* to *(size)* Diameter	EA
7149999	Cleaning Existing Pipe	LF
20345XX	Pipe Additional Foundation Work	LF

APPROVED:
Division Administrator
THADDEUS W KITOWICZ Digitally signed by THADDEUS W KITOWICZ Date: 2024.11.29 10:38:49 -05'00'
By: _____
FEDERAL HIGHWAY ADMINISTRATION

Supplemental Technical Specification for

CEMENT STABILIZED EARTH BASE

SCDOT Designation: SC-M-307 (01/25)

1. SCOPE

1.1. This supplemental technical specification contains specifications for the materials, equipment, construction, measurement, and payment for increasing the strength of the subgrade by the addition and mixing of additional rock, water, and Portland cement for the construction of a Cement Stabilized Earth Base (CSEB) on a properly prepared foundation course (subgrade or subbase) for pavement structure in conformance with the lines, grades, thickness, and typical cross section shown in the Plans or otherwise established by the RCE.

2. SUBMITTALS

2.1. At least 30 days prior to the beginning of mixing CSEB in the roadway, submit the results of SC-T-26 (clearly indicating the ratio of subgrade material and aggregate by weight), and Contractor's Quality Control Plan as outlined below, to the Reclamation Engineer (RE) at the Office of Materials and Research for review. Additionally, submit copies of the Contractor's Quality Control Plan outlined in this Supplemental Technical Specification to the RE and RCE at the same time for review. The RE will specify the rate of cement in pounds per square yard.

2.2. *Mix Design:* Ensure that the testing of the soil-aggregate mixture is conducted according to SC-T-26 by a laboratory AASHTO accredited in the test procedures referenced in this supplemental technical specification. Include the gradation for the additional rock material (AASHTO T 27), the bulk specific gravity (AASHTO T 85) of the additional rock material (+ #4 material), absorption (AASHTO T 85) of the additional rock material (+ #4 material), cementitious materials, compressive strengths and moisture-density curve. Make no production until the RE has provided the cement spread rate. Proportions for mix design can be calculated by determining the density of the additional rock material by AASHTO T 19 (shoveling procedure) and the subgrade by AASHTO T 99 and then calculating the weights for a 50:50 thickness ratio. Ensure that the roadway sampling and testing is representative of the entire area and depth to be treated. Several samples and/or designs may be necessary.

2.2.1. Mix designs not meeting a target strength of 450 psi at 7 days in accordance with SC-T-26 will need to undergo additional durability testing for determination of cement content. The State Pavement Design Engineer will provide guidance for acceptable durability testing procedures.

2.3. *QC Plan:* The quality control plan should include but not be limited to addressing the following items.

2.3.1. Include contingency plans for mixing and compaction when specification criteria is not met and consider the specific roadway conditions at the site.

2.3.2. Plan for identifying the in-situ moisture conditions, adjusting the moisture content to meet specifications, checking moisture during mixing operations, and maintaining moisture content through the time of curing. Include a description of the methods and minimum contractor testing frequency for moisture. Consider specific environmental conditions for the project site and schedule.

3. MATERIALS

3.1. *Portland Cement:* Use Portland cement that conforms to the requirements of Subsection 301.2.1 of the Standard Specifications.

3.2. *Water:* Use water conforming to the requirements of Subsection 701.2.11 of the Standard Specifications.

3.3. *Asphalt Material:* Use RS-2, CRS-2, EA-P Special, or Emulsified Trackless Tack for the asphalt curing coat that conforms to the requirements of Subsection 401.2.1.3 of the Standard Specifications.

3.4. *Granular 'Blotter':* Use FA-10 or FA-10M material meeting the requirements of the Standard specifications.

3.5. *Additional Rock for CSEB:* Use aggregate meeting the requirements of one of the following:

3.5.1. *Crushed Reclaimed Asphalt Pavement (RAP) Material:* Additional RAP material may be added to meet the additional rock requirement and, if added, must meet the requirements of Subsection 401.2.2.6 of the Standard Specifications and **Table 1** herein.

TABLE 1 – ADDITIONAL CRUSHED RAP

Tests	Method	Limit
Deleterious Materials: Clay Lumps and Friable Particles in Aggregate	AASHTO T 112	0.2 maximum
Maximum Sieve Size, 2.0 inches (50mm)	AASHTO T 27	100 % Passing

3.5.2. Ensure that any additional aggregate comes from a source listed on Qualified Product Lists Nos 1 and/or 2 and meets the requirements of **TABLE 2** herein.

TABLE 2 – ADDITIONAL AGGREGATE

Tests	Method	Limit
Los Angeles Abrasion Value	AASHTO T 96	55% maximum loss
Sand Equivalent	AASHTO T 176	45% minimum
Maximum Size, 100% passing, Sieve Size	AASHTO T 27	2.0 inches
Water Absorption	AASHTO T 85	3.0% maximum

3.6. *Soil:* Utilize the soil for the cement stabilized earth base course from natural material in the roadbed, hauled-in material, or a combination of these materials proportioned as directed. Ensure that hauled-in material meets the requirements for borrow material in the top 18 inches of the embankment in Subsection 203.2.1.8 of the Standard Specifications. Unless otherwise specified, furnishing of soil is not measured for payment and there is no payment for overhaul. Provide soil for CSEB (natural, hauled-in, or combination) that is free of organics, roots, sod, weeds or other deleterious materials.

4. EQUIPMENT

4.1 *General:* Ensure that the equipment necessary for the proper construction of the work is on

site and in acceptable working condition. Provide sufficient equipment to enable prosecution of the work in accordance with the project schedule and completion of the work in the specified time.

4.2 *Mixer / Reclaimer:* Construct the base with self-propelled rotary mixer(s)/reclaimer(s) capable of mixing in place to the required depth. Ensure that the mixer(s)/reclaimer(s) have a mechanism for controlling the reclaimed material gradation via a breaker bar and/or a door opening on the mixer(s)/reclaimer(s). Ensure that mixer(s)/reclaimer(s) are fitted with an integrated liquid injection system capable of introducing water into the cutting drum during the mixing process at a consistent rate that is automatically varied by the speed of the reclaimer.

4.3 *Water Trucks:* Provide a sufficient number of water trucks on the jobsite at all times of operation to maintain the moisture requirements listed in Subsection 5.9. Ensure that the water truck used in conjunction with the reclaimer uses a direct injection system, and additional trucks maintain surface moisture during grading and compaction work and until the curing treatment is applied in accordance with Subsection 5.14. Accomplish this procedure using a controlled and uniform application of water without eroding or otherwise damaging the CSEB surface.

4.4 *Cement Spreader:* Provide a spreader/distributor capable of achieving consistent, accurate, and uniform distribution across the entire length and width of the roadway while minimizing dust. Ensure that the spreader has adjustable openings or gate headers and is not solely dependent on vehicle speed to obtain the required spread rate.

4.5 *Compacters:* Provide a combination of sheepsfoot rollers, smooth wheel tandem rollers, and pneumatic-tired rollers that have the ability to adequately compact reclaimed material throughout the entire specified CSEB thickness. Ensure the necessary weight, size, and number of rollers to achieve the compaction and construction limitation requirements of this special provision.

4.6 *Inspection of Equipment:* Before start-up, carefully inspect the equipment. During construction, should any of the equipment fail to operate properly, cease work until the deficiencies are corrected.

5. CONSTRUCTION REQUIREMENTS

5.1. *Weather Limitations:* Apply cement only when the temperature is above 40°F in the shade and rising, and no freezing temperatures are predicted for at least 48 hours. Do not perform work on frozen or excessively wet subgrade.

5.2. *Preparation of Subgrade:* Construct the subgrade for the CSEB in accordance with the requirements specified in Section 208 of the Standard Specifications. Roll and compact the subgrade for at least 500 feet ahead of the placing of the additional rock material to form a trench or channeled section as prescribed on the Plans. When included in the work, construct shoulders in accordance with the requirements of Section 209 of the Standard Specifications and accurately trim to the alignment and grade of the additional rock material to form a trench or channeled section as prescribed on the Plans. Ensure that the top 6 inches of the subgrade material or any portion of the subgrade material that will be incorporated into the CSEB meets the material requirement of Subsection 3.6.

5.3. *Placement of Additional Rock Material:* Spread additional rock material at the established rate from the mix design uniformly over the subgrade material using a mechanical spreader, paver, or by windrowing the material with dump trucks and spreading it to a uniform thickness with a motor grader. Blend the additional rock material with the subgrade material by means of a full depth mixing pass to form a homogeneous mixture prior to the application of cement.

5.4. *Test Strips:* Use the first load of cement on the roadway as a test strip to determine if the process is capable of producing a mixture according to specifications.

5.4.1. Ensure that particular attention is paid to the moisture and compaction requirements, mixing and processing requirements, and cement tolerances set in this supplemental technical specification.

5.4.2. The first load applied with the contingency plans is considered a test strip to evaluate the corrective action plan. Cease production after this initial load of cement if the requirements of this specification are still not being met and submit a revised corrective action plan to the RCE for acceptance prior to continuing work.

5.4.3. If the requirements of this specification are not being met in a section (a section is defined as one load of cement) not defined as a test strip then one additional load of cement will be allowed to provide the contractor an opportunity to meet the required specifications. Cease production after this additional load of cement if the requirements of this specification are still not being met and submit a revised corrective action plan to the RCE for acceptance prior to continuing work.

5.5. *Cement Application:* Supply test results in writing to the RE who will then determine the rate of cement. Allow two weeks from the date of submittal of the results required in subsection 2.2 of this supplemental technical specification for the selection of the appropriate cement rate.

5.5.1. Spread Portland cement uniformly on the blended CSEB material at the established rate, taking care to minimize fugitive dust and minimize overlapping of the passes (maximum 6 inches). Spread no more than 75 pounds per square yard in a single pass. Perform a mixing pass after each cement spreading operation. A tolerance of 5% (of the rate) is allowed in the spread rate for individual sections (load of cement) of roadway; however, adjustments should be made in order to keep the actual spread rate as close to that established in the approved mix design. Do not apply powdered cement on excessively windy days and apply so that work can be completed within the construction limitations given in this supplemental technical specification.

5.6. *Mixing & Processing:* After the cement has been applied per Subsection 5.5, mix and uniformly add necessary moisture to the CSEB material to ensure that the moisture content is above the optimum values as set in the laboratory testing reviewed by the RE during mixing and when tested prior to the start of compaction operations.

5.6.1. Mix with at least one pass of the reclaimer after cement application at a minimum. Additional passes are allowed, adhering to time limitations set forth within this specification. Ensure full width mixing by overlapping a minimum of 6 inches with each longitudinal pass, including at the longitudinal joint of each lane, and a minimum of 2 feet with each transverse joint. Additional mixing passes may be required in the contract documents. Lightly compact following each pass of the reclaimer to produce a uniform layer.

5.6.2. Perform grading operations to ensure requirements of Subsection 5.12 will be met after compaction is completed. Immediately begin compaction after the mixing process has been completed so that the requirements of Subsection 5.8 are met.

5.6.3. Remove excess material generated from the mixing process after final grading operations have been completed.

5.6.4. If the requirements of mixing and processing are not being met in a section not defined as a test strip (a section defined as one load of cement) then one additional load of cement will be allowed. Cease production after this additional load of cement if the requirements are still

not being met and submit a corrective action plan to the RCE for acceptance prior to continuing work.

5.7. *Segregation:* If segregation occurs in the base course during mixing or finishing operations, cease placement until the cause is determined and corrected to the satisfaction of the RCE. If the segregation is judged by the RCE to be detrimental to the final product, remove and replace the segregated area at no additional cost to the Department.

5.8. *Compaction:* Before beginning compaction, ensure that the mixture is free from excessive fluff and overly compacted areas to allow for uniform compaction of the layer.

5.8.1. Continue compaction until the entire depth of the base course mixture is uniformly compacted to not less than 95% of the maximum density. SC-T-26 or SC-T-27 will be used at the discretion of the RCE to determine the maximum density of the composite mix. If tests show that the 95.0% requirement is not being met, adjust construction operations to obtain the required 95.0 % density. Complete the compaction work within 1 hour of the final mixing pass.

5.8.2. After the mixture is compacted, reshape the surface of the base course as necessary to conform to the required lines, grades, and cross-section. Continue as required to obtain a uniform surface and to prevent scaling and delamination. Perform compacting and finishing in a manner that produces a smooth, closely knit surface, free from equipment imprints, cracks, ridges, or loose material.

5.9. *Moisture Content:* Maintain the surface moisture content of the mixture at or above the optimum moisture content (OMC) during mixing operations.

5.9.1. Maintain the moisture content of the mixture between +/- 2.0% of OMC during compaction operations including at the time of the density acceptance tests. Measure the moisture content in accordance with SC-T-23 with the OMC determined by SC-T-26, SC-T-27, or other test method used at the discretion of the RCE.

5.9.2. Do not allow the percentage of moisture in the CSEB material mixture at the time of cement application to exceed the quantity that permits uniform and thorough mixture of CSEB material or that creates instability of the roadway.

5.10. *Construction Limitations:* Limit the area over which the cement is spread in order that all operations specified can be continuous and all work completed within daylight hours, unless adequate artificial light is provided. Complete all work within 2 hours after the application of water to the soil aggregate cement mixture, unless the RCE approves a longer period.

5.10.1. If operations are interrupted for a continuous period of greater than 1 hour after the cement has been mixed into the soil aggregate mixture, reconstruct the entire affected section in accordance with this supplemental technical specification. When the uncompacted mixture of soil, aggregate, and cement is wetted so that the moisture content exceeds the amount specified, manipulate and aerate the mixture to reduce the moisture to the specified content if the base course is completed within the limits of this supplemental technical specification.

5.11. *Reconstruction:* If the construction of the base course is proceeding with the approval of the RCE and the uncompacted soil, aggregate, and cement mixture is wetted by rain so that the moisture content exceeds the allowable, the Department will pay for additional cement used in reconstructing the section but will not pay for the reconstruction work. If the reconstruction of any section is necessary because of negligence or omission, unsatisfactory equipment performance, or the section does not comply with the allowable variation in thickness, reconstruct the section without additional compensation.

5.12. *Surface Smoothness:* Ensure that that the finished surface of the base varies neither more than 3/8 inch from a straight edge 10 feet long when applied parallel to the centerline of the road, nor more than ½ inch from the typical cross-section shown on the plans.

5.12.1. Do not disturb the finished surface of the base course after the final finishing and compaction. Random high spots may be removed by surface planing as long as the required thickness of the CSEB is not reduced. Where low areas or depressions in the finished surface of the base occur, level and true the surface using the same material that the course is to receive as the next component of the pavement structure, but in a separate operation. If the material specified as the next component of the pavement structure is considered unsatisfactory by the RCE, the RCE will specify what material to use. Provide necessary materials and perform such corrective work without any additional compensation.

5.13. *Tolerance in Base Course Thickness:* The thickness of the completed modified base is measured at random intervals not to exceed 500 feet in length for a two lane road. The depth measurements will be made by test holes on the day of production. Where the base course is less than the specified thickness by more than 1 inch, remove and replace such areas as directed by the RCE.

5.13.1. Where the measured thickness is more than ½ inch greater than the specified thickness, it is considered as the specified thickness plus ½ inch. The average daily job thickness is the average of the depth measurements determined as specified above. If this average job thickness is less than the specified thickness by more than ¼ inch, an adjusted unit price is used for calculating payment. This adjusted contract unit price bears the same ratio to the contract unit price bid as the average job thickness bears to the specified thickness.

Pay Factor= (Average Job Thickness)/(Specified Job Thickness)

5.13.2. When the Contract includes more than one road, each road is considered separately.

5.13.3. No additional payment over the contract unit price is made for any base course where the average job thickness, determined as provided, exceeds the specified thickness.

5.14. *Curing Coat:* After the completion of the compaction and finishing operations, apply an asphalt curing coat of 0.20 to 0.25 gallons per square yard of asphalt as specified in Section 406 of the Standard Specifications. Keep the finished base course continuously moist until the curing coat is applied. At the time the asphalt material is applied, ensure that the base course surface is dense, free of all loose and extraneous material, and contains sufficient moisture to prevent penetration of the asphalt material.

5.15. *Opening to Traffic:* When staging of construction allows for extended closure to traffic, furnish such personnel and barricades along with other devices necessary to prevent construction equipment or other traffic, regardless of the type vehicle or its reason for being on the project, from using the finished base course. Do not place heavy construction equipment on the base without the approval of the RCE unless it is being used in the subsequent construction operation or a 3-day curing period has been completed, and in this event, ensure the base has hardened sufficiently to prevent marring, damaging or visible rutting of the surface and curing coat by such usage. The amount of time where the ambient temperature was below 32 °F is not counted in the 3-day curing requirements. Light trucks and automobiles related to construction activities are allowed immediately. Repair any areas damaged by construction traffic. If staging of construction requires prompt opening to traffic, place at least one lift of asphalt on the base course within 3 days. Surface treatments may be allowed by the RCE in some instances. Repair any damage to the base caused by early traffic before overlaying. If the asphalt material for the curing coat is not sufficiently dry to prevent pickup when the base course is opened to traffic as outlined above, apply a granular covering before opening.

5.16. *Maintenance:* Within the limits of the Contract, maintain the CSEB course in good condition until all work is complete and accepted. Maintenance includes the immediate repairs of any defects and damage that develops. If repair or patching is necessary, extend it to the full depth of the base course and construct in a manner that ensures the restoration to a uniform and durable base course.

6. RIDEABILITY

6.1. Ensure that the final asphalt surface placed on the CSEB course meets the rideability requirements of SC-M-403 for New Construction.

7. MEASUREMENT

7.1. The quantity for the pay item Cement Stabilized Earth Base at the specified nominal thickness is the surface area of a uniform base constructed by applying and mixing cement with the subgrade and aggregate material as specified and is measured by the square yard (SY) of the modified base in-place, complete and accepted. CSEB constructed outside the designated area is not measured for payment.

7.2. The quantity for the pay item Additional Rock for Full Depth Reclamation is the weight of the additional rock for full depth reclamation material incorporated into the constructed base course as specified, measured by the ton (TON), including water contained in the additional add rock material weighed on approved scales and actually incorporated into the work, complete and accepted. If a visual inspection indicates excessive moisture in the additional rock for full depth reclamation material, a deduction is made as determined by the RCE. The weight of the base course constructed outside the area designated, wasted or lost due to the negligence of the Contractor, and applied in excess of the rate specified or directed in writing is disregarded in calculating the quantity.

7.3. The quantity for the pay item Portland Cement for Cement Stabilized Earth Base Course is measured by the ton (TON) of Portland cement incorporated into the work, complete and accepted. Cement used in excess of 5% of the amount specified is not measured for payment. The measurement of Portland cement is by scale weights or delivered weights. Furnish to the RCE invoices of all cement received to verify the weight.

7.4. The quantity for the pay item Borrow Excavation is measured according to Subsection 203.5 of the Standard Specifications.

8. PAYMENT

8.1. Payment for Portland Cement for Cement Stabilized Earth Base Course is full compensation for furnishing and weighing the cement as specified or directed and includes all other materials, labor, equipment, tools, supplies, transportation and incidentals necessary to complete the work in accordance with the plans, specifications, and other terms of the contract.

8.2. Payment for Cement Stabilized Earth Base (of the uniform thickness required) is full compensation for constructing the CSEB as specified or directed and includes grading, applying and spreading cement, processing and mixing base course material, watering and maintaining proper moisture content, compacting, finishing, curing, hauling and disposing of excess shoulder and reclaimed material, and curing base course, forming construction joints, and all other materials, labor, equipment, tools, transportation, and incidentals necessary to complete the work in accordance with the Plans, the Specifications, and other terms of the

Contract.

8.3. Payment for Additional Rock for Full Depth Reclamation includes all direct and indirect costs or expenses required to complete the work.

8.4. Payment for Borrow Excavation is paid according to Subsection 203.6 of the Standard Specifications.

8.5. Payment for each item includes all direct and indirect costs or expenses required to complete the work. Pay items under this section include the following:

Item No.	Pay Item	Unit
3071060	CEM.STAB.EARTH BASE CR.4"UNIFORM.	SY
3071080	CEM.STAB.EARTH BASE CR.6"UNIFORM.	SY
3071100	CEM.STAB.EARTH BASE CR.8"UNIFORM.	SY
3071120	CEM.STAB.EARTH BASE CR.10"UNIFORM.	SY
3071160	CEM.STAB.EARTH BASE CR.12"UNIFORM.	SY
3072000	CEM.STAB.EARTH BASE CR.16"UNIFORM.	SY
3081060	PORTLAND CEMENT FOR EARBASECR.	TON
3060005	ADD ROCK FOR F.D. RECLAMATION	TON

SECTION V: BID SUBMITTAL FORM

2025 ROADWAY IMPROVEMENT PROJECT
BID FORM

Date of Bid: September 25, 2025, 1:00 PM

BY SUBMITTING THIS BID, THE UNDERSIGNED BIDDER REPRESENTS:

A. that he has carefully examined the plans and specifications with the related documents and visited the site of the Project for which he is submitting a Bid.

B. that he is familiar with all the conditions surrounding the performance of the Work required for this Project, including the availability of materials, equipment, supplies and labor, and has visited the site and is therefore familiar with all physical conditions affecting the work and has considered same in calculating his bid

C. that, if he is awarded the Contract, he will provide all labor, material, supplies. And equipment and execute the Work in accordance with the Contract Documents.

D. that, if awarded the Contract he will commence work after the issuance of a "Notice to Proceed" as required herein.

E. that, if awarded the Contract, he agrees that if the Work or any part thereof is not completed according to the specifications and terms of the Contract Documents and within Contract Time (including any extension thereof), he and his sureties will be liable for Liquidated Damages in accordance with the Contract.

F. that he will hold his Bid open for sixty(60) calendar days after the date Bids are opened or else forfeit the Bid Security to the Owner.

G. that, if awarded the Contract, he will provide a Performance Bond and a Payment Bond together with insurance coverage as required herein.

H. that he understands that the Owner reserves the right to reject any Bids which do not meet the Bid Requirements, or all Bids in the event that the Project is canceled or postponed, or if such is in the best interests of the County.

I. that if awarded the Contract the successful Bidder will enter and execute a contract as required herein.

J. that the Bidder is legally able to enter into and perform a contract, if awarded.

K. that the Bidder is current on all taxes and fees owed to the County.

L. that the bidder agrees to commence work upon issuance of Notice to Proceed with an adequate force, carry the work forward as rapidly as possible, and complete the Project as required by the Special Provisions. .

M. that the bidder agrees that in the case of failure or refusal on his part to execute the Contract within five (5) calendar days after the issuance of a Notice of Award, the check, cash, or Bid Bond accompanying this Bid shall be paid into the funds of the County's account set aside for this Project, as liquidated damages, and not as penalty, for such failure; otherwise the check, cash, or Bid Bond accompanying this Bid shall be returned to the undersigned.

N. that the unit price per ton, square yard, linear foot, etc., must reflect all materials, supplies, equipment, supervision, labor costs, quality control services, and sales tax necessary to complete the project. All costs for grading, sweeping, cleaning, shaping, tacking, compacting, etc.; shall also be included in the unit bid price.

O. that the unit price per ton, square yard, linear foot, etc., must reflect all materials, supplies, equipment, supervision, labor costs, quality control services, and sales tax necessary to complete the project. All costs for grading, sweeping, cleaning, shaping, tacking, compacting, etc.; shall also be included in the unit bid price.

P. that he acknowledges and understands that all Contractor "As Bid" unit measures for the various Project Elements will be reviewed by The County and, where any discrepancies are noted The County reserves the right to advise the bidder and make the necessary corrections and thereby adjust the Contractor's sum total bid amount accordingly. All

adjustments, if any, will be predicated on work measurement as represented on the plans. We shall have the option to decline any reasonable unit measure adjustment that will reflect an increase in our base bid. Therefore, it is understood that unless declined, any adjustments reflecting an increase in the element costs will, when adjusted, reflect an overall increase in the base bid and will be considered in determining the most responsive

Q. that the undersigned, certify that this Bid does not violate Federal or State Antitrust Laws and I have received and read the Request for Bids and understand that this Bid is subject to all conditions thereof. A signature below indicates that the Offeror herein, his agents, servants and/or employees, have not in any way colluded with anyone for and on behalf of the Offeror, or themselves, to gain any favoritism in the award of the Contract herein.

R. that the undersigned certifies that the Contractor listed below will provide a "drug-free workplace" as that term is defined in Section 44-107-30 of the Code of Laws of South Carolina, 1976, as amended, by complying with the requirements set forth in Title 44, chapter 107.

BID OF (Contractor Name)_____

CONTRACTOR EMAIL ADDRESS:_____

FEDERAL IDENTIFICATION NUMBER:_____

CONTRACTOR'S CLASSIFICATIONS AND SUB CLASSIFICATIONS WITH LIMITATIONS

_____	_____	_____
(Classification)	(Sub-Classification)	(Limitations)

_____
(S.C. Contractor's License Number)

2025 ROADWAY IMPROVEMENT PROJECT
BID FORM

Contractor: _____

ITEM #	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	EXTENDED PRICE
1	BONDS AND INSURANCE	LS	1		
2	MOBILIZATION	EA	5		
3	TRAFFIC CONTROL	EA	5		
4	MAINTENANCE STONE	TON	100		
5	REMOVAL & DISPOSAL EXISTING TREE	EA	2		
6	CEMENT MODIFIED SUBBASE (8" UNIFORM) METHOD A	SY	29619		
7	ADDITIONAL ROCK FOR F. D. RECLAMATION (#57 STONE)	TON	3088		
8	PORTLAND CEMENT FOR CEM. MODIFIED SUBBASE (60 LBS / SY)	TON	891		
9	H/M ASPH. SURF. CR. TYPE E (Liquid Included) 100 #/SY	SY	28058		
10	H/M ASPH. SURF. CR. TYPE C (Liquid Included) 150 #/SY	SY	28600		
11	H/M ASPH. SURF. CR. TYPE C (Liquid Included) 220 #/SY	SY	2664		
12	PERMANENT CONST. SIGNS (GROUND MOUNTED)(Scheme E)	LF	240		
13	STATION GRADING	STA	22		
14	15" RCP	LF	200		
15	18" RCP	LF	80		
16	24" SLD. LINE - STOP / DIA. F.D. PNT	LF	56		
17	24" WHITE STOP BARS - THERMO 125 MIL.	LF	56		
18	4" YELLOW SOLID (NO PASSING) THERMO 90 MIL	LF	500		
19	PERM.YEL.PAV.MARK BI-DIR 4"X4"	EA	197		
20	PERMANENT VEGETATION	ACRE	3.81		
21	ORANGE BARRIER FENCE FOR WETLANDS	LF	725		
22	FULL DEPTH PAV'T PATCH - 6" UNIF.	SY	150		
				GRAND TOTAL:	

_____

(Grand Total in Words)

Bidder will complete the Work in accordance with the Contract Documents for the above unit prices, which include all labor, materials, bailing, shoring, removal, overhead, profit, insurance, and all other cost etc., to complete the finish work as stipulated in the Bid Documents

2025 ROADWAY IMPROVEMENT PROJECT
BID FORM

LISTING OF SUBCONTRACTORS

Any bidder in response to this Request for Bids shall set forth in his bid the name and location of the place of business for each of the following subcontractors (if so specified) who may perform work or render services to the prime Contractor to or about the construction, or who will specifically fabricate or install a portion of the work. If the prime Contractor determines to use his own employees to perform any portion of the work for which he would otherwise be required to list a subcontractor, and if the prime Contractor is qualified to perform such work under the terms of the Request for Bids, the prime Contractor shall indicate this in his bid and not subcontract any of that work except with the approval of owner for good cause shown.

Failure to list specified subcontractors shall render the prime Contractor's bid non-responsive. No prime Contractor whose bid is accepted shall substitute any person as a subcontractor in place of the subcontractor listed in the original bid, except as specified within the contract documents.

Listing of Subcontractors

Subcontractor: _____

Place of Business: _____

Principal: _____

License No._____

Subcontractor: _____

Work to be Undertaken: _____

Place of Business: _____

Principal: _____

License No. _____

Subcontractor: _____

Work to be Undertaken: _____

Place of Business: _____

Principal: _____

License No._____

Subcontractor: _____

Work to be Undertaken: _____

Place of Business: _____

Principal: _____

License No._____

2025 ROADWAY IMPROVEMENT PROJECT

BID FORM

Respectfully submitted this ____ day of _____, 2025.

Company Name _____

Authorized Signature _____

Name and Title (type or print) _____

Email Address: _____

Principal of Company (e.g., Name of President, General Partner, Owner, etc.)

_____

State of Incorporation _____

Business Address _____

City, State, Zip Code _____

Telephone Number _____

Contractor's Federal Tax I.D. No. _____

S.C. Contractor's License No.: _____

S.C. Bidder's License No. _____

ACKNOWLEDGMENT OF RECEIPT OF AGENDA:
(If more addenda are issued, then add to the list.)

Addendum No.1 dated: _____

Addendum No.2 dated: _____

Addendum No.3 dated: _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that

we_____, as Principal, a (___corporation, ___ partnership, ___ individual) duly authorized by law to do business as a construction contractor in the State of South Carolina, and _____, as Surety, a corporation duly authorized to transact surety business under the Law of the state of South Carolina, are held and firmly bound unto Clarendon County as oblige, in the penal sum of: Five Percent (5%) of the Bid Amount for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for the project named:

Clarendon CTC 2025 Roadway Improvement Project

NOW, THEREFORE, if the Oblige shall accept the bid of the Principal and the Principal shall enter into a Contract with the Oblige in accordance with the terms of such bid and give such bonds as may be specified in the bidding or Contract Documents with good and sufficient surety acceptable to the Oblige, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____, 2025.

PRINCIPAL	**SURETY**
_____ (Seal)	_____ (Seal)
Bidder's Name and Corporate Seal	Surety's Name and Corporate Seal
By:	By:
Signature and Title	Signature and Title (Attach Power of Attorney)
Attest: _____	Attest: _____
Signature and Title	Signature and Title

Note: A copy of the agent's Power of Attorney for the Surety Company must be attached to this bond form.

SECTION VI: PROJECT INFORMATION

ESTIMATED QUANTITIES OVERALL AND BY ROAD

QUANTITY TOTAL FOR ALL ROADS

ITEM #	DESCRIPTION	UNIT	QUANTITY
1	BONDS AND INSURANCE	LS	1
2	MOBILIZATION	EA	5
3	TRAFFIC CONTROL	EA	5
4	MAINTENANCE STONE	TON	100
5	REMOVAL & DISPOSAL EXISTING TREE	EA	2
6	CEMENT MODIFIED SUBBASE (8" UNIFORM) METHOD A	SY	29619
7	ADDITIONAL ROCK FOR F. D. RECLAMATION (#57 STONE)	TON	3088
8	PORTLAND CEMENT FOR CEM. MODIFIED SUBBASE (60 LBS / SY)	TON	891
9	H/M ASPH. SURF. CR. TYPE E (Liquid Included) 100 #/SY	SY	28058
10	H/M ASPH. SURF. CR. TYPE C (Liquid Included) 150 #/SY	SY	28600
11	H/M ASPH. SURF. CR. TYPE C (Liquid Included) 220 #/SY	SY	2664
12	PERMANENT CONST. SIGNS (GROUND MOUNTED)(Scheme E)	LF	240
13	STATION GRADING	STA	22
14	15" RCP	LF	200
15	18" RCP	LF	80
16	24" SLD. LINE - STOP / DIA. F.D. PNT	LF	56
17	24" WHITE STOP BARS - THERMO 125 MIL.	LF	56
18	4" YELLOW SOLID (NO PASSING) THERMO 90 MIL	LF	500
19	PERM.YEL.PAV.MARK BI-DIR 4"X4"	EA	197
20	PERMANENT VEGETATION	ACRE	3.81
21	ORANGE BARRIER FENCE FOR WETLANDS	LF	725
22	FULL DEPTH PAV'T PATCH - 6" UNIF.	SY	150

Road Name: Barnwell Street
Start: Spann Drive
Stop: Dead End
Road Length in feet: 1056
Width in feet: 21’
Miles: 0.2
Driveways: 20

ITEM #	DESCRIPTION	UNIT	QUANTITY
2	MOBILIZATION	EA	1
3	TRAFFIC CONTROL	EA	1
4	MAINTENANCE STONE	TON	20
11	H/M ASPH. SURF. CR. TYPE C (Liquid Included) 220 #/SY	SY	2664
12	PERMANENT CONST. SIGNS (GROUND MOUNTED)(Scheme E)	LF	48
16	24" SLD. LINE - STOP / DIA. F.D. PNT	LF	12
17	24" WHITE STOP BARS - THERMO 125 MIL.	LF	12
18	4" YELLOW SOLID (NO PASSING) THERMO 90 MIL	LF	100
19	PERM.YEL.PAV.MARK BI-DIR 4"X4"	EA	15
20	PERMANENT VEGETATION	ACRE	0.27
22	FULL DEPTH PAV'T PATCH - 6" UNIF.	SY	150

Road Name: Boyd Road
Start: SC 261
Stop: Begin State Maintenance
Road Length in feet: 6178
Width in feet: 18’
Miles: 1.17
Driveways: 14 Intersections: 3

ITEM #	DESCRIPTION	UNIT	QUANTITY
2	MOBILIZATION	EA	1
3	TRAFFIC CONTROL	EA	1
4	MAINTENANCE STONE	TON	20
5	REMOVAL & DISPOSAL EXISTING TREE	EA	2
6	CEMENT MODIFIED SUBBASE (8" UNIFORM) METHOD A	SY	13043
7	ADDITIONAL ROCK FOR F. D. RECLAMATION (#57 STONE)	TON	1360
8	PORTLAND CEMENT FOR CEM. MODIFIED SUBBASE (60 LBS / SY)	TON	392
9	H/M ASPH. SURF. CR. TYPE E (Liquid Included) 100 #/SY	SY	12356
10	H/M ASPH. SURF. CR. TYPE C (Liquid Included) 150 #/SY	SY	12604
11	PERMANENT CONST. SIGNS (GROUND MOUNTED)(Scheme E)	LF	48
14	18" RCP	LF	80
15	24" SLD. LINE - STOP / DIA. F.D. PNT	LF	12
16	24" WHITE STOP BARS - THERMO 125 MIL.	LF	12
17	4" YELLOW SOLID (NO PASSING) THERMO 90 MIL	LF	100
18	PERM.YEL.PAV.MARK BI-DIR 4"X4"	EA	80
19	PERMANENT VEGETATION	ACRE	1.56

Road Name: Goat Island Road
Start: Wash Davis Road
Stop: Dead End
Road Length in feet: 5703 LF
Width in feet: 18’
Miles: 1.08
Driveways: 19

ITEM #	DESCRIPTION	UNIT	QUANTITY
2	MOBILIZATION	EA	1
3	TRAFFIC CONTROL	EA	1
4	MAINTENANCE STONE	TON	20
6	CEMENT MODIFIED SUBBASE (8" UNIFORM) METHOD A	SY	12040
7	ADDITIONAL ROCK FOR F. D. RECLAMATION (#57 STONE)	TON	1255
8	PORTLAND CEMENT FOR CEM. MODIFIED SUBBASE (60 LBS / SY)	TON	362
9	H/M ASPH. SURF. CR. TYPE E (Liquid Included) 100 #/SY	SY	11406
10	H/M ASPH. SURF. CR. TYPE C (Liquid Included) 150 #/SY	SY	11539
11	PERMANENT CONST. SIGNS (GROUND MOUNTED)(Scheme E)	LF	48
12	STATION GRADING	STA	20
13	15" RCP	LF	152
15	24" SLD. LINE - STOP / DIA. F.D. PNT	LF	12
16	24" WHITE STOP BARS - THERMO 125 MIL.	LF	12
17	4" YELLOW SOLID (NO PASSING) THERMO 90 MIL	LF	100
18	PERM.YEL.PAV.MARK BI-DIR 4"X4"	EA	73
19	PERMANENT VEGETATION	ACRE	1.44
20	ORANGE BARRIER FENCE FOR WETLANDS	LF	725

Road Name: Reed Road
Start: Salem Road
Stop: Dead End
Road Length in feet: 722
Width in feet: 18
Miles: 0.137
Driveways: 9

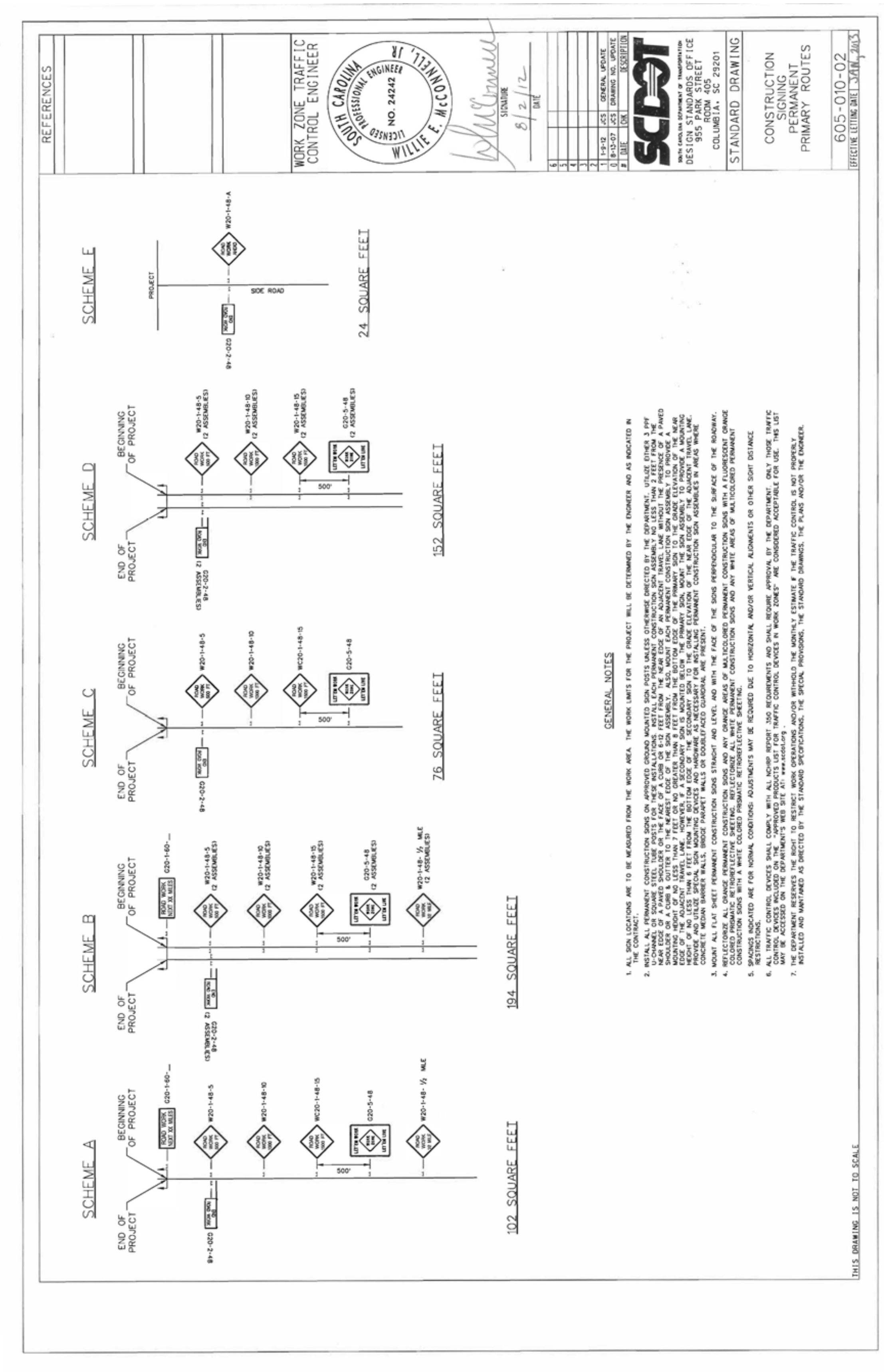
ITEM #	DESCRIPTION	UNIT	QUANTITY
2	MOBILIZATION	EA	1
3	TRAFFIC CONTROL	EA	1
4	MAINTENANCE STONE	TON	20
6	CEMENT MODIFIED SUBBASE (8" UNIFORM) METHOD A	SY	1525
7	ADDITIONAL ROCK FOR F. D. RECLAMATION (#57 STONE)	TON	159
8	PORTLAND CEMENT FOR CEM. MODIFIED SUBBASE (60 LBS / SY)	TON	46
9	H/M ASPH. SURF. CR. TYPE E (Liquid Included) 100 #/SY	SY	1444
10	H/M ASPH. SURF. CR. TYPE C (Liquid Included) 150 #/SY	SY	1507
11	PERMANENT CONST. SIGNS (GROUND MOUNTED)(Scheme E)	LF	48
12	STATION GRADING	STA	2
13	15" RCP	LF	48
15	24" SLD. LINE - STOP / DIA. F.D. PNT	LF	10
16	24" WHITE STOP BARS - THERMO 125 MIL.	LF	10
17	4" YELLOW SOLID (NO PASSING) THERMO 90 mil	LF	100
18	PERM.YEL.PAV.MARK BI-DIR 4"X4"	EA	10
19	PERMANENT VEGETATION	ACRE	0.18

Road Name: Timberline Lane
Start: Alcolu Street
Stop: Dead End
Road Length in feet: 1426
Width in feet: 18’
Miles: 0.27
Driveways: 14

ITEM #	DESCRIPTION	UNIT	QUANTITY
2	MOBILIZATION	EA	1
3	TRAFFIC CONTROL	EA	1
4	MAINTENANCE STONE	TON	20
6	CEMENT MODIFIED SUBBASE (8" UNIFORM) METHOD A	SY	3011
7	ADDITIONAL ROCK FOR F. D. RECLAMATION (#57 STONE)	TON	314
8	PORTLAND CEMENT FOR CEM. MODIFIED SUBBASE (60 LBS / SY)	TON	91
9	H/M ASPH. SURF. CR. TYPE E (Liquid Included) 100 #/SY	SY	2852
10	H/M ASPH. SURF. CR. TYPE C (Liquid Included) 150 #/SY	SY	2950
11	PERMANENT CONST. SIGNS (GROUND MOUNTED)(Scheme E)	LF	48
15	24" SLD. LINE - STOP / DIA. F.D. PNT	LF	10
16	24" WHITE STOP BARS - THERMO 125 MIL.	LF	10
17	4" YELLOW SOLID (NO PASSING) THERMO 90 mil	LF	100
18	PERM.YEL.PAV.MARK BI-DIR 4"X4"	EA	19
19	PERMANENT VEGETATION	ACRE	0.36

PROJECT STANDARD DRAWINGS

Standard Drawings Attached for Reference:
605-010-02 (Scheme E)
610-005-00 & 10 (Flagging Operations)


SCHEME A
SCHEME B
SCHEME C
SCHEME D
SCHEME E
END OF PROJECT
BEGINNING OF PROJECT
102 SQUARE FEET
194 SQUARE FEET
76 SQUARE FEET
152 SQUARE FEET
24 SQUARE FEET
SIDE ROAD
GENERAL NOTES
THIS DRAWING IS NOT TO SCALE
REFERENCES
WORK ZONE TRAFFIC CONTROL ENGINEER
SOUTH CAROLINA
NO. 24242
WILLIE E. McCONNELL, JR
SIGNATURE
DATE
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201
STANDARD DRAWING
CONSTRUCTION SIGNING PERMANENT PRIMARY ROUTES
605-010-02

REFERENCES

FLAGGING OPERATIONS
GENERAL NOTES

(ALL NOTES, SPECIFICATIONS AND REQUIREMENTS ON THIS STANDARD DRAWING APPLY TO ALL SUBSEQUENT STANDARD DRAWINGS REGARDING FLAGGING OPERATIONS UNLESS OTHERWISE NOTED)

FLAGGING OPERATIONS -

1. KEY FEATURES RELEVANT TO FLAGGING OPERATIONS:

APPROACH TAPER - THIS IS A ONE-LANE TWO-WAY TAPER PLACED IN THE TRAVEL LANE WHERE THE WORK ACTIVITY TAKES PLACE. THIS TAPER PRECEDES THE BUFFER SPACE AND THE WORK ACTIVITY AREA. THE LENGTH OF THIS TAPER MAY VARY FROM 50 FEET TO 100 FEET. INSTALL AND MAINTAIN NO LESS THAN FIVE (5) TRAFFIC CONTROL DEVICES EQUALLY SPACED AT 10' TO 25' INTERVALS AS NECESSARY TO CORRESPOND WITH THE LENGTH OF THE TAPER.

DOWNSTREAM TAPER - THIS TAPER, PLACED IN THE TRAVEL LANE WHERE THE WORK ACTIVITY TAKES PLACE, FOLLOWS THE WORK ACTIVITY AREA AND SERVES AS THE TERMINATION AREA FOR THE CLOSURE OF THE TRAVEL LANE. THE LENGTH OF THIS TAPER MAY VARY FROM 50 FEET TO 100 FEET. INSTALL AND MAINTAIN NO LESS THAN FIVE (5) TRAFFIC CONTROL DEVICES IN THIS TAPER.

FLAGGER STATION - THIS IS THE SPECIFIC LOCATION OF THE FLAGGER.

CLOSED LANE FLAGGER - THIS FLAGGER IS STATIONED ADJACENT TO THE FIRST TRAFFIC CONTROL DEVICE IN THE APPROACH TAPER WHO CONTROLS THE TRAFFIC THAT REQUIRES RELOCATION FROM THE TRAVEL LANE BEING CLOSED TO TRAFFIC.

OPEN LANE FLAGGER - THIS FLAGGER IS STATIONED 100 FEET BEYOND THE LAST TRAFFIC CONTROL DEVICE IN THE DOWNSTREAM TAPER WHO CONTROLS THE TRAFFIC OPERATING IN THE TRAVEL LANE REMAINING OPEN TO TRAFFIC.

SIDE ROAD FLAGGER - THIS FLAGGER IS STATIONED ON AN INTERSECTING SIDE ROAD AND CONTROLS THE SIDE ROAD TRAFFIC ENTERING INTO THE ROADWAY WHERE THE WORK ACTIVITY AREA IS LOCATED.

BUFFER SPACE - THIS AREA IS LOCATED BETWEEN THE DOWNSTREAM END OF THE APPROACH TAPER AND THE NEAREST LIMITS OF THE WORK ACTIVITY AREA AND MAY PROVIDE SOME RECOVERY SPACE FOR AN ERRANT VEHICLE. THE PRESENCE OF PERSONNEL, TOOLS, MATERIALS, EQUIPMENT, WORK VEHICLES, ETC. WITHIN THE LIMITS OF THE BUFFER SPACE IS PROHIBITED. HOWEVER, WHEN THE MINIMUM DISTANCE REQUIREMENTS FOR THE BUFFER SPACE ARE UNAVAILABLE, A TRUCK MOUNTED ATTENUATOR MAY TEMPORARILY ENCROACH UPON THE BUFFER SPACE IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN THE SECTION BELOW ENTITLED, "BUFFER SPACE", WHEN APPROVED BY THE ENGINEER.

WORK ACTIVITY AREA - PERSONNEL, MATERIALS, EQUIPMENT, WORK VEHICLES, ETC. ARE PRESENT WITHIN THIS AREA TO CONDUCT THE WORK.

LIMITS of the WORK ACTIVITY AREA - THIS IS THE BOUNDARY OF THE WORK ACTIVITY AREA FIRST ENCOUNTERED, FROM EITHER DIRECTION, BY MOTORISTS PASSING BY THE WORK ACTIVITY AREA IN THE ADJACENT TRAVEL LANE OPEN TO TRAFFIC AND CONTROLLED BY THE FLAGGERS.

APPROACH LANE - TRAFFIC APPROACHES AN INTERSECTION OR A SPECIFIC LOCATION IN THIS TRAVEL LANE.

DEPARTURE LANE - TRAFFIC DEPARTS FROM AN INTERSECTION OR A SPECIFIC LOCATION IN THIS TRAVEL LANE.

MAINLINE APPROACH - THIS IS AN APPROACH TO THE WORK ACTIVITY AREA ON THE ROADWAY WHERE THE WORK ACTIVITY AREA IS LOCATED.

SIDE ROADS - THESE ROADS INTERSECT THE ROADWAY ON WHICH THE WORK ACTIVITY AREA IS LOCATED.

LIMITS of the INTERSECTION - THE LIMITS OF OR THE PHYSICAL AREA WITHIN AN INTERSECTION IS DEFINED BY THE LOCATION OF STOP BARS WHEN PRESENT, WHEN STOP BARS ARE ABSENT, THE LIMITS OF OR THE PHYSICAL AREA WITHIN AN INTERSECTION IS DEFINED BY THE LOCATION POINTS WHERE THE CORNER RADII BETWEEN ADJACENT ROADWAY APPROACHES TIE TO THE EDGE OF PAVEMENT OR THE EDGE OF TRAVEL LANE ADJACENT TO THE EDGE OF PAVEMENT OF EACH ROADWAY.

2. INSTALL, CONDUCT AND MAINTAIN FLAGGING OPERATIONS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS, THE STANDARD DRAWINGS, THE MUTCD AND THE "SOUTH CAROLINA FLAGGER'S HANDBOOK" UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. INSTALL ALL SIGNS RELATIVE TO A FLAGGING OPERATION PRIOR TO INITIATION OF THE OPERATION AND REMOVE OR COVER ALL SIGNS IMMEDIATELY UPON TERMINATION OF THE OPERATION. EQUIP EACH FLAGGER WITH A 24" x 24" STOP/SLOW PADDLE MOUNTED ON A RIGID HANDLE WITH A MINIMUM LENGTH OF 7 FEET. THE DEPARTMENT PROHIBITS THE USE OF FLAGS EXCEPT DURING EMERGENCY SITUATIONS.

3. LANE CLOSURES FOR FLAGGING OPERATIONS ARE RESTRICTED TO A MAXIMUM DISTANCE OF 2 MILES UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE WORK LIMITS WILL COMPLY WITH THE CONTRACT AND SHALL REQUIRE THE ENGINEER'S APPROVAL PRIOR TO BEGINNING THE WORK.

4. INSTALL AND MAINTAIN THE PROPER ARRAY OF ADVANCE WARNING SIGNS FOR EACH "MAINLINE APPROACH" WHEN A FLAGGING OPERATION IS IN PLACE AND ACTIVE. WHEN NECESSARY TO RELOCATE THE "FLAGGER STATION" WHILE ACTIVELY MAINTAINING THE FLAGGING OPERATION, INSTALL AN ADDITIONAL ARRAY OF ADVANCE WARNING SIGNS AT THE LOCATION RELATIVE TO THE NEW "FLAGGER STATION" AND REMOVE THE ORIGINAL ARRAY OF ADVANCE WARNING SIGNS IMMEDIATELY UPON COMPLETION OF THE RELOCATION OF THE FLAGGER TO THE NEW "FLAGGER STATION".

5. INSTALL ALL ADVANCE WARNING SIGNS IMMEDIATELY PRIOR TO INITIATING A FLAGGING OPERATION AND REMOVE OR COVER ALL SIGNS IMMEDIATELY UPON TERMINATION OF THE OPERATION.

6. MAINTAIN TWO-WAY RADIO COMMUNICATIONS BETWEEN ALL FLAGGERS.

NIGHTTIME FLAGGING OPERATIONS -

1. EACH FLAGGER SHALL WEAR SAFETY APPAREL IN COMPLIANCE WITH THE REQUIREMENTS OF ANSI / ISEA 107 STANDARD PERFORMANCE FOR CLASS 3 RISK EXPOSURE, LATEST REVISION, WHEN CONDUCTING NIGHTTIME FLAGGING OPERATIONS.

2. ILLUMINATE EACH "FLAGGER STATION" WITH ANY COMBINATION OF PORTABLE LIGHTS, STANDARD ELECTRIC LIGHTS, EXISTING STREET LIGHTS, ETC. THAT WILL PROVIDE A MINIMUM ILLUMINATION LEVEL OF 108 Lx OR 10 fc WHEN CONDUCTING NIGHTTIME FLAGGING OPERATIONS.

3. SUPPLEMENT EACH ARRAY OF ADVANCE WARNING SIGNS ON EACH "MAINLINE APPROACH" WITH A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN. THESE CHANGEABLE MESSAGE SIGNS ARE NOT REQUIRED ON THE "SIDE ROADS" INTERSECTING THE ROADWAY WHERE THE "WORK ACTIVITY AREA" IS LOCATED. ALSO, THESE CHANGEABLE MESSAGE SIGNS ARE NOT REQUIRED DURING DAYTIME FLAGGING OPERATIONS UNLESS OTHERWISE DIRECTED BY THE STANDARD DRAWINGS. INSTALL THE CHANGEABLE MESSAGE SIGNS IN ADVANCE OF THE ADVANCE WARNING SIGN ARRAYS. THE MESSAGES SHOULD BE "PREPARE TO STOP", "FLAGGER AHEAD", A TRUCK MOUNTED CHANGEABLE MESSAGE SIGN IS NOT AN ACCEPTABLE ALTERNATIVE TO A TRAILER MOUNTED CHANGEABLE MESSAGE SIGN DURING NIGHTTIME FLAGGING OPERATIONS.

4. UTILIZE PORTABLE PLASTIC DRUMS OR 42" OVERSIZED TRAFFIC CONES IN PLACE OF 36" STANDARD TRAFFIC CONES DURING NIGHTTIME FLAGGING OPERATIONS.

BUFFER SPACE -

1. THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" ARE BASED UPON THE LEGAL POSTED REGULATORY SPEED LIMIT OF THE ROADWAY PRIOR TO BEGINNING THE WORK.

SPEED LIMIT	DISTANCES
LOW SPEED ≤ 35 MPH	200 FEET
INTERMEDIATE SPEED 40 - 50 MPH	300 FEET
HIGH SPEED 55 MPH	400 FEET

2. THE PRESENCE OF PERSONNEL, TOOLS, MATERIALS, EQUIPMENT, WORK VEHICLES, ETC. WITHIN THE LIMITS OF THE "BUFFER SPACE" IS PROHIBITED. A TRUCK MOUNTED ATTENUATOR IS THE ONLY WORK VEHICLE THAT MAY TEMPORARILY ENCROACH UPON THE "BUFFER SPACE" IN ACCORDANCE WITH THE CONDITIONS SPECIFIED IN THE FOLLOWING NOTE WHEN APPROVED BY THE ENGINEER. SEE NOTE NO. 3.

3. WHEN THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" ARE UNAVAILABLE DUE TO FIELD CONDITIONS, IT MAY BE NECESSARY FOR A TRUCK MOUNTED ATTENUATOR TO TEMPORARILY ENCROACH UPON THE "BUFFER SPACE" WHEN APPROVED BY THE ENGINEER. A TRUCK MOUNTED ATTENUATOR IS THE ONLY VEHICLE PERMITTED TO TEMPORARILY ENCROACH UPON THE "BUFFER SPACE" AND THIS ENCROACHMENT IS ONLY PERMITTED WHEN ALL REASONABLE OPTIONS TO AVOID DOING SO HAVE BEEN EXHAUSTED. WHEN ENCROACHMENT UPON THE "BUFFER SPACE" IS APPROVED BY THE ENGINEER, MINIMIZE THE TIME DURATION OF THE ENCROACHMENT BY REMOVAL OF THE TRUCK MOUNTED ATTENUATOR FROM THE "BUFFER SPACE" AT THE FIRST OPPORTUNITY THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" BECOME AVAILABLE.

SIGNS AND TRAFFIC CONTROL DEVICES -

1. MEASURE THE ADVANCE WARNING SIGN LOCATIONS FOR EACH APPROACH FROM THE "FLAGGER STATION" LOCATED ON THAT APPROACH.

2. INSTALL THE ADVANCE WARNING SIGNS AS SPACING INTERVALS BASED UPON THE POSTED REGULATORY SPEED LIMIT OF THE ROADWAY PRIOR TO BEGINNING ANY WORK. THE ADVANCE WARNING SIGN SPACING INTERVALS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS TO THESE DISTANCES MAY BE NECESSARY DUE TO EXISTING SIGNS, INTERSECTING ROADWAYS, HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS. SEE TABLE A.

3. INSTALL ADVANCE WARNING SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS NO LESS THAN 4 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH EARTH SHOULDERS AND NO LESS THAN 6 FEET FROM THE NEAR EDGE OF THE SIGN TO THE NEAR EDGE OF AN ADJACENT TRAVEL LANE ON ROADWAYS WITH PAVED SHOULDERS. WHEN CURB & GUTTER IS PRESENT, INSTALL THE SIGN NO LESS THAN 2 FEET FROM THE NEAR EDGE OF THE SIGN TO THE FACE OF THE CURB.

4. ALL SIGNS MOUNTED ON PORTABLE SIGN SUPPORTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 5 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN. ALL SIGNS MOUNTED ON GROUND MOUNTED U-CHANNEL OR SQUARE STEEL TUBE POSTS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GRADE ELEVATION OF THE NEAR EDGE OF THE ADJACENT TRAVEL LANE TO THE BOTTOM OF THE SIGN UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. MOUNT ALL SIGNS STRAIGHT AND LEVEL AND WITH THE FACE OF THE SIGNS PERPENDICULAR TO THE SURFACE OF THE ROADWAY.

5. RETROREFLECTORIZE ORANGE ADVANCE WARNING SIGNS AND ANY ORANGE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC RETROREFLECTIVE SHEETING. RETROREFLECTORIZE WHITE REGULATORY SIGNS AND ANY WHITE AREAS OF A MULTI-COLORED ADVANCE WARNING SIGN WITH A WHITE COLORED PRISMATIC RETROREFLECTIVE SHEETING.

6. ALL TRAFFIC CONTROL DEVICES SHALL COMPLY WITH THE REQUIREMENTS OF NCHRP REPORT 350 OR THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) AND SHALL REQUIRE APPROVAL BY THE DEPARTMENT. ONLY THOSE TRAFFIC CONTROL DEVICES INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES" ARE CONSIDERED ACCEPTABLE FOR USE. THIS LIST MAY BE ACCESSED ON THE DEPARTMENT'S WEB SITE AT: www.scdot.org .

7. RETROREFLECTORIZATION OF 36" TRAFFIC CONES USED DURING DAYLIGHT HOURS IS NOT REQUIRED. IN THE EVENT A DAYTIME FLAGGING OPERATION EXTENDS INTO THE NIGHTTIME HOURS, REPLACE ALL 36" TRAFFIC CONES WITH EITHER PORTABLE PLASTIC DRUMS OR 42" OVERSIZED TRAFFIC CONES. RETROREFLECTORIZE ALL PORTABLE PLASTIC DRUMS AND 42" OVERSIZED TRAFFIC CONES WITH TYPE III OR GREATER FLEXIBLE MICROPRISMATIC RETROREFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT.

8. DELINEATE THE TANGENT AREA OF THE LANE CLOSURE WITH THE NECESSARY TRAFFIC CONTROL DEVICES TO MINIMIZE ENCROACHMENT BY MOTORISTS INTO THE CLOSED TRAVEL LANE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. ON ROADWAYS WITH POSTED REGULATORY SPEED LIMITS OF 35 MPH OR LESS, INSTALL THE TRAFFIC CONTROL DEVICES AT SPACING INTERVALS OF 25 FEET. ON ROADWAYS WITH POSTED REGULATORY SPEED LIMITS OF 40 MPH OR GREATER, INSTALL THE TRAFFIC CONTROL DEVICES AT SPACING INTERVALS OF 50 FEET. SEE TABLE B.

ADVANCE WARNING ARROW PANEL -

1. DURING FLAGGING OPERATIONS, AN ADVANCE WARNING ARROW PANEL SHALL OPERATE IN THE "FOUR CORNERS" CAUTION MODE WHEN LOCATED WITHIN OR IN BETWEEN THE LIMITS OF THE ADVANCE WARNING SIGN ARRAYS SPECIFIC TO A FLAGGING OPERATION. OPERATION OF AN ADVANCE WARNING ARROW PANEL IN AN ARROW, CHEVRON OR ANY OTHER TYPE OF CAUTION MODE OTHER THAN THE "FOUR CORNERS" CAUTION MODE WHEN LOCATED WITHIN OR IN BETWEEN THE LIMITS OF THE ADVANCE WARNING SIGN ARRAYS AS SPECIFIED HEREINBEFORE IS PROHIBITED.

2. ALL ADVANCE WARNING ARROW PANELS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION. THE SPECIFIC LOCATION OF AN ADVANCE WARNING ARROW PANEL MAY REQUIRE ADJUSTMENTS DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENT OR OTHER SIGHT DISTANCE RESTRICTIONS.

TRUCK MOUNTED ATTENUATOR -

1. A TRUCK MOUNTED ATTENUATOR IS OPTIONAL. UTILIZATION OF A TRUCK MOUNTED ATTENUATOR SHOULD BE CONSIDERED WHEN THE MINIMUM DISTANCE REQUIREMENTS FOR THE "BUFFER SPACE" ARE UNAVAILABLE DUE TO FIELD CONDITIONS. HOWEVER, A TRAILER MOUNTED ADVANCE WARNING ARROW PANEL MAY BE UTILIZED IN PLACE OF A TRUCK MOUNTED ATTENUATOR DURING TRAFFIC CONTROL SETUPS FOR WORK ACTIVITIES SUCH AS ASPHALT CONCRETE PLACEMENT OPERATIONS WHEN APPROVED BY THE ENGINEER.

2. WHEN UTILIZING A TRUCK MOUNTED ATTENUATOR, ENSURE THE TRUCK HAS THE CORRECT GROSS VEHICULAR WEIGHT (GVWR) REQUIRED FOR THE TYPE OF TRUCK MOUNTED ATTENUATOR BEING UTILIZED. A DIRECT TRUCK MOUNTED TRUCK MOUNTED ATTENUATOR, A UNIT MOUNTED AND ATTACHED TO BRACKETS OR SIMILAR DEVICES CONNECTED TO THE FRAME OF THE TRUCK, REQUIRES A TRUCK WITH A MINIMUM GVW OF 15,000 POUNDS (ACTUAL WEIGHT) UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. A TRAILER TOWED TRUCK MOUNTED ATTENUATOR, A TRAILER TYPE UNIT TOWED FROM BEHIND AND ATTACHED TO THE FRAME OF THE TRUCK VIA A PINTLE HOOK / HITCH, REQUIRES A TRUCK WITH A MINIMUM GVW OF 10,000 POUNDS (ACTUAL WEIGHT) UNLESS OTHERWISE DIRECTED BY THE DEPARTMENT. IF THE ADDITION OF SUPPLEMENTAL WEIGHT TO THE VEHICLE AS BALLAST IS NECESSARY, CONTAIN THE MATERIAL WITHIN A STRUCTURE CONSTRUCTED OF STEEL. CONSTRUCT THIS STEEL STRUCTURE TO HAVE A MINIMUM OF FOUR (4) SIDES AND A BOTTOM. A TOP IS OPTIONAL. BOLT THIS STRUCTURE TO THE FRAME OF THE TRUCK. UTILIZE A SUFFICIENT NUMBER OF FASTENERS FOR ATTACHMENT OF THE STEEL STRUCTURE TO THE FRAME OF THE TRUCK TO ENSURE THE STRUCTURE WILL NOT SEPARATE FROM THE FRAME OF THE TRUCK DURING AN IMPACT UPON THE TRUCK MOUNTED ATTENUATOR. UTILIZE EITHER DRY LOOSE SAND OR STEEL REINFORCED CONCRETE FOR BALLAST MATERIAL WITHIN THE STEEL STRUCTURE TO ACHIEVE THE NECESSARY WEIGHT. THE BALLAST MATERIAL SHALL REMAIN CONTAINED WITHIN THE CONFINES OF THE STEEL STRUCTURE IN ITS ENTIRETY AND SHALL NOT PROTRUDE FROM THE STEEL STRUCTURE IN ANY MANNER.

3. LOCATE THE TRUCK MOUNTED ATTENUATOR APPROXIMATELY 100 FEET IN ADVANCE OF THE "WORK ACTIVITY AREA" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

4. PROVIDE, INSTALL AND MAINTAIN THE TRUCK MOUNTED ATTENUATOR AS SPECIFIED BY THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER.

GENERAL -

1. CONDUCT THE WORK IN SUCH A MANNER SO AS NOT TO ENCROACH ONTO THE ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.

2. IF WORK IS BEING CONDUCTED AT TWO DIFFERENT LOCATIONS AT THE SAME TIME, SEPARATE THE TWO LOCATIONS BY NO LESS THAN 2 MILES FROM THE LAST TRAFFIC CONTROL DEVICE IN THE "DOWNSTREAM TAPER" OF THE FIRST LANE CLOSURE TO THE FIRST TRAFFIC CONTROL DEVICE IN THE "APPROACH TAPER" OF THE SECOND LANE CLOSURE ENCOUNTERED BY A MOTORIST UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

3. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.

TABLE A

SIGN PLACEMENT INTERVALS	
SPEED LIMIT	*
* ≤ 35 MPH LOW SPEED	200
* 40 - 50 MPH INTERMEDIATE SPEED	350
* 55 MPH HIGH SPEED	500

* REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

TABLE B

TRAFFIC CONTROL DEVICE SPACING INTERVALS WORK ACTIVITY / BUFFER SPACE AREAS	
SPEED LIMIT	SPACING INTERVALS
≤ 35 MPH	25 FEET
40 - 55 MPH	50 FEET

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL, JR.

SIGNATURE

6/1/2018
DATE

#	DATE	CHK	DESCRIPTION
5			
4			
3			
2			
1	4-27-18	WEM	REVISED FLAGGING OPERATIONS NOTE 1
0	3-14-15	JCS	NEW DRAWING

SCDOT

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

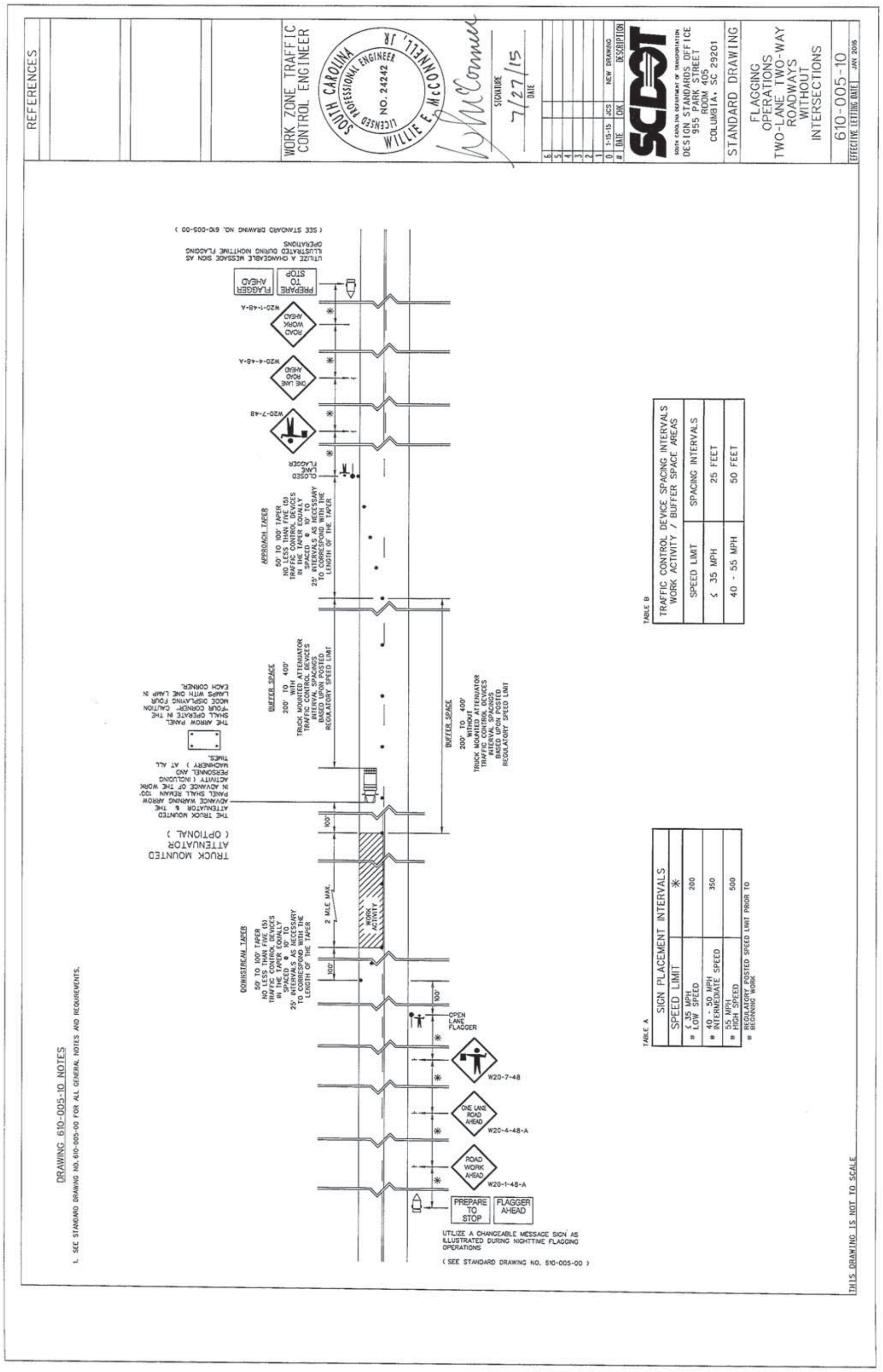
STANDARD DRAWING

FLAGGING OPERATIONS TWO-LANE TWO-WAY PRIMARY & SECONDARY ROUTES

610-005-00

EFFECTIVE LETTING DATE | JAN 2019

THIS DRAWING IS NOT TO SCALE


REFERENCES
WORK ZONE TRAFFIC CONTROL ENGINEER
SCDOT
DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201
STANDARD DRAWING
FLAGGING OPERATIONS
TWO-LANE TWO-WAY ROADWAYS
WITHOUT INTERSECTIONS
610-005-10
DRAWING 610-005-10 NOTES
1. SEE STANDARD DRAWING NO. 610-005-00 FOR ALL GENERAL NOTES AND REQUIREMENTS.
TABLE A
SIGN PLACEMENT INTERVALS
TABLE B
TRAFFIC CONTROL DEVICE SPACING INTERVALS WORK ACTIVITY / BUFFER SPACE AREAS
SPEED LIMIT
SPACING INTERVALS
≤ 35 MPH
25 FEET
40 - 55 MPH
50 FEET
THIS DRAWING IS NOT TO SCALE

PROJECT MAPS

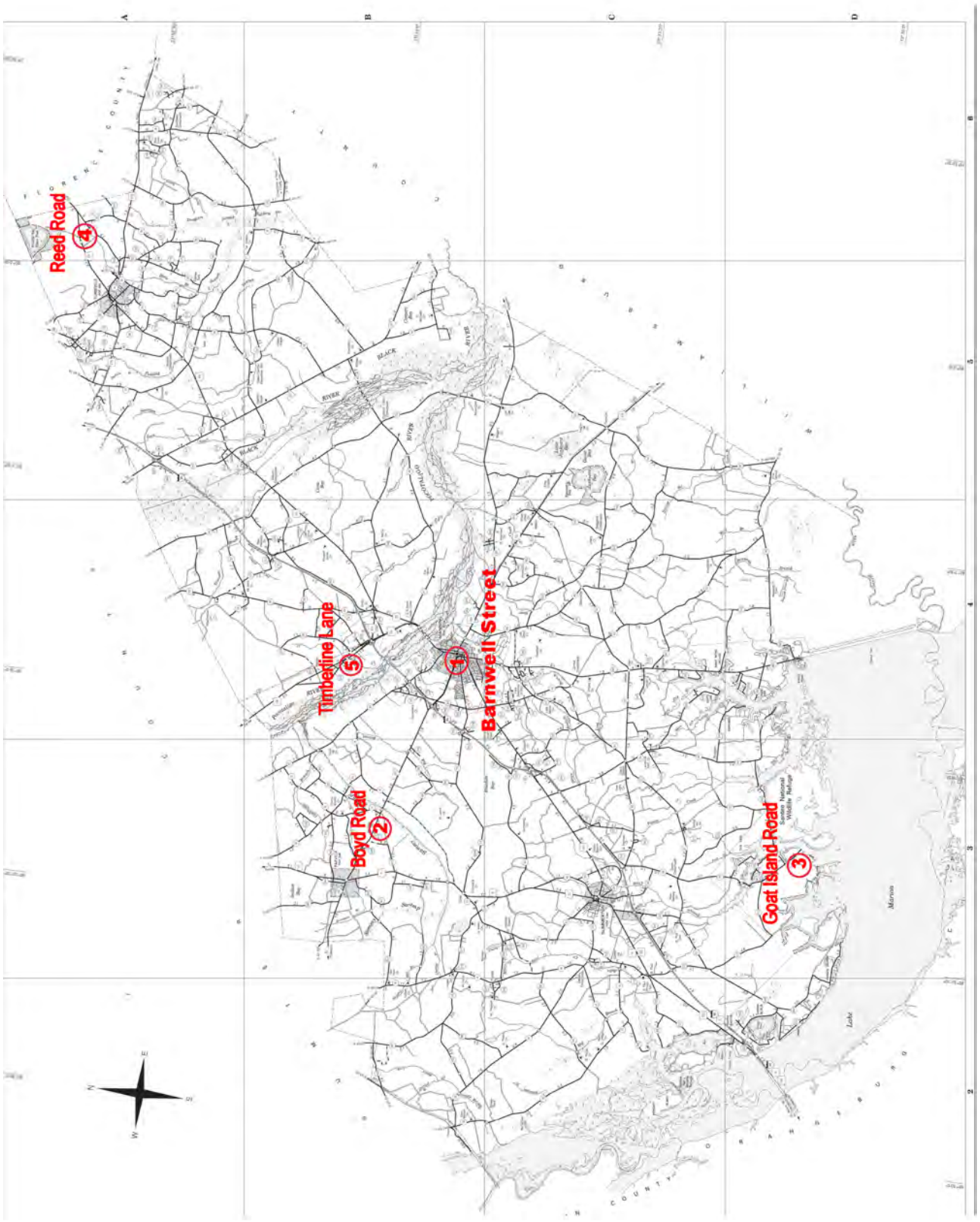
(General Location)

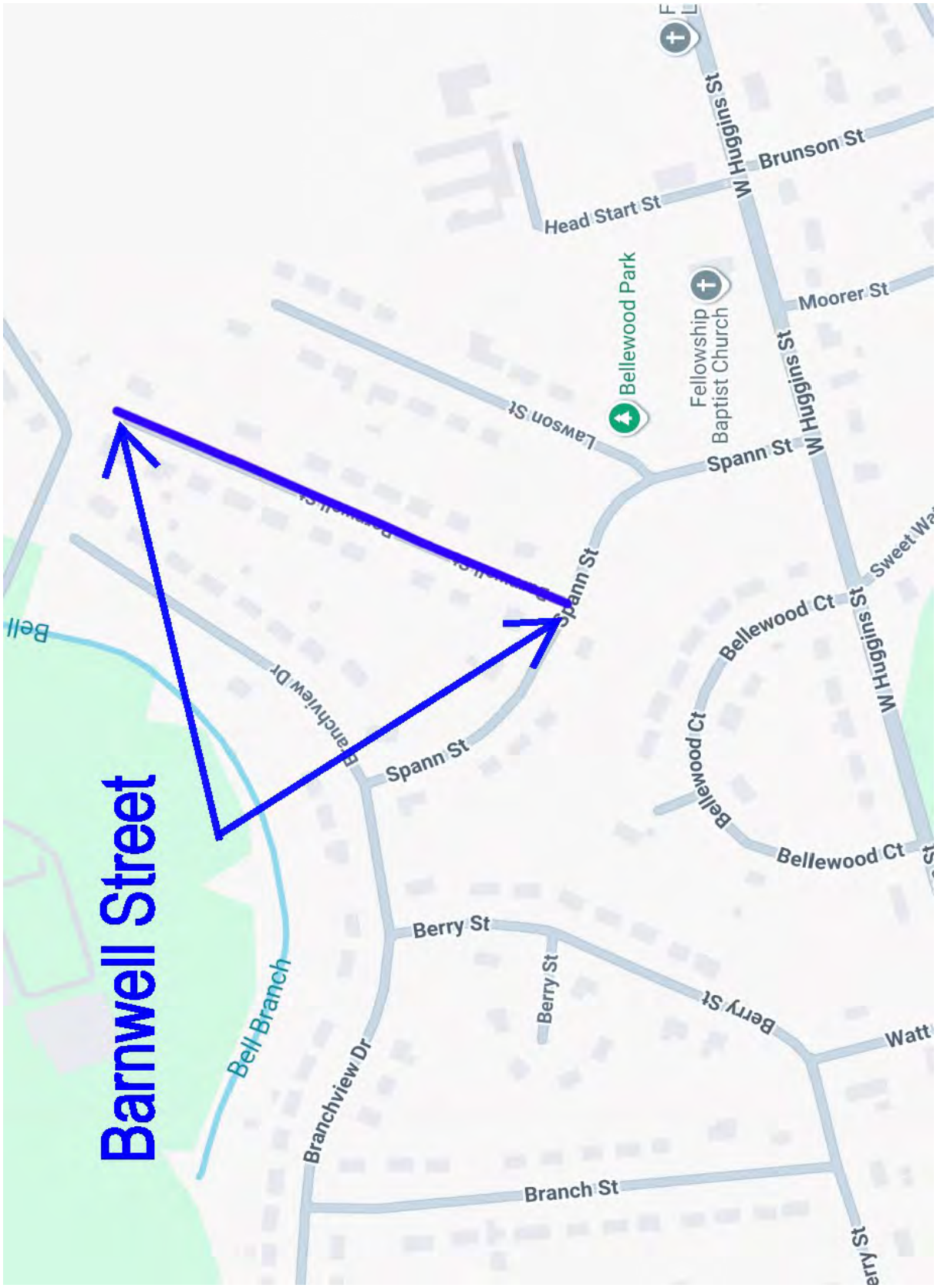
Clarendon County Map

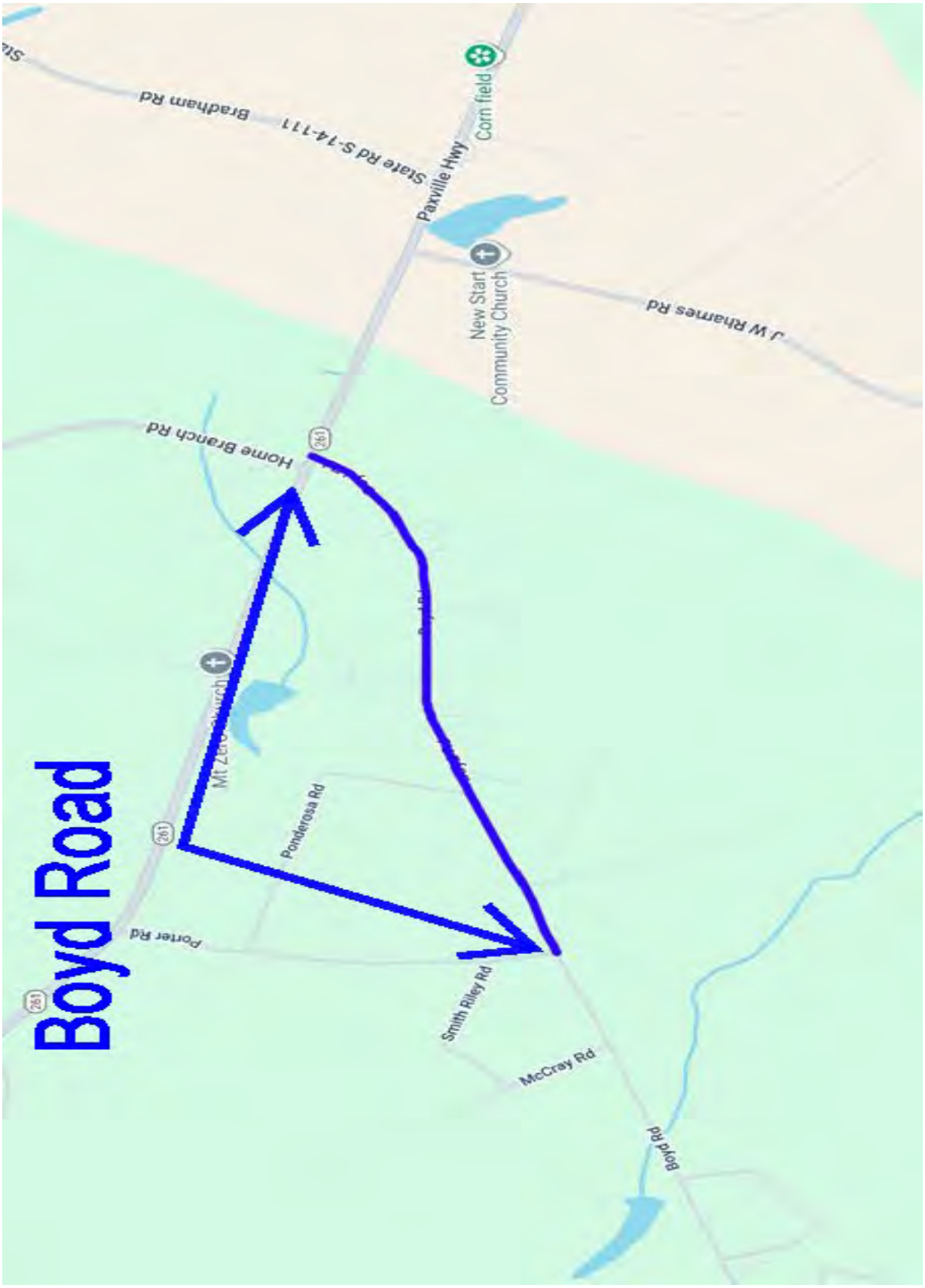
County Grid Map

Road Maps

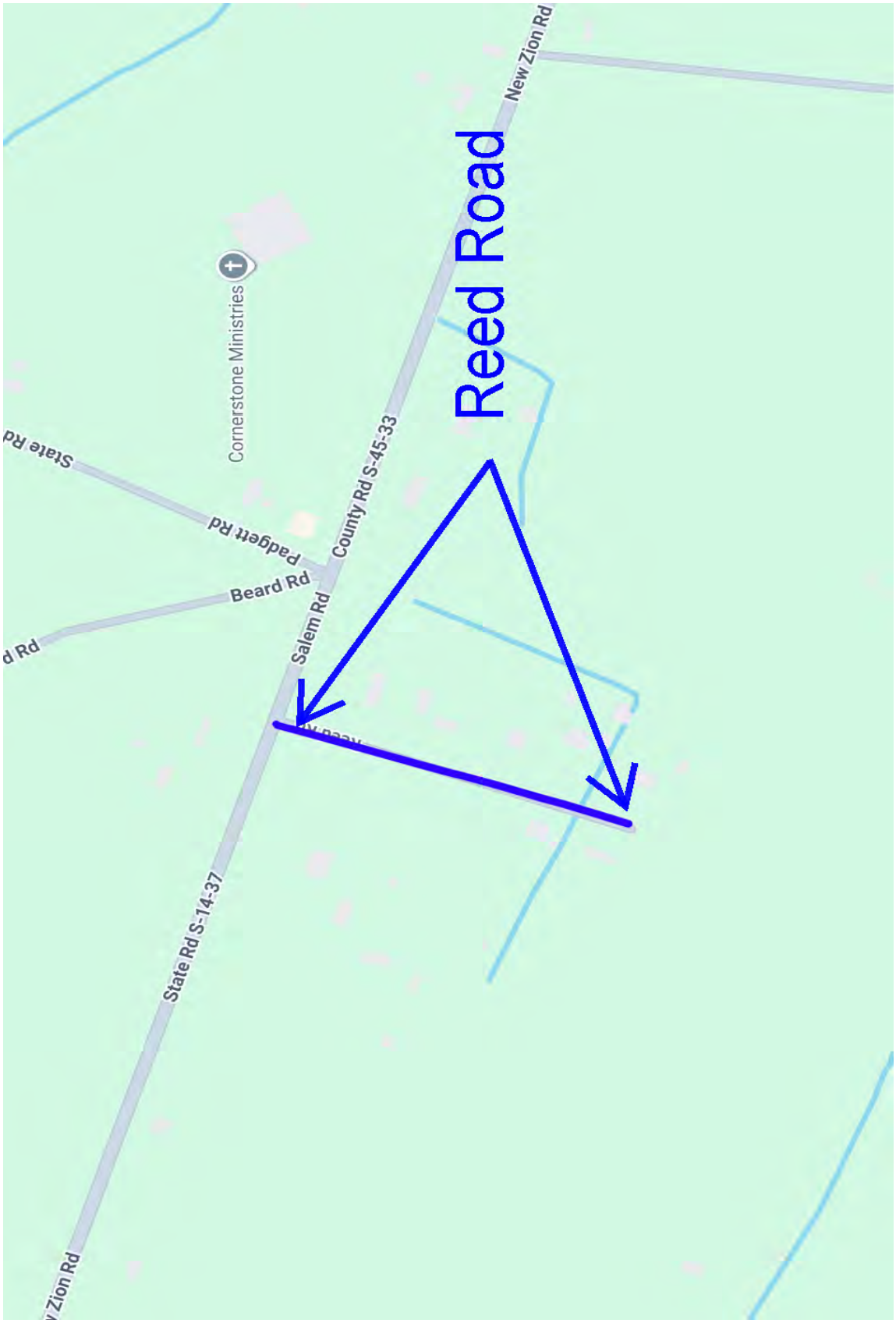
1. Clarendon County
2. Barnwell Street
3. Boyd Road
4. Goat Island Road
5. Reed Road
6. Timberline Lane

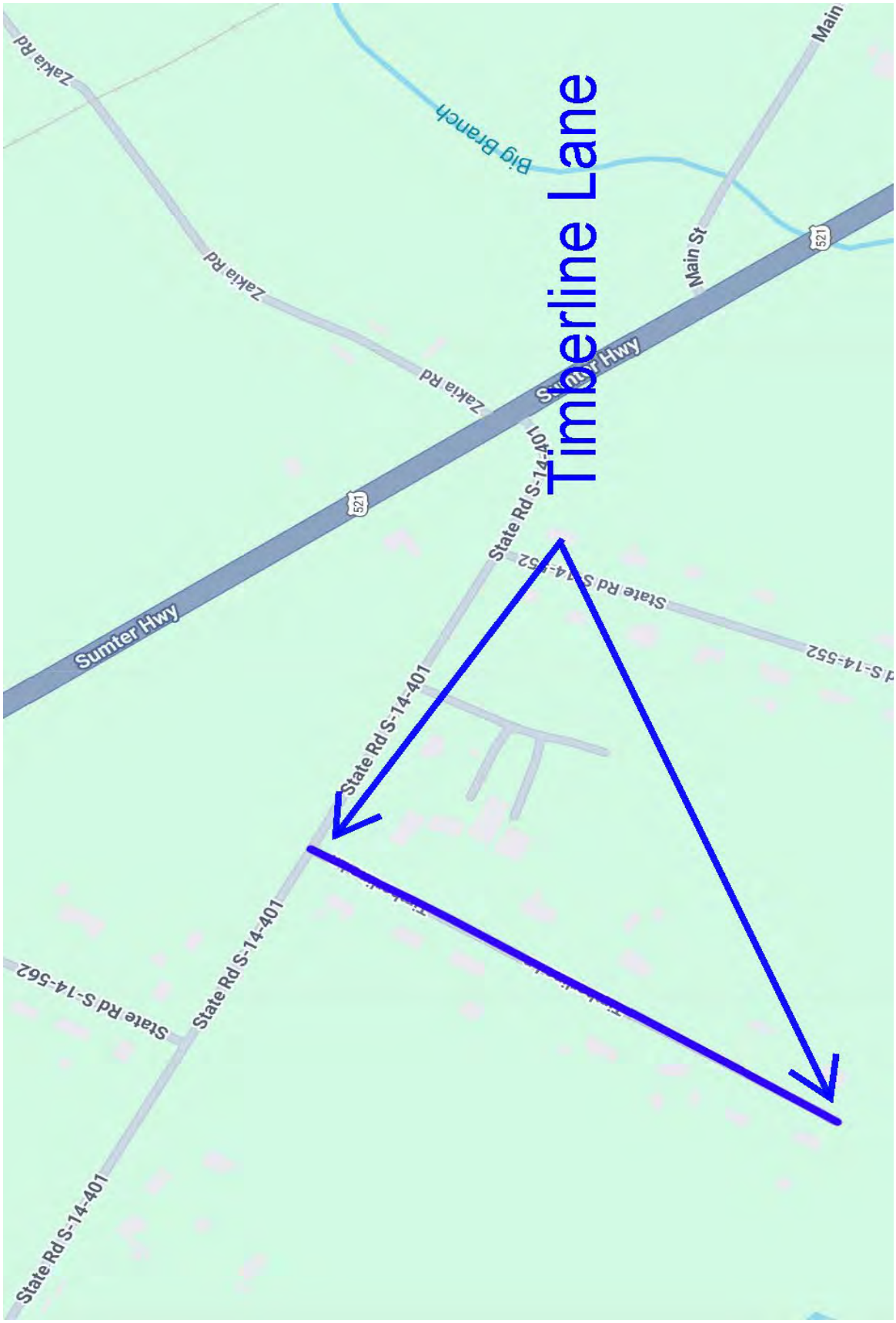

Reed Road
4
Timberline Lane
5
Barnwell Street
1
Boyd Road
2
Goat Island Road
3


Barnwell Street
W Huggins St
Brunson St
Head Start St
Bellewood Park
Fellowship Baptist Church
Moorer St
Lawson St
Spann St
Bellewood Ct
Sweet Wa
Branchview Dr
Berry St
Bell Branch
Branch St
Watt


Boyd Road
Bradham Rd
State Rd S-14-111
Parxville Hwy
Corn field
New Start Community Church
J W Rhames Rd
Home Branch Rd
261
Ponderosa Rd
Porter Rd
Smith Riley Rd
McCray Rd
Boyd Rd


Goat Island Road
Goat Island
State Rd S-14-467
State Rd S-14-467

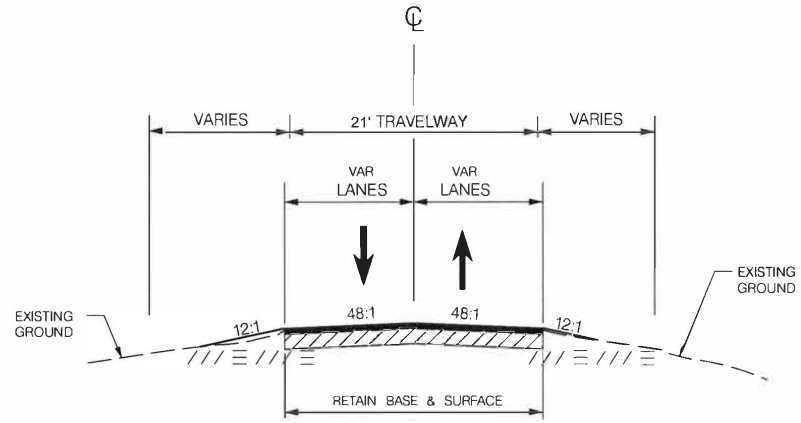

Reed Road
New Zion Rd
Cornerstone Ministries
County Rd S-45-33
Salem Rd
Beard Rd
Padgett Rd
State Rd
State Rd S-14-37


Timberline Lane
Zakia Rd
Big Branch
Main
Main St
521
Sumter Hwy
State Rd S-14-401
State Rd S-14-562
State Rd S-14-401

TYPICAL SECTION

(BARNWELL STREET)

Typical Cross Sections provided for other 4 roads in plans



TYPICAL CROSS SECTION
BARNWELL STREET
(FROM SPANN DR. TO DEAD END)

N.T.S.

GENERAL NOTES FOR TYPICAL CROSS SECTION:

1) CONTRACTOR TO CONTACT ALL UTILITY COMPANIES BEFORE ANY WORK COMMENCES. VERIFY UTILITIES WITHIN PROJECT AREA.

2) ALL WORK SHALL CONFORM WITH APPLICABLE SCDOT REQUIREMENTS AND CODES.

3) TEMPORARY CONTROL OF STORM WATER DRAINAGE SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR, AND SHALL BE MAINTAINED THROUGHOUT THE PERIOD OF CONSTRUCTION.

4) WHERE EXISTING PAVEMENT IS SHOWN TO BE MATCHED, EDGE OR CONTACT FACE WITH EXISTING PAVEMENT SHALL BE SAW CUT TO A REAL VERTICAL LINE.

5) ADJUSTMENT, RELOCATION, OR REPLACEMENT OF EXISTING TELEPHONE, ELECTRIC, TELEVISION, AND OTHER PRIVATE UTILITIES SHALL BE COMPLETED IN CONJUNCTION WITH THE TIME FRAME OF THE CONTRACT SCHEDULE. THIS WORK SHALL BE COORDINATED BY THE CONTRACTOR.

6) ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH: SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION, STANDARD DRAWINGS AND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, EDITION 2009.

7) ADD YELLOW BIDIRECTIONAL RAISED PAVEMENT MARKERS (SEE SCDOT STANDARD DRAWING NO. 630-205-00 FOR RAISED PAVEMENT MARKER PLACEMENT)

8) PLACE 24" WIDE WHITE STOP BARS AT EACH END OF ROAD AND AT ALL INTERSECTING ROADS WITH STOP SIGN. APPLY TEMPORARY FAST DRY PAINT UNTIL THERMO PLASTIC CAN BE APPLIED. (SEE SCDOT STANDARD DRAWING)

9) ALL RADII ARE 25' UNLESS OTHERWISE SHOWN.

LEGEND

220 LBS./SY – HOT MIX ASPHALT TYPE C (LIQUID INCLUDED)

EXISTING PAVEMENT

INFRASTRUCTURE CONSULTING & ENGINEERING

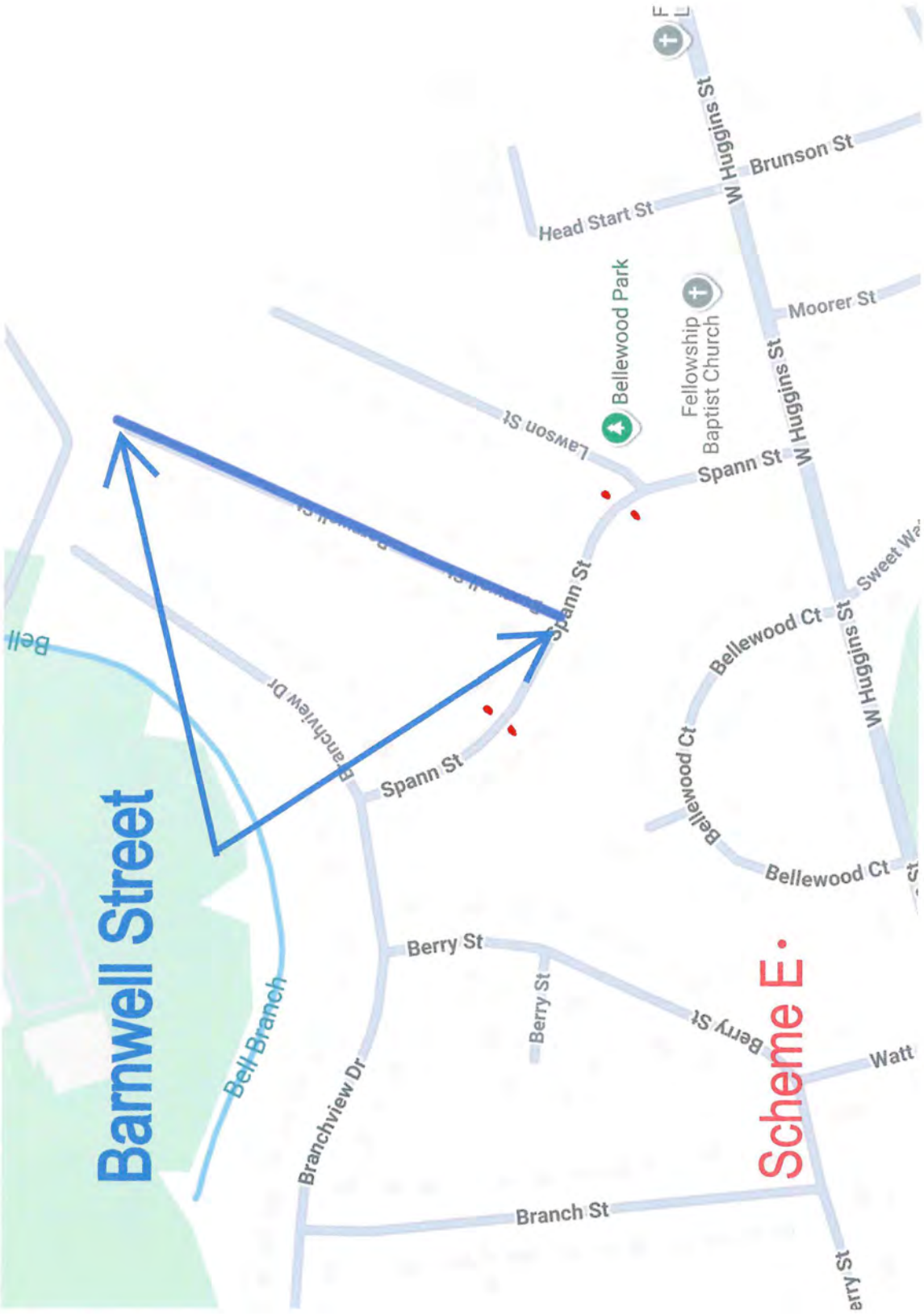
24-232.02

2025 CLARENDON COUNTY CTC ROAD IMPROVEMENT PROJECT

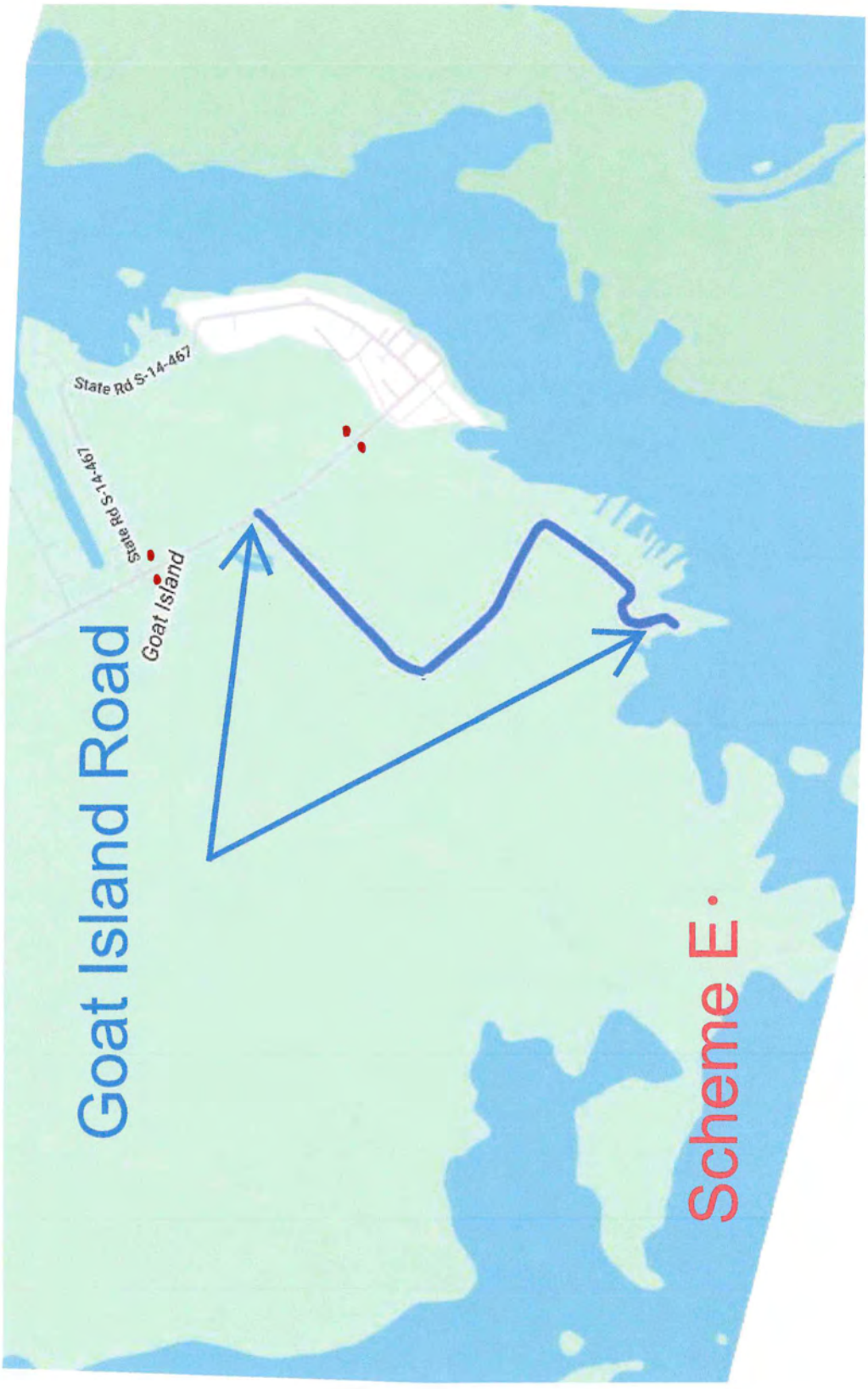
NTS | DWG. NO. 1 OF 1

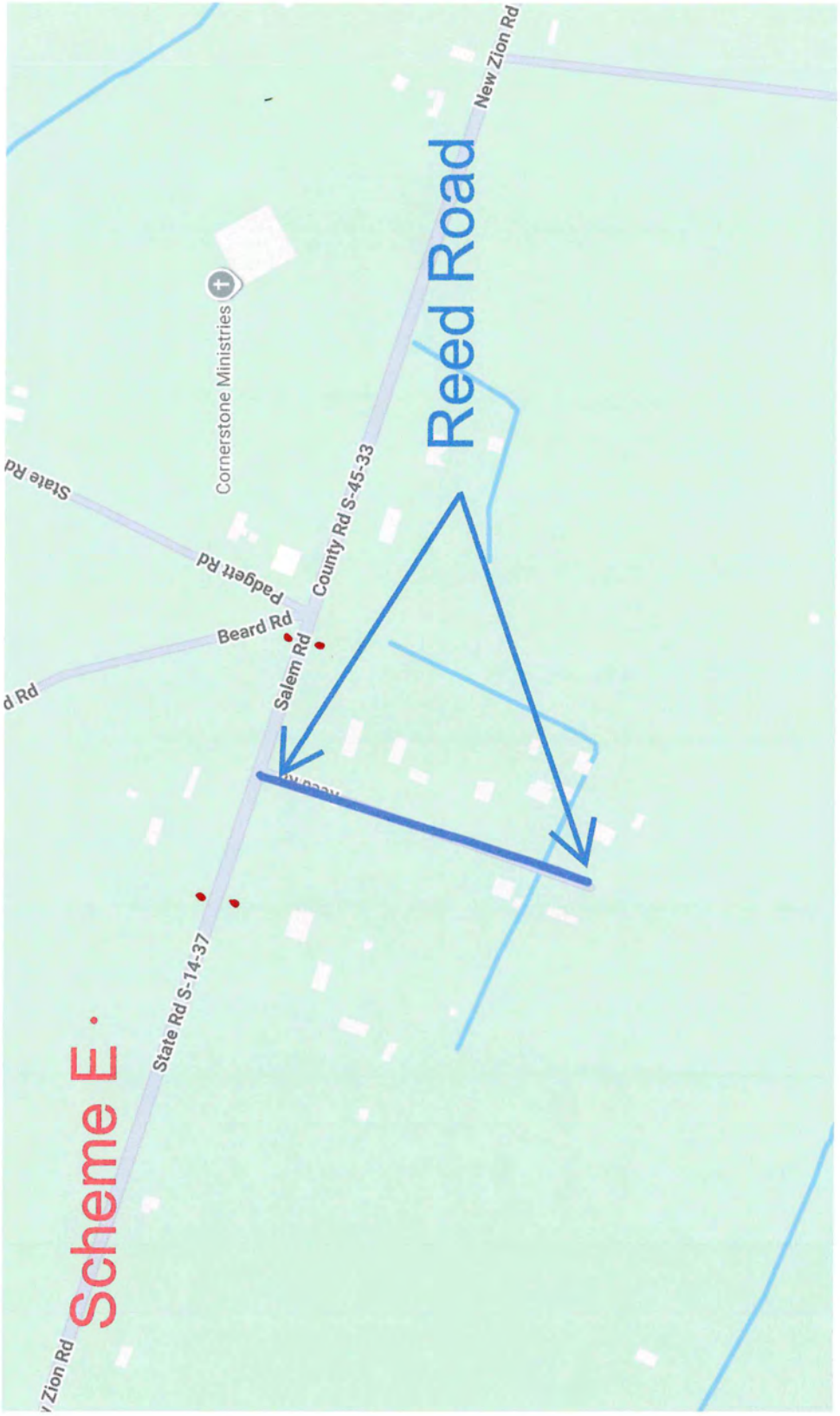
Z:\Clarendon County On-Call\Plans\Typical Sections\Typical Sections.dwg 8/2025

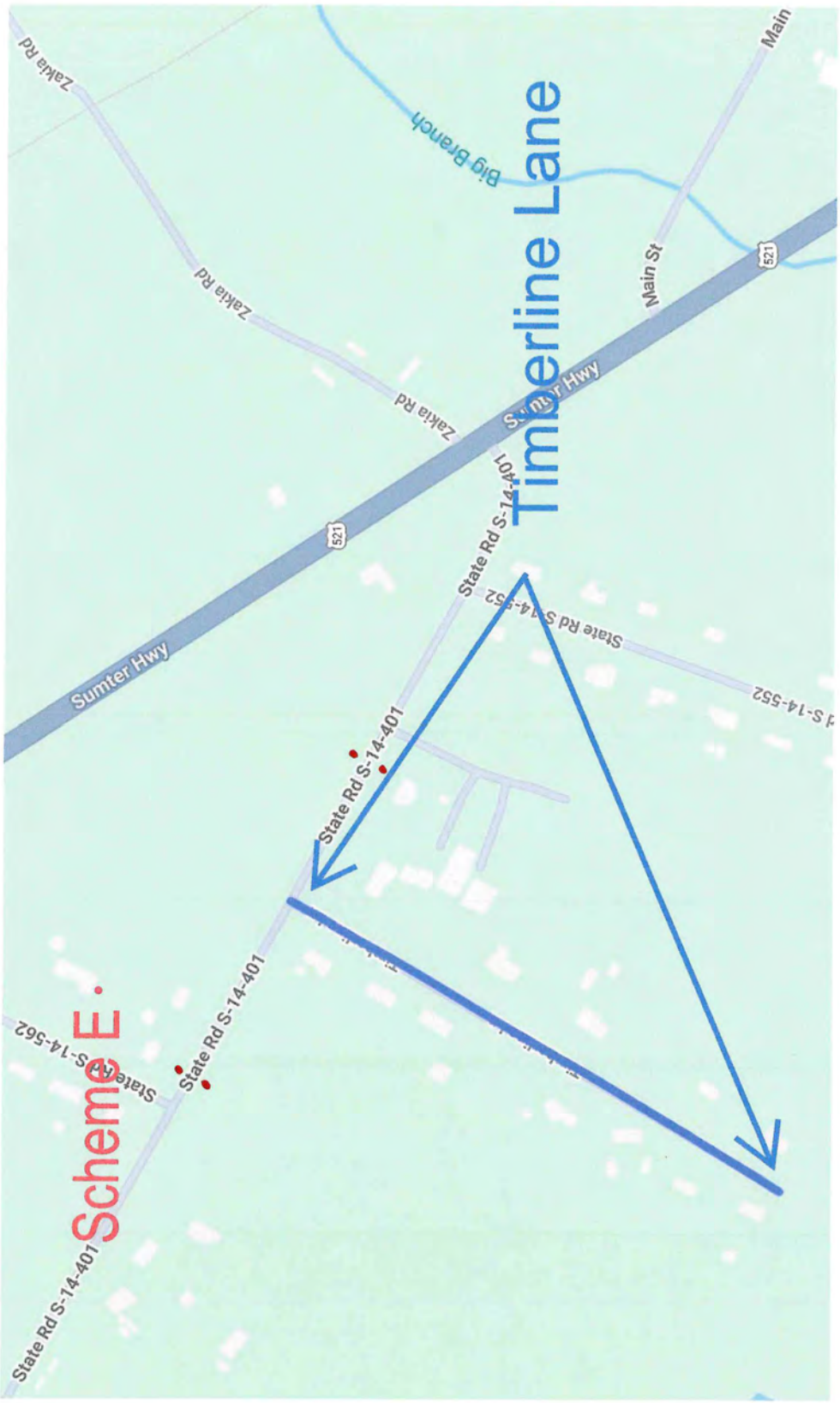
PERMANENT CONSTRUCTION SIGNS


Barnwell Street
Scheme E
W Huggins St
Brunson St
Head Start St
Bellewood Park
Fellowship Baptist Church
Moorer St
Lawson St
Spann St
Bellewood Ct
Branchview Dr
Berry St
Bell Branch
Watt
Branch St


Boyd Road
Scheme E
Paxville Hwy
Corn field
State Rd S-14-111
Bradham Rd
New Start Community Church
J W Rhames Rd
Home Branch Rd
Mt Zion Church
Ponderosa Rd
Potter Rd
Smith Riley Rd
McCray Rd
Boyd Rd
261


Goat Island Road
Goat Island
State Rd S-14-467
State Rd S-14-467
Scheme E


Reed Road
New Zion Rd
Cornerstone Ministries
State Rd
Padgett Rd
County Rd S-45-33
Beard Rd
Salem Rd
State Rd S-14-37
Scheme E


Timberline Lane
Scheme E
Zakia Rd
Big Branch
Main
Main St
521
Sumter Hwy
State Rd S-14-401
State Rd S-14-52
State Rd S-14-562

PLANS

PLANS ARE PROVIDED IN A SEPARATE ATTACHMENT
FOR BOYD ROAD, GOAT ISLAND ROAD, REED ROAD, & TIMBERLINE LANE